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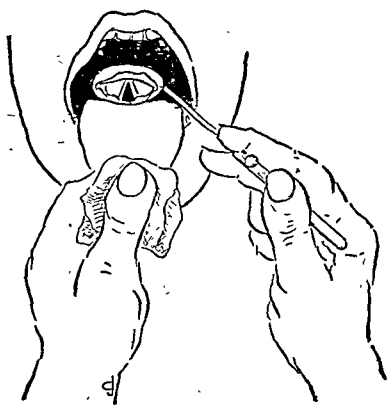
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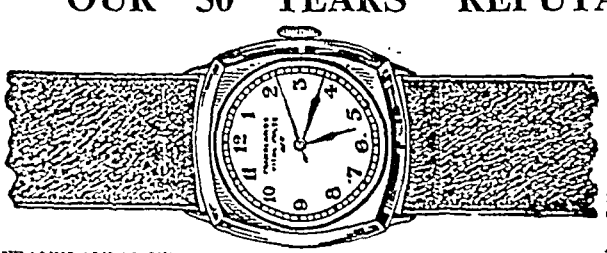
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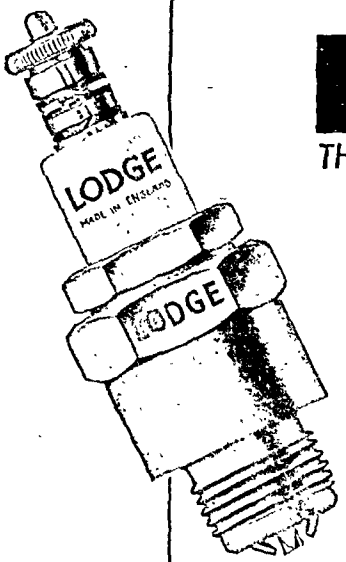


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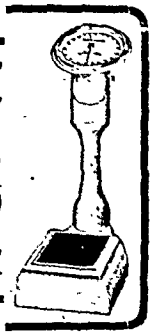
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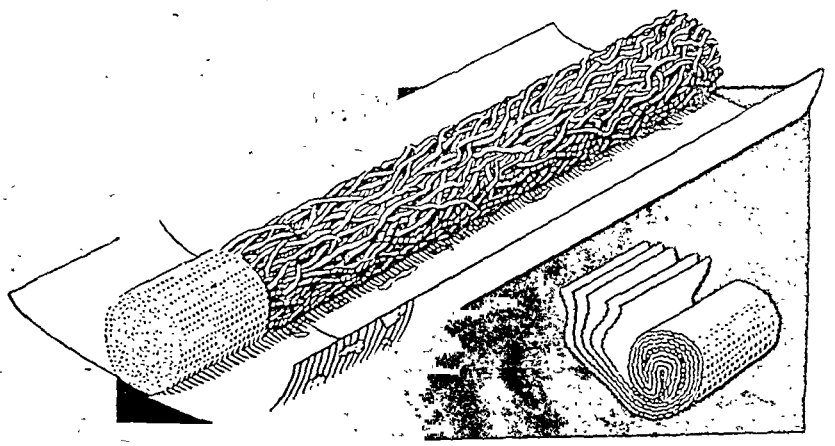
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Because of its double function, the "du Maurier" filter tip has become a really important factor to smokers—specially to those with a tendency to sensitive throat. Each "du Maurier" has a five layer filter made up of pure white vegetable tissue interleaved with cellulose fibre. The filter allows no bits in the mouth and isolates all irritants. This filter is a feature on *both* the plain tip 'medium' and the cork tip.



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TEN FOR SIXPENCE • TWENTY FOR ONE SHILLING

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DEAN'S X-RAY APPARATUS

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Every Dean X-Ray Unit is a symbol of accuracy. Dean's Apparatus has been used for many years by eminent radiologists in both large and small X-Ray departments, unfailingly giving complete satisfaction. May we send YOU some interesting details of our units?

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Effective support without constriction is made possible by the anterior-posterior pressure given by the Curtis Abdominal Support No. 1 This Support, one of over 100 abdominal appliances made by Curtis, gives steady, permanent support where it is most needed. Yet it is extremely light in weight and very comfortable in wear, giving perfect freedom to the hips. Medical Authorities throughout the world approve the Curtis Abdominal Support No. 1, and prescribe it for all cases where support upward and backwards of the lower abdomen is essential.

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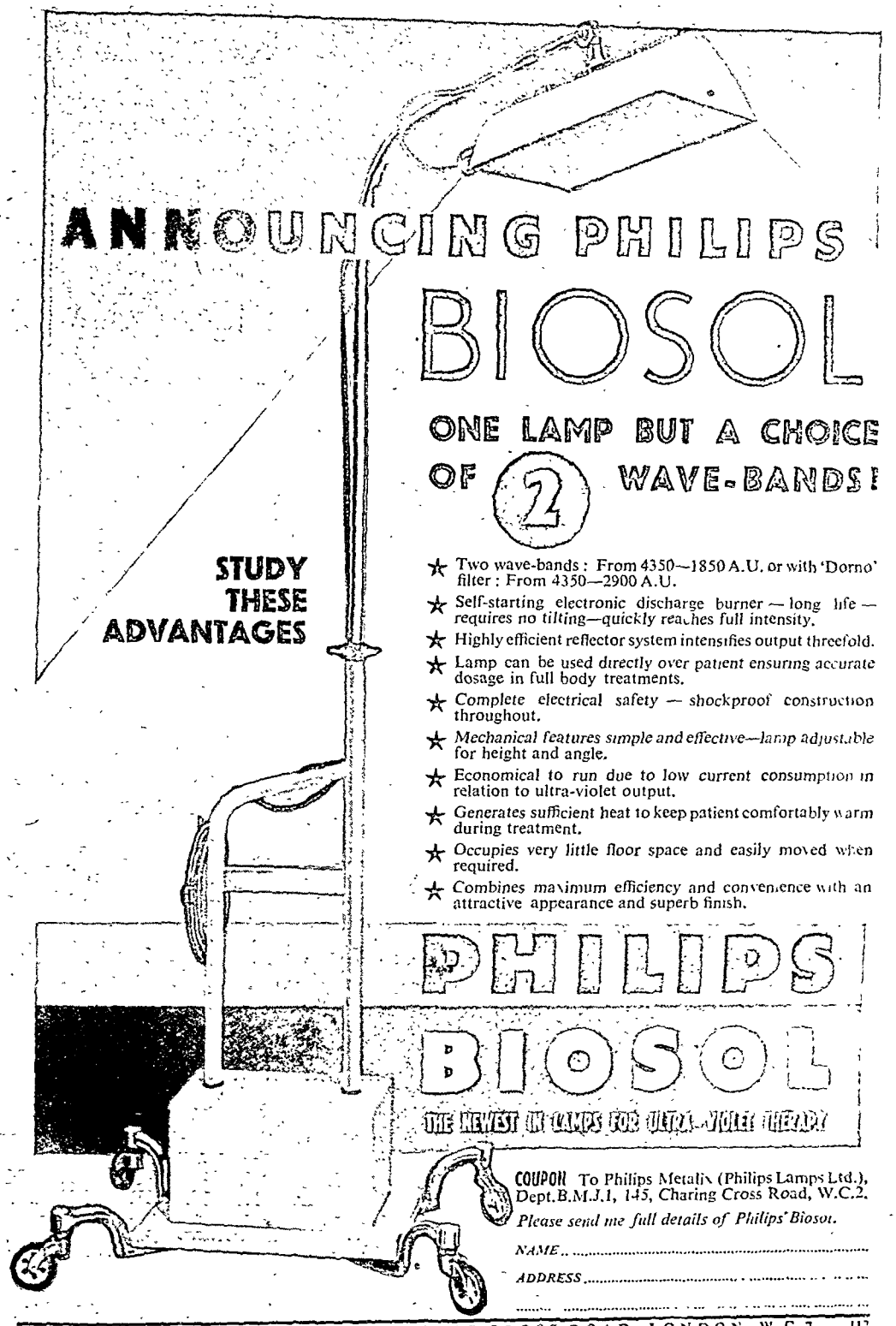
ABDOMINAL SUPPORT No1

Specialists in Abdominal Appliances.

Sole Makers of
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ONE LAMP BUT A CHOICE OF 2 WAVE-BANDS!

STUDY THESE ADVANTAGES

- ★ Two wave-bands: From 4350—1850 A.U. or with 'Dorno' filter: From 4350—2900 A.U.
- ★ Self-starting electronic discharge burner — long life — requires no tilting—quickly reaches full intensity.
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- ★ Combines maximum efficiency and convenience with an attractive appearance and superb finish.

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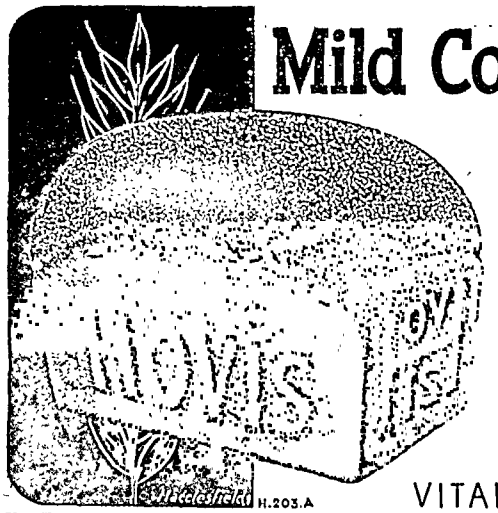
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Mild Constipation shown to yield to laxative effect of HOVIS

Many of the mild forms of constipation so prevalent to-day are attributed to the consumption of foods deficient in Vitamin 'B.' In comparing the effects of various kinds of bread it is seen that HOVIS germ bread is superior to either white bread or wholemeal in supplying this deficiency.

Whilst white bread contains practically no Vitamin 'B,' HOVIS, with its added proportion of 25% wheat-germ, supplies an abundance of this essential food-element. Unlike wholemeal bread, HOVIS contains only a minute percentage of bran and indigestible cellulose. In other words its incorporation in the normal diet ensures not only a higher standard of nutrition but easier assimilation and regular evacuation of the intestinal contents.

VITAMIN 'B' CONTENT ACTS AS AID TO REGULARITY

Modern Iron Therapy

Iron 'Jelloids' are an elegant and reliable means of administering the protocarbonate of iron. The preparation has none of the disadvantages of Pil. Blaud. The iron content remains fresh and unoxidized indefinitely, and injury to the teeth is avoided.

The 'Jelloids' are highly effective in the treatment of achlorhydric anæmia and indeed in all the simple anæmias in which massive iron therapy is indicated.

Iron Jelloids

You are cordially invited to apply for samples for clinical test.
The Iron 'Jelloid' Co. Ltd., King George's Avenue, Watford, Herts.

THE IDEAL ANTACID

Magnoleum is an emulsion of liquid paraffin and magnesium hydroxide prepared entirely by mechanical means without the aid of any constipating mucilaginous emulsifying agents. Its action is that of its active ingredients in an extremely fine state of sub-division. Being perfectly miscible with water or milk it may be diluted before taking, given to bottle-fed infants in food, etc. It is readily acceptable to children and delicate or fastidious adults.

Issued in convenient wide mouthed glass bottles, 1/3 and 2/6. Write for specimen for clinical trial.

KERFOOT

MAGNOLEUM STOMACH CORRECTIVE

Made in England by THOMAS KERFOOT & CO. LTD., Vale of Bardsley, Lancashire.

LACTAGOL (Edestine, Calcium, Phosphorus) helps to compensate for the constant drain by the foetus upon the reserves of the expectant mother.
It is a valuable roborant during convalescence following parturition and exerts a definite galactagoguic action on the mammary glands of the nursing mother.
Specimens for clinical trial free on application. Lactagol Ltd., Mitcham, Surrey.

Expectant and Nursing Mothers thrive upon Lactagol

VISIT STANDS 54 & 55
at the B.M.A.
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New and Interesting Preparations

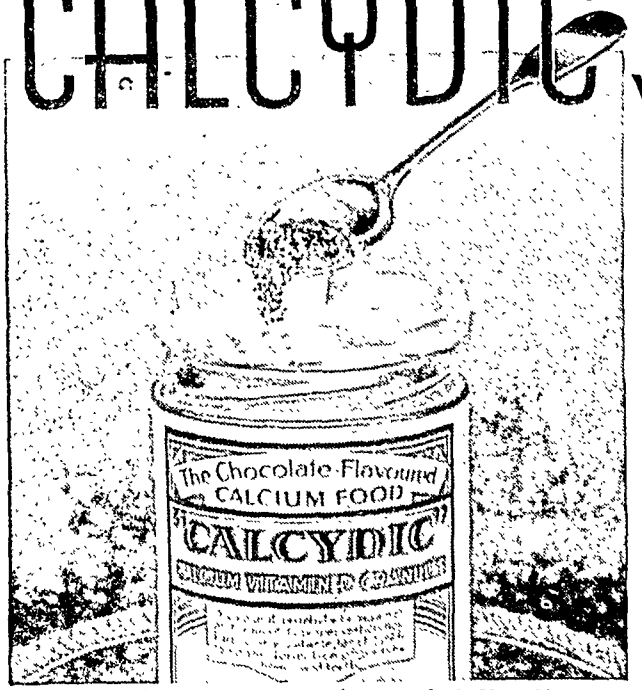
'PICRAGOL' Products—A new treatment for *Trichomonas* Vaginitis and non-specific vaginitis; 'PLASTULES'—ferrous sulphate and yeast in capsule form for anaemias and general debility; 'AMPHOJEL'—"Amphoteric" antacid which avoids all danger of alkalosis or secondary hypersecretion; 'VAKARA'—bulk creating laxative capable of absorbing twenty-eight times its own volume of moisture; these and other preparations of interest to doctors will be on display at stands 54 and 55 at Belfast. Samples and literature will gladly be sent on request.

JOHN WYETH & BROTHER, LTD.,
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PRODUCTS OF QUALITY

By Appointment
GAYMER'S CYDER

WM. GAYMER & SON LTD.,
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hope to have the pleasure of meeting old and new friends at their stand at the:—
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"CALCYDIC" calcium vitamin D granules



Supplies of calcium and phosphorus are essential to the action of vitamin D. Whereas ordinary calcium phosphate contains 1 part by weight of phosphorus to 2 of calcium, dicalcium phosphate ($CaHPO_4$) contains 3 parts of phosphorus to 4 of calcium. "Calcydic" Granules are delicious.

Each teaspoonful contains—

Dicalcium phosphate	7½ grains
Vitamin D	1,500 units
Glucose, Chocolate and Cane Sugar	

These granules may be given to children or adults, prophylactically or therapeutically, in rickets, pregnancy, lactation, osteomalacia, menorrhagia, convalescence, chilblains, and urticaria.

In Tins of ½ lb. 2/3, and 1 lb. 4/-

Descriptive literature and clinical trial sample will be sent on request

Manufactured in England by

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Telephone: 3201 Bishopsgate (12 lines) Telegrams: "Greenburys, Beth London"

KAYLENE-OL

KAYLENE BRAND OF COLLOIDAL KAOLIN WITH HIGHLY VISCOUS LIQUID PARAFFIN

DUAL ACTION:—

DETOXICATION

PLUS

EVACUATION

Kaylene-ol is indicated in the treatment of Intestinal Toxaemia and Stasis, Chronic Colitis, dietary indiscretions and in all conditions due to toxic absorption from the bowel.

Samples and literature on request.

KAYLENE LIMITED, WATERLOO ROAD, LONDON, N.W.2

KAYLENE TERRA FIC ILLATA BRAND

BY APPOINTMENT

Schweppes

SUGAR-FREE GINGER ALE . . . .
SUGAR-FREE TONIC WATER. . .
SUGAR-FREE SPARKLING LIME

Approved by the Institute of Hygiene and the Diabetic Association.

These beverages have been analysed by the Institute of Hygiene and found "free from sugar and metallic contaminants." The analyses shown have been accepted by the Medical Advisory Council of The Diabetic Association and recommended for diabetic and obese subjects.

ANALYSIS SHOWED THE FOLLOWING RESULTS:

Schweppes Sugar-Free Dry Ginger Ale		*Ordinary Dry Ginger Ale*	*Schweppes Sugar-Free Tonic Water*		*Ordinary Tonic Water*	*Schweppes Sugar-Free Sparkling Lime*		*Ordinary Sparkling Lime*
Carbohydrates	absent	6.2%	Carbohydrates	absent	9.1%	Carbohydrates	absent	11.8%
Protein	absent	absent	Protein	absent	absent	Protein	absent	absent
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IS THE GARGLE BOTH PLEASANT AND EFFECTIVE?

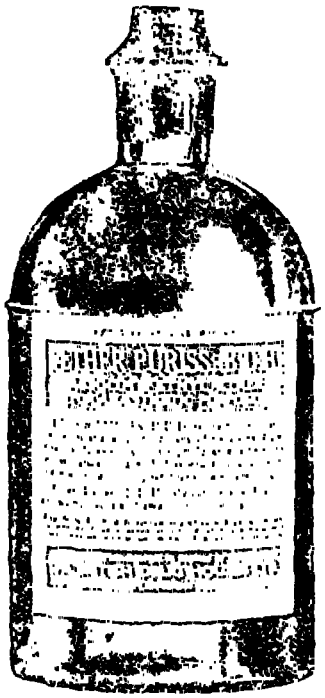
Together with its germicidal efficiency 'Dettolin' possesses an agreeable taste and smell, important incentives to regular and thorough use by the patient. Especially in treating septic and inflamed conditions of the mouth and throat 'Dettolin' is invaluable. (It contains as an ingredient the active germicidal principle of 'Dettol.')



'DETTOLIN' BRAND
MOUTHWASH AND GARGLE

'DETTOLIN' *is obtainable through Chemists and Medical Suppliers, Price* 1/6. *Samples and full information on request.*

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'. . . the ideal anæsthetic.'

According to a published report (Brit. Journ. Anæs., April 1935, p. 99) the ideal anæsthetic is ether.

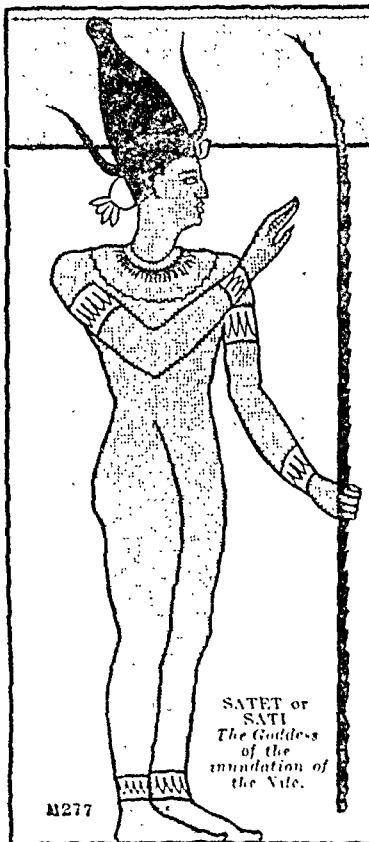
Experience over a long period of years demonstrates that the ideal anæsthetic ether is

ÆTHER PURISS. B.D.H.

Sample on request

THE BRITISH DRUG HOUSES LTD.
LONDON N.1

AP/S/37



SATET or SATI
The Goddess of the inundation of the Nile.

M277

OVALTINE

AN AID TO HEALTHY DEVELOPMENT

MODERN medical research makes it increasingly clear that abnormalities of form, mental defects and even permanent constitutional weakness, are often a direct result of failure to obtain in infancy a diet adequate to the physiological needs of the organism. The basic necessity, therefore, in constructing the dietary of the infant and growing child, is to ensure one that is complete in all the essential food elements.

"Ovaltine" finds one of its most valuable applications in this direction. Composed of the nutritive constituents of fresh, full-cream milk, eggs and malt, in well-balanced proportions, it supplies calcium, phosphorus, vitamins and other accessory food factors, and its regular addition to the ordinary diet of the child renders this safe and adequate.

"Ovaltine" is so delicious and easily digested that it can be prescribed with complete confidence for children of all ages. "Ovaltine" is easily prepared and is most economical.

A liberal supply for clinical trial sent free on request.

A. WANDER, Ltd., 184, Queen's Gate, S.W.7.
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Valentine's Meat-Juice

IN Debility, Nervous Exhaustion and Anaemia, where Digestion is Impaired and it is Essential to Conserve the Weakened Vital Forces, Valentine's Meat-Juice demonstrates its Ease of *Assimilation and Power to Restore and* Strengthen.



Employed in many Hospitals and Sanatoriums and recommended by many leading Physicians and Surgeons throughout the world.

Physicians are invited to send for Clinical Reports.

For Sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY
RICHMOND, VIRGINIA, U.S.A.

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MANDELIX

(Elixir of Ammonium Mandelate B.D.H.)

In Urinary Tract Infections

Mandelix therapy in urinary infections results usually, even in cases having a chronic infection, in the establishment of sterile urine within a week. Moreover, on account of the palatability of the elixir (the sole medicament necessary in the majority of cases) the treatment has the ready co-operation of the patient.

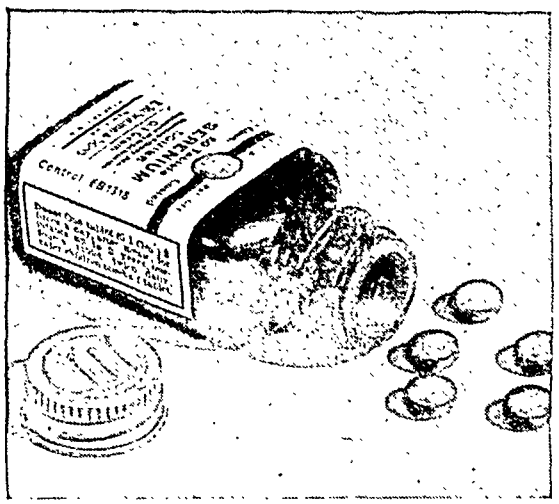
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THE BRITISH DRUG HOUSES LTD. LONDON N.1

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SERENIUM



. . . a non-irritating antiseptic dye for use in genito-urinary infections

SERENIUM is bacteriostatic to urinary pyogenic organisms. Its antiseptic action combats the infective processes and helps the physician to maintain suitable local treatment. It lessens the irritation and promotes the comfort of the patient.

SERENIUM is a distinct chemical compound—an azo dye of high purity and uniformity, especially prepared for the oral treatment of genito-urinary infections. It is non-irritating, free from toxic effects and active in acid or alkaline urine.

SERENIUM is distributed in bottles of 25, 50 and 500 chocolate-coated tablets of 0.1 Gm. each

Sole Distributors for

E. R. SQUIBB & SONS, NEW YORK.

MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858

SAVORY & MOORE Ltd.

Medical Department: 61, WELBECK ST., LONDON, W.1.

'PANOPEPTON'

'PANOPEPTON' is the food par excellence for invalids; in all acute diseases, fevers, etc., in convalescence, for the large class of persons who, from feebleness or deranged digestion, or antipathy to ordinary foods, require a fluid, agreeable, and quickly assimilable food.

Supplied in 12-oz. bottles.

For an adult the usual portion should be a dessertspoonful to a tablespoonful several times a day and at bedtime.

PEPTOGENIC MILK POWDER

For preparing HUMANISED MILK.

Humanised Milk is easily prepared with Peptogenic Milk Powder, is very palatable, being thin and sweetish like human milk. It very closely approximates to Mother's Milk, both qualitatively and quantitatively, and calls for the same digestive action on the part of the infant as does breast milk.

Supplied in two sizes.

Originated and Manufactured by—

FAIRCHILD BROS. & FOSTER (Inc. N.Y.), *NEW YORK, and 65, Holborn Viaduct, London, E.C.1*

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BURROUGHS WELLCOME & CO., *LONDON, SYDNEY, and CAPE TOWN*

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MEDISOAPS MIDGLEY

The nightly soaping of the face, chest and other affected parts for five minutes or so with a suitable sulphur soap and warm water is usually effective in preventing pustules. The scalp, being part of the seborrhoeic area should also be shampooed frequently if re-infection is to be prevented.

The following formulæ are well adapted for this purpose. Medisoap No. 99 is advised for average cases.

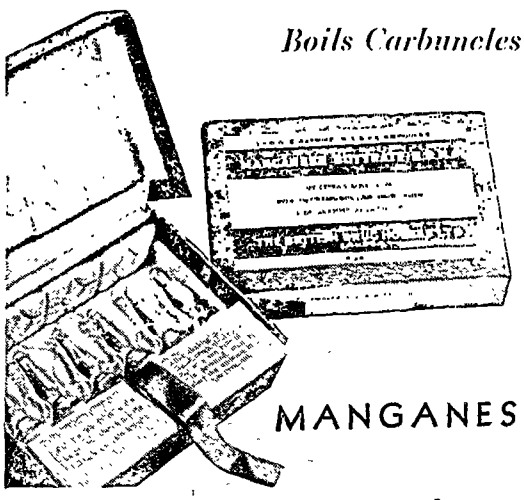
Medisoap No. 19
Sulph. præcip. 5%.
c Camph. et Bals. Peru.

Medisoap No. 99
(*super-fatted*)
Sulph. præcip. 5%.

Medisoap No. 18
Sulph. præcip. 10%.
Betanaphthol 2½%.
(Price of the above **1/3** per tablet).

Medisoap No. 4
(*alkaline*)
Sulph. præcip. 10%.
(Price of the above **1/-** per tablet).

EVANS SONS LESCHER & WEBB LTD.
Liverpool and London.



Boils Carbuncles Whitlows Abscesses Ulcers

In the treatment of staphylococcic, streptococcic, gonococcic and other acute infections the intramuscular injection of Manganese Butyrate B.D.H. produces remarkably beneficial effects.

MANGANESE BUTYRATE B.D.H.

Sample on request

THE BRITISH DRUG HOUSES LTD. LONDON N.1

MB/S/22



A major operation in progress in the operating theatre of a London Hospital.

DEGREES OF PROTECTION....

THE most elaborate precautions against every possible chance of germ infection are of course essential in the operating theatre. It would be ridiculous, however, to expect anything approaching this meticulous attention to antiseptic cleanliness in everyday hygiene and in the home treatment of superficial wounds.

The general public is nevertheless beginning to realise the importance of germ-free cleanliness. Hygienic standards to-day are higher than they have ever been. It is generally agreed by medical men that although regular use of antiseptics is not desirable or really necessary for ordinary toilet purposes, the use of a reliable antiseptic soap can play a very valuable part in the prevention of infectious disease. Face and hands are continually exposed to infectious germs, and require washing with Wright's Coal Tar Soap.

Wright's has substantial antiseptic and antipruritic qualities. For over 70 years it has enjoyed the confidence of the medical profession, and to-day more doctors use Wright's than any other brand of toilet soap. Wright's Coal Tar Soap is prepared from materials selected after stringent tests. It is the only soap in the world to contain 'liquor carbonis detergens' (Wright's), the valuable dermatological therapeutic recommended by skin specialists the world over. In surgeries, hospitals, nursing homes and private households Wright's meets all the requirements of modern everyday hygiene. You can use it and recommend it to your patients with complete confidence.

WRIGHT'S
COAL TAR SOAP
The Safe Soap

Wright, Layman & Umney Ltd., 44-50 Southwark Street, S.E.1

ANTI-STREPTOCOCCAL THERAPY

ORAL

TRADE **PROSEPTASINE** MARK

Benzylaminobenzenesulphonamide

(M & B 125)

The introduction of the BENZYL group into the molecule of the simple sulphonamide gives a product which is practically tasteless, well tolerated and of high anti-streptococcal activity.

Tablets of 0.5 gramme.

PARENTERAL

TRADE **SOLUSEPTASINE** MARK

Disodium - *p* (γ-phenyl-propyl-amino) benzene-sulphonamide - α-γ-disulphonate

The first colourless anti-streptococcal drug to be prepared which is suitable for parenteral administration.

Ampoules of 5 c.c. and 10 c.c.

SOLUSEPTASINE is for use either alone or in conjunction with PROSEPTASINE (the first colourless oral anti-streptococcal drug to be presented to the medical profession in this or any other country). It is intended for the treatment of severe streptococcal infections, where the immediate presence of the streptococcidal drug in the blood is necessary.

Samples and literature on request.



PHARMACEUTICAL SPECIALITIES

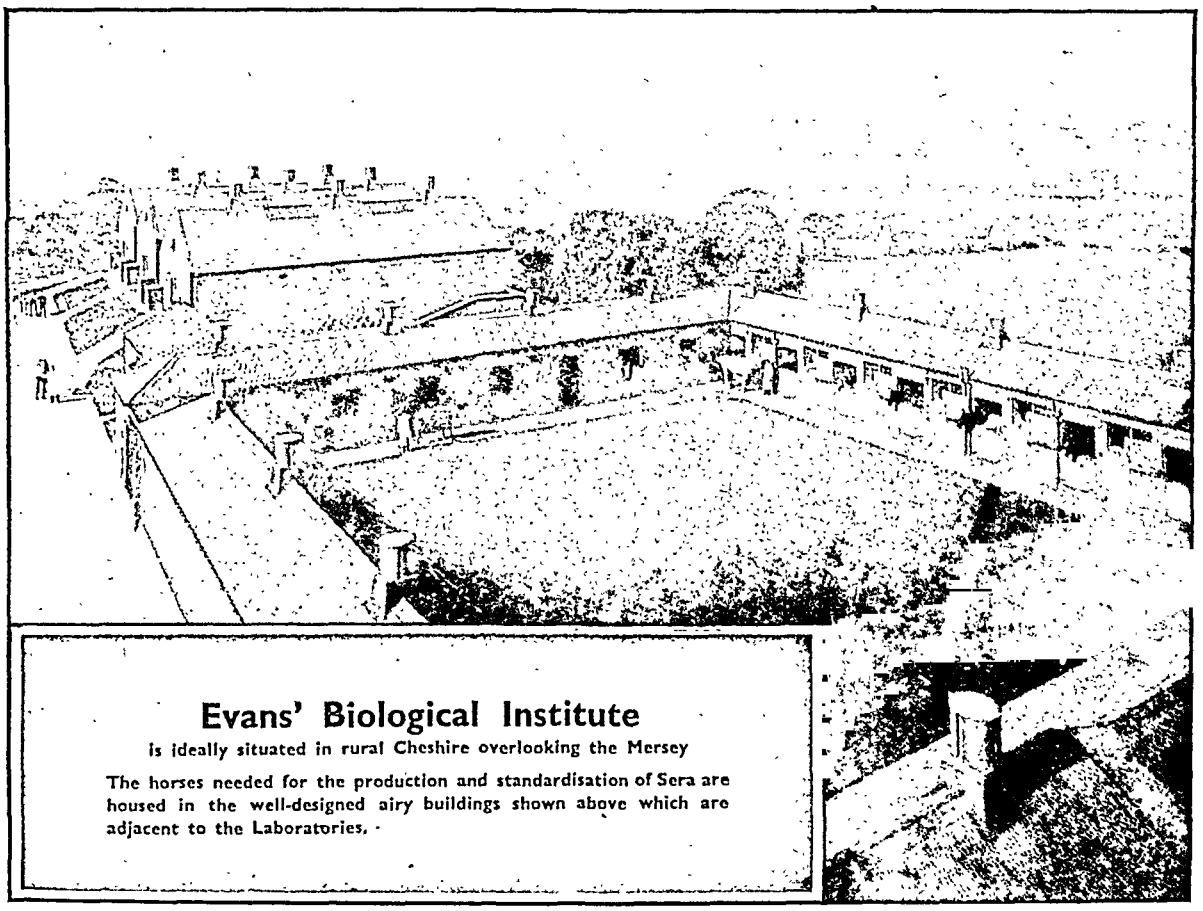
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EVANS' ANTITOXINS

Diphtheria Antitoxins - - Concentrated
1,800-2,200 units per cc.
Super-Concentrated
3,000 (or more) units per cc.

Streptococcus Antitoxins Erysipelas
Puerperal
Scarlatina

Tetanus Antitoxins - - - Prophylactic
Curative



Evans' Biological Institute
is ideally situated in rural Cheshire overlooking the Mersey

The horses needed for the production and standardisation of Sera are housed in the well-designed airy buildings shown above which are adjacent to the Laboratories.

Evans Sons Lescher & Webb Ltd.
LIVERPOOL and LONDON

Cystopurin

The ideal urinary antiseptic for oral administration!

1 Produces no gastric irritation or toxic symptoms.

2 Is readily absorbed from the gut and excreted in the urine.

3 Causes no renal irritation.

4 Renders the urine bactericidal in low concentrations.

5 Acts from the renal pelvis downwards.

6 Is active in either acid or alkaline urine.

7 Perfectly safe for use in febrile conditions.

8 Acts on all causative organisms of urinary infections.

CYSTITIS

From information received :—

"The patient was myself, aged 66 years. Owing to the cold severe weather I had contracted a semi-acute attack of cystitis with strangury, frequency of micturition, inability to retain urine in bladder, urine full of muco-pus and alkaline in reaction. I took two tablets of Cystopurin in a tumbler of water three times a day, and in 24 hours the pain and frequency were relieved. In 48 hours the urine was clear and normal in reaction."

"I find that Cystopurin is most effective in cutting short attacks of cystitis and relieving the frequency and pain which accompany micturition. The fact that IT EXERCISES ITS EFFECTS EQUALLY IN ALKALINE OR ACID URINE is a great help."

"I have had excellent results with Cystopurin in a case of cystitis that had proved difficult to cure with other urinary antiseptics. In this case of a woman of 50, the pain and frequency cleared up after three days of Cystopurin, and the urine was rendered sterile—a very gratifying result."

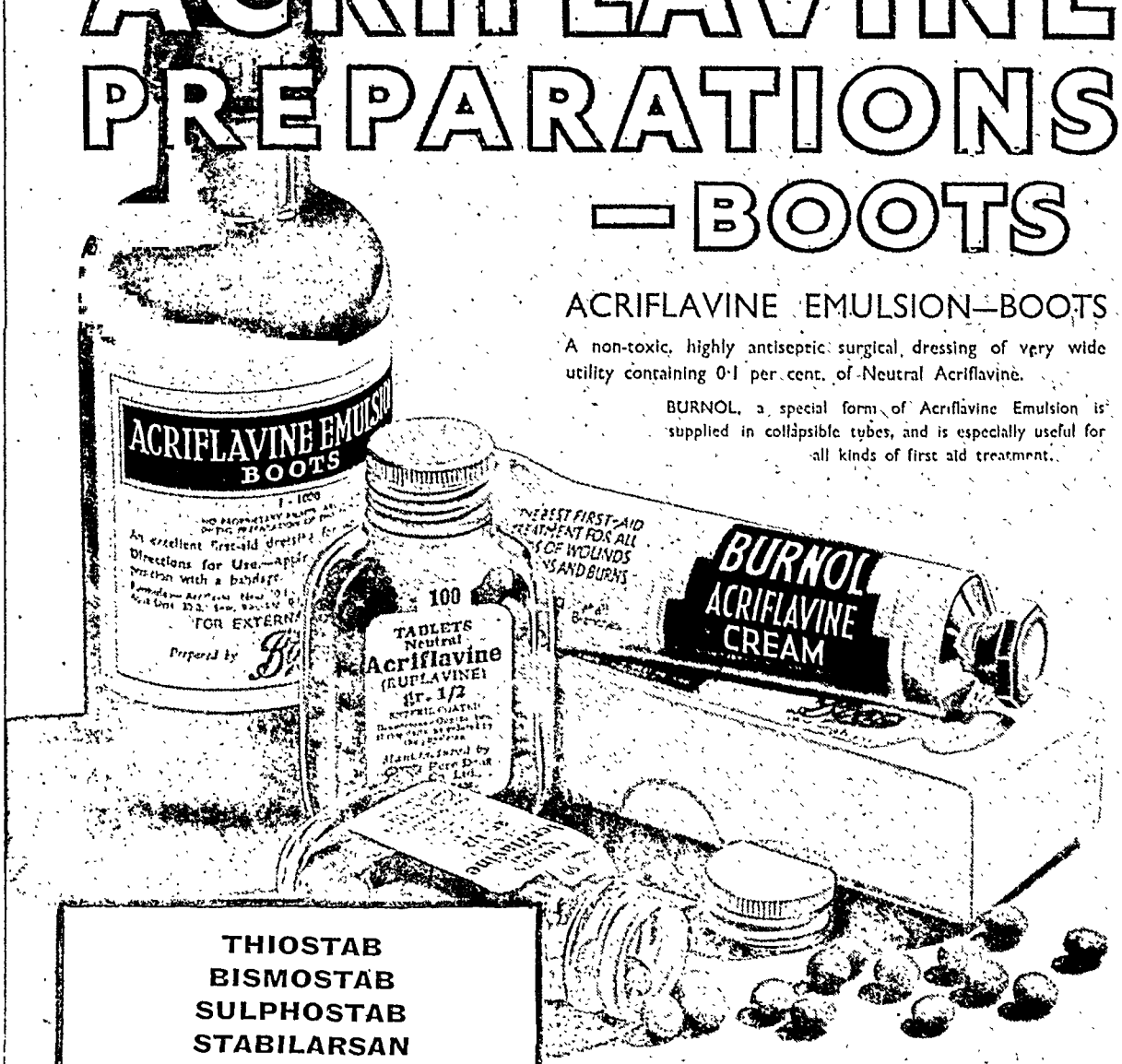
"I used Cystopurin in an obstinate case of cystitis. This improved rapidly, and I consider your preparation more useful for this purpose than other urinary antiseptics I have used."

Supplied in bulk and in tubes of 20 tablets for dispensing purposes.

Samples and literature available on request to

GENATOSAN LIMITED, Loughborough, Leicestershire.

ACRIFLAVINE PREPARATIONS —BOOTS



ACRIFLAVINE EMULSION—BOOTS

A non-toxic, highly antiseptic surgical dressing of very wide utility containing 0·1 per cent. of Neutral Acriflavine.

BURNOL, a special form of Acriflavine Emulsion is supplied in collapsible tubes, and is especially useful for all kinds of first aid treatment.

THIOSTAB
BISMOSTAB
SULPHOSTAB
STABILARSAN
are
BOOTS PRODUCTS

The Boots Chemists

and are obtainable through all branches of

1,150 Branches in Great Britain

TABLETS NEUTRAL ACRIFLAVINE—BOOTS

(Enteric-coated for internal administration.)

Many reports from physicians and urologists testify to the great value of oral administration of Neutral Acriflavine (Euflavine) as an adjunct to the routine local treatment of Gonorrhœa.

DOSAGE: GR. ½ TO GR. 1 T.D.S AFTER FOOD.

Preparations of Acriflavine and Neutral Acriflavine are also available in the form of Solution Tablets, Medicated Gauze, Pessaries, Bougies, and Pigment.

Further particulars and literature will gladly be sent on request.

WHOLESALE AND EXPORT DEPARTMENT

BOOTS PURE DRUG CO. LTD. NOTTM.

"IT'S PURELY A MATTER OF CHOICE"

says OLD HETHERS



"I expect you will continue to prescribe barley water made as I make it—from Robinson's 'Patent' Barley. But my Lemon Barley Water bottled in concentrated form may meet the convenience of many of your patients. It's purely a matter of choice."

ROBINSON'S

LEMON BARLEY WATER

made according to Old Hethers famous recipe and bottled in highly concentrated form is sold at 1/9d. per bottle, and needs diluting with water only.

KEEN, ROBINSON & CO. LTD., CARROW WORKS, NORWICH.



Formula

Intestinal glands	0.05 grms.
Biliary extract	0.10 „
Lactic ferments	0.05 „
Agar-agar	0.05 „
Fiat tablet	0.35 „

Initial Daily Dose
Two Tablets

Laxatives, it is well known nowadays, must have two essential characteristics.

1. They must be biological, i.e., they must accord with and imitate in their action the natural physiological processes of the intestine.
2. They must be capable of educating the intestine, so that the habit of a laxative is not formed and the intestine can function unaided when bowel adjustment is attained.

Taxol has both these advantages.

Taxol has not the violent irritant action of many laxatives and purgatives, but stimulates the intestine by processes which resemble those of nature. The intestinal gland which is an important part of its composition acts on the intestine by reinforcing the deficient function which has culminated in constipation. This stimulating action is gentle, and does not force the weakened intestine to efforts beyond its power, which would culminate in aggravation of the constipation.

Taxol is not habit-forming. It re-educates the intestine to resumption of normal function unaided, thanks to the biological nature of its action. It contains no irritant drug of violent and artificial action to which the intestine can become accustomed. On the contrary, many stubborn cases of constipation, after a course of TAXOL, revert to normal and regular peristalsis.

CONTINENTAL LABORATORIES LTD. 30 MARSHAM STREET, LONDON, S.W.1

RELIGIO-MEDICAL SERIES. No. 138—ROMAN

TRADE MARK 'TABLOID' BRAND

TRADE 'EMPIRIN' MARK

(ACETYLSALICYLIC ACID)

COMPOUND



Reduced facsimile

For prompt analgesic and antipyretic action

Its high standard of therapeutic effectiveness is due to the unvarying purity and precision of the contained ingredients. ('Empirin' Acetylsalicylic Acid is entirely free from deleterious substances)

Disintegration is rapid. There is a marked freedom from tendency to cause cardiac depression

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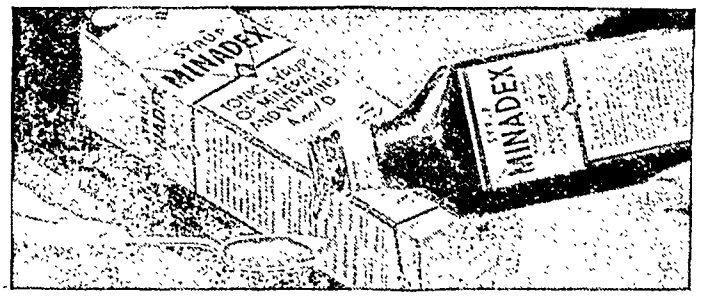
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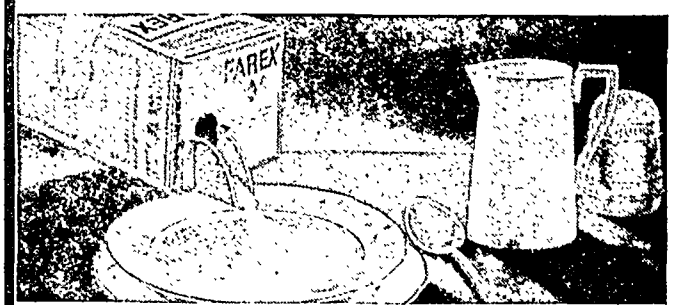


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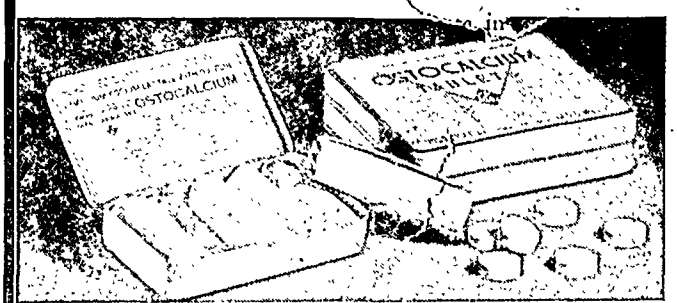
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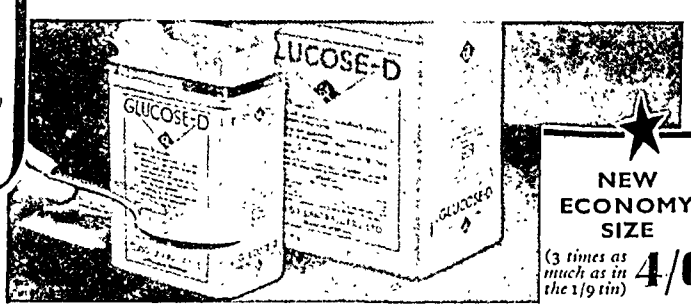
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BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 3 1937

CASE OF CHRONIC MONOCYTIC LEUKAEMIA

BY

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(WITH SPECIAL PLATE)

Although Reschad and Schilling-Torgau first described the condition in 1913, monocytic leukaemia is still a controversial subject, and it is only recently that its existence as a distinct entity has been accepted by most haematologists. It is agreed that these cases should be reported with full haematological and histological data, and the case here put on record has some features not previously described.

Clinical Notes

History.—A woman aged 48 years was admitted to Crumpsall Hospital on January 27, 1937. Three months earlier she had felt pains all over the body, especially in the neck and back, and general malaise. After resting for a month she got up, but had to return to bed as the symptoms continued. During the whole of this time she experienced frequency of micturition and thirst, and during the few weeks before admission had a feeling of heaviness in the left side of the abdomen.

Condition on Admission.—There was no pallor of the skin, but a slight cyanosis was present, and an erythematous rash appeared on the trunk. The mucous membranes were highly coloured, but nothing abnormal was found in the tongue or throat. The spleen was much enlarged, firm, and with sharply notched anterior border. The liver was slightly enlarged. The lymph glands were not palpable. No abnormality was found in the chest or the central nervous system. The urine was normal.

Progress.—Five days after admission a cough developed and catarrhal signs appeared in the chest; these persisted until death. On February 15 the general condition deteriorated and the patient became listless and semi-conscious, but there was no rise of temperature. The symptoms were thought to be due to cerebral thrombosis. Death occurred on February 17 after three weeks in hospital.

A blood count taken on February 2 showed 4,720,000 red cells per c.mm.; 70 per cent. haemoglobin; and a colour index of 0.75. The leucocytes numbered 394,000 per c.mm.: polymorphonuclears 2.5 per cent.; lymphocytes 0.5 per cent.; eosinophils 0.5 per cent.; monocytes 26 per cent.; monoblasts 11.5 per cent.; and primitive cells 59 per cent. The subsequent counts (see Table) showed little change. The Wassermann and van den Bergh reactions were negative, and the red cell fragility was within normal limits.

The monocytes, comprising 96.5 per cent. of the total count, were of three chief types, as stained by Leishman, although a rigid classification is impossible.

Table of Blood Counts

	2/2/37	12/2/37	15/2/37
Red cells per c.mm.	4,720,000	—	4,760,000
Haemoglobin per cent of normal	70.0	—	75.0
Colour index	0.75	—	0 8
Leucocytes per c.mm.	394,000	461,000	341,000
Polymorphs per cent.	2.5	4.0	3.5
Lymphocytes per cent.	0.5	0.25	0 25
Eosinophils per cent.	0 5	1 0	0 25
Basophils per cent.	—	0.25	—
Monocytes per cent.	26 0	19 0	25 0
Monoblasts per cent.	11.5	14 5	9 0
"Primitive cells" per cent.	59 0	61 0	62 0

1. *Monocytes, similar in many respects to the monocytes seen in normal blood, with an average diameter of 14 μ. The nuclei were large, lobulated, and often of unusual shape with slight reticulation. They had a moderate amount of pale blue "ground-glass" cytoplasm with occasional fine azur granules; but granules were not a prominent feature in any of these cells, and the variations in the shape of the nuclei were much greater than those seen in normal monocytes.*

2. *Monoblasts, larger than the monocytes—average diameter 18 μ—with large round or irregular pale-staining ribbed nucleus and generally two nucleoli. The cytoplasm was non-granular, and in some cells was vacuolated. Pseudopodia were seen in a few cells only.*

3. *So-called "primitive cells"—average diameter 9 μ. The nucleus, which was sometimes homogeneous, sometimes slightly ribbed, almost filled the cell, and was not uncommonly divided into two or three parts. The cytoplasm was slightly basophilic and non-granular, and typically formed a narrow rim around the nucleus.*

The oxidase reaction (Graham's method) was negative in each of these three types. Classification may often be difficult or uncertain when a large proportion of primitive cells are present, but on examination of these films it was quite clear that the three types were all of one series. Some of the points above described are shown in the photomicrographs reproduced in the Special Plate.

Post-mortem Examination

Necropsy was performed on February 18, 1937, eighteen hours after death. There was no evidence of external injury and no rash, and no enlargement of axillary, cervical, or inguinal glands. The bone marrow of the middle of the shaft of the femur was pale creamy reddish brown. The heart (227 grammes) was extremely flaccid; the endocardium showed much post-mortem staining; and the heart muscle was greyish brown. The right ventricle was dilated and the wall very thin. There was no valvular disease and no fatty streaking. The lungs contained a few easily broken down pleural adhesions on each side; both lower lobes showed congestion and oedema. The liver (1,843 grammes) was pale and friable. The spleen (*1,531 grammes, length 24 cm.*) was uniform maroon in colour and the capsule thick and wrinkled; Malpighian bodies were not evident. A few slightly enlarged lymph glands were found in the gastro-hepatic omentum. The lymph glands elsewhere in the abdomen were not enlarged. The kidneys were mottled greyish yellow, with thickened capsules, which stripped leaving a finely granular surface. The thyroid (28 grammes) contained an adenomatous nodule three-quarters of an inch in diameter in the left lobe. The brain and cerebral vessels showed no abnormality. There was extensive post-mortem staining in all the body cavities.

Histology

The Bone Marrow (fixed Zenker, stained Leishman).—Fatty areas were present. The blood vessels contained many leucocytes. Erythroblasts were very plentiful and eosinophils fairly plentiful, megalokaryocytes scanty; myelocytes were found in large numbers. The other cells were: (1) Large cells, somewhat irregular in shape, with lobulated vesicular nuclei and cytoplasm which was slightly basophilic without definite granules. These were considered to be monocytes and premonocytes. (2) Small cells with deeply staining nuclei, often in two or three divisions, and a small amount of non-granular cytoplasm. These were undoubtedly "blasts." Both these types of cells corresponded well to the cells seen in the vessels in the marrow and with those seen and described in the blood films. The oxidase stain was positive for the myelocytes and eosinophils, negative for the mononuclear cells and "blasts." The presence of much erythroblastic tissue is unusual in leukaemia, but fits in well with the fact that there was no anaemia and no abnormality of the red cells as seen in blood films. The bone marrow, in fact, showed normal myeloid and erythroblastic activity, together with collections of monocytes and their precursors. A somewhat similar bone-marrow picture has been described by Doan and Wiseman (1934).

Spleen (fixed Zenker; stained Leishman).—The capsule was thickened and there was a thin subcapsular zone of red blood cells; the Malpighian bodies were not discernible. The pulp was very compact, and consisted of red blood cells and masses of mononuclear cells which were similar to those seen in the bone marrow except that cells of Type 2, with a rather darkly staining nucleus, frequently double, were more numerous in the spleen than in the portion of marrow examined. A few of the larger cells (monoblasts) had nucleoli, and mitotic figures were frequent. The cytoplasm of the mononuclears was opaque and entirely non-granular. Nucleated red cells were scanty and polymorphonuclears absent. The arrangement of the monocytes in the spleen was not suggestive of any special origin or method of formation. There was no evidence of desquamating endothelium in the sinuses as described by Clough (1932). The absence of lymphoid tissue and polymorphonuclears is important from the point of diagnosis, and will be discussed later.

Lymph Gland (from the gastro-hepatic omentum).—The normal follicular structure was absent. Lymphocytes were present in small numbers, but the tissue was largely composed of monocytes and monoblasts as seen in the other organs. The cells lining the sinuses were well defined, but there was no evidence of proliferation or desquamation. In general the picture was that of a gland which had been infiltrated by leukaemic cells and the lymphadenoid structure was grossly disturbed.

Liver.—There was pronounced central fatty change and some increase of periportal fibrous tissue. The intercellular capillaries showed a general infiltration of monocytes with denser collections in the portal areas; the capillaries around the central vein were congested. The appearances were those of chronic venous congestion with leukaemic infiltrations of "myeloid" distribution, but not as pronounced as is usual in chronic myeloid leukaemia.

Kidney.—There was a general increase in intertubular connective tissue, with many fibroblasts. A few tubules appeared to be normal, but in most the lining showed varying degrees of degeneration up to complete necrosis and shedding of the epithelium. The glomeruli were less affected, but many showed some capsular thickening, and a few complete obliteration and fibrosis of the tuft. These changes, especially as regards the tubules and intertubular connective tissue, were diffuse and advanced, and were probably the cause of death. In both kidneys there were dense infiltrations of mononuclear cells similar to those found elsewhere. The liver, spleen, and kidney contained no free iron.

Heart Muscle.—No fatty change, but there was slight leukaemic infiltration.

Lungs.—These showed oedema and congestion, with leukaemic cells in the exudates.

Discussion

It is not proposed in this article to survey the literature of monocytic leukaemia; Dameshek (1930) and Clough (1932) reviewed all the cases published up to that time, and Gittins and Hawksley (1933) gave notes on cases reported since Dameshek's paper. To date some thirty reported cases have been published, but only six in this country (Cooke, 1931; Gittins and Hawksley, 1933; Orr, 1933, two cases; Whitby and Christie, 1935; and Israëls, 1937). Most have been acute cases, with symptoms such as stomatitis and haemorrhages, common to all acute leukaemias. In the present case death occurred from nephritis.

Accepting monocytic leukaemia as a separate disease, a chronic form, as with the other leukaemias, might be expected to occur, and the features of this case seem to warrant its recognition as an example of a chronic leukaemia of monocytic type.

The spleen, which weighed 1,531 grammes and was 24 cm. long, was much larger than has been previously described in monocytic leukaemia. Mostly in this disease the spleen is not palpably enlarged, though in a few cases there is moderate enlargement. The size of the spleen in the case here described implies chronicity. The diagnosis rests between three conditions:

1. Chronic lymphatic leukaemia.—The abnormal cells in the blood were not lymphoid as regards either nucleus or cytoplasm. There was no general enlargement of the lymphatic glands, and the lymphoid tissue in the spleen

and lymph glands was not increased, but was decreased in amount and replaced by leukaemic infiltration.

2. Chronic myeloid leukaemia.—This is the condition which presents the most difficulty in differential diagnosis, since it is admitted that the cellular infiltrations in the organs are "myeloid" in distribution and the spleen is similar in size to a chronic myeloid spleen. It has been pointed out also (Gittins and Hawksley, 1933) that monocytes or monocytoid cells may appear in large numbers in the blood during the course of myeloid leukaemia. In the present case, however, the following facts are definitely against a diagnosis of chronic myeloid leukaemia: (*a*) Polymorphonuclears did not account for more than 4 per cent. of the leucocytes in the blood, and no myelocytes or myeloblasts of usual type were seen in a total of 461,000 leucocytes per c.mm. It is difficult to picture a case of myeloid leukaemia with so high a leucocyte count without at least a fair proportion of primitive cells definitely of the granular myeloid series. (*b*) The bone marrow contained normal erythroblastic and myeloblastic elements with an intermingling of mononuclear cells. The picture was not that seen in chronic myeloid leukaemia, in which the erythroblastic elements are crowded out by all types of granulocytes and their precursors. (*c*) The oxidase reaction of the monocytic cells in the blood, bone marrow, and spleen was negative. This is strong evidence against myeloid leukaemia.

3. Chronic monocytic leukaemia.—It is obvious from the literature that many different types of cells have been observed in cases considered to be monocytic leukaemia, ranging from monocytes similar to those found in normal blood to actively phagocytic histiocytes. In this case the monoblasts and monocytes (Types 1 and 2 in the differential blood count) appear to be typical as to size of cell, shape and character of nucleus, and colour and opacity of cytoplasm. Granules, although present in very few of the maturer monocytes, definitely were a rare feature. Some typical monoblasts with mitotic figures were seen in the spleen. The negative oxidase reaction, although valuable evidence against the cells being abnormal myelocytes, does not establish their identity, since monocytes may give a varied result with this method.

The cells classed as "primitive cells," Type 3, are more difficult to place. The absence of nucleoli from most of them, together with the fact that the nucleus was often divided into two or three parts, is quite unlike the picture of either myeloblasts or lymphoblasts; except for the absence of granules they are very similar to cells drawn and described by Doan and Wiseman (1934) as premonocytes in a case of monocytic leukaemia with a long history, ending in death from intercurrent disease. They state that "multinucleated cells are encountered frequently both in the blood and in the tissues in monocytic leukaemia." The name "premonocyte" suggests that they considered them to occupy a position between the monoblast and the mature monocyte. The lack of differentiation, combined with other features, however, leads me to a tentative conclusion that they are more primitive still than the large monoblasts, although of the same series. The supravital staining methods were not used in this case, but it is doubtful, in view of the contradictory findings of different workers (summarized by Hall, 1930), whether they add anything of diagnostic importance to the information obtained from dry smears.

Two features are worthy of special comment. (*a*) The fact that active erythropoiesis was going on in the bone marrow, and the corresponding absence of any anaemia in spite of a leucocytosis of 500,000 per c.mm. A progressive anaemia is almost the rule in leukaemia of this degree. (*b*) The spleen was densely infiltrated with monocytes and primitive cells, the latter being more plentiful than in the bone marrow, suggesting that the monocytes were being produced chiefly in the spleen.

Summary

1. A case of monocytic leukaemia is described, with haematological and histological findings.

2. The disease is rare, and a case with the high leucocyte count here recorded and the greatly enlarged spleen has not previously been reported.

3. It is considered that the case is one of chronic monocytic leukaemia.

I wish to thank Dr. C. S. D. Don, senior visiting physician to Crumpsall Hospital, for permission to publish this case, and Dr. G. D. Dawson and Dr. M. C. G. Israëls for helpful criticism.

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VESICAL EXTROVERSION WITH CONTROL OF MICTURITION

BY

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(WITH SPECIAL PLATE)

The two cases of extroversion of the bladder recorded in this paper are worthy of attention in that they show the value of as complete a clinical examination in this type of case as is possible. For this purpose an anaesthetic should be given, and this has the additional advantage of allowing an artist to draw what is seen, at his leisure, and under the guidance of the surgeon. The cases also show that an operation directed towards closure of the bladder may, under the conditions which are to be noted, be of great value in leading to voluntary control of micturition, with as little disturbance of the parts as is possible. The main importance of the cases is that there was a normal proximal urethra developed in association with an extroversion of the bladder. This possibility is not generally recognized, but it is so important that no excuse need be offered for its early mention. For a very long time I have suspected that even in cases of advanced extroversion of the bladder much more of the normal urethra may be developed than authorities have apparently believed. In support of this assertion three cases of mine may be mentioned that seem to prove the occurrence of such a condition. In the absence of the two main cases which form the subject of this paper, the possibility of there being a normal proximal urethra is difficult of demonstration or conception. One of these cases, however, undoubtedly shows the presence of a normal proximal urethra. Two illustrations are here shown (Special Plate, Figs. I and 2) the originals of which are

water-colour pictures executed by Miss M. Barford, sister at Guy's Hospital, and Miss Miall-Smith, formerly house-surgeon at the Victoria Hospital for Children.

Case I

The first case is the more important. A child aged 2 years was sent to me by Dr. G. B. Muriel of Whitehaven, Cumberland. The patient was quite healthy, and mentally most intelligent. I had no hesitation in pronouncing the child to be a boy. An anaesthetic was given and as complete an examination made as was possible. Miss Barford also took the opportunity to make a water-colour drawing of the condition (Fig. 1). This examination was done in July, 1936. At the end of the month the boy developed whooping-cough, and was sent to stay with an aunt who took very great care of him. The opinion as to the sex of the child was confirmed in September by the formation of a painful non-inflammatory swelling in the left groin, and the descent of the left testicle occurred. Later on, when all pain and abdominal swelling had gone, Mr. Bromley confirmed my opinion that the swelling was the left testicle. In October, 1936, an operation was performed by me at the Putney Hospital. The bladder was constructed; complete union of the parts occurred, and the patient gained control of micturition. This control of micturition has persisted, and early in June of this year an aunt who had taken charge of the infant wrote me as follows: "He can hold his water . . . all he complains of is pain in that lump [the descending testicle], otherwise he is fine and never wets his clothes." This good result is in great part due to Mr. Bromley, who very kindly helped me at the operation, and to the medical and nursing staff at Putney, who all showed great interest.

The details of the case are as follows. The mother gave the information that the cord was cut at birth as usual. After admission an examination was carried out under an anaesthetic. Mr. W. M. Dunham, then dresser in the genito-urinary department at Guy's Hospital, helped me, and it is largely due to him that the exact condition of affairs was discovered. There was a distinct extroversion of the wall of the bladder, which was smaller than usual in my experience of these cases (about thirty in number). This was situated in the lower part of the anterior abdominal wall. The extroversion of the bladder was circular and umbilicated, and measured three-quarters of an inch in diameter. The surface was distinctly red, and was clearly that of a mucous membrane. In the perineum there was a similarly coloured groove or gutter, which passed downwards and backwards towards the anus, but did not reach as far. The extroverted bladder was separated from the perineal gutter or groove by a bridge of skin which was not more than a third of an inch wide. The gutter was about an inch long and half an inch wide. It stopped short of the anus by one inch.

Before a further description of the parts is offered it may be pointed out that three common conditions present with ectopia vesicae were evident in this case. There were wide divarication of the two rectus muscles of the abdomen in the lower half, wide divarication of the pubic bones, and a general raising up of the bladder, perineum, and anus towards the head of the patient. I had often before noted this last point, and the first two observations are well known and constant in cases of extroversion of the bladder and so-called epispadias. There was a large ventral hernia, and at the upper part of this and situated slightly to the right of the midline appeared the remains of the umbilical cord, quite normal in appearance save that the navel was slightly stretched by the hernial protrusion.

The important fact of this case was found in the perineal gutter. There was a small protuberance on each side of the perineal gutter which extended downwards and inwards towards the midline. Each protuberance was not unlike a penis on a very diminutive scale, and I did not doubt that it was an incomplete phallic eminence which had remained bifid. In the perineal gutter were five orifices; the first and most important was median and single, and lay in front of the others. On Mr. Dunham's suggestion I passed a probe through this orifice, and another through the bladder opening, and the probes touched each other, making a metallic click.

After twenty years of some experience of these cases a normal proximal urethra was recognized by me as associated with an extroversion of the bladder. Behind this opening were two paired holes, one of each pair by the side of the midline and close to it. The two posterior orifices were oval, an eighth of an inch long and a sixteenth of an inch broad. The two anterior orifices were of similar size and shape. It was found that the two posterior orifices were only divided by a bridle-like structure, and opened into a single cavity. This cavity passed upwards for about an inch. The two orifices in front of them opened into distinct cavities which passed upwards and backwards. None of these holes appeared to make any connexion with the bladder, and though they are probably of very great interest, further discussion as to their nature would be out of place here. It is with the anterior orifice that we are concerned. For although it was incomplete it was a true urethra, and for this reason the capability of controlling the act of micturition might exist. Up to now I think the possibility of such a condition being present has hardly received the attention it deserves. It was not an easy procedure to introduce a probe through the orifice into the bladder, but I am quite sure that no structure was perforated and that the difficulty was caused in fact by a slight curve in the passage and perhaps by folds of mucous membrane. It is solely because of the presence of this passage that I have been tempted to place the case on record. But this case is not, I am disposed to think, the only one it has fallen to my lot to see and observe partially. But before describing the second case I may say that in one case of extroversion of the bladder and in two cases of so-called epispadias there has been some evidence, as proved by dissection or by the pointing of a stone in the perineum of a case of extroversion, that more of the proximal urethra may have been developed than was obvious at a superficial examination.

Case II

This child was born in the Guy's district at the end of 1917. The birth was normal and the cord was cut in the usual manner. The diagnosis, in which I shared, was that the baby was a female. She was christened Frances, and in this connexion it may be noted that the names of Cecil and Evelyn are also useful for these babies of doubtful sex rather than the unequivocal Peter or Margaret.

As soon as the baby was weaned it was transferred to the Victoria Hospital for Children. Miss Miall-Smith not only took trouble about making a water-colour sketch of the anatomy but was also most assiduous in looking after the case before, during, and after the operation. The first operation, undertaken in the first three months of life, was a complete failure, but a second was a complete success, and this was carried out in the next three months, when the parts had resumed their former

condition. A small orifice was left in the wound deliberately, for the purpose of allowing urine to drain away from the bladder. At the end of 1918, when the baby was about a year old, he was admitted to a London infirmary suffering from bronchopneumonia. I wrote personally to the superintendent telling him of the importance of the case, and he was kind enough to reply, stating that an occasional drop of urine was discoverable at the orifice of a small fistula in the wound. The baby died from the pneumonia; but I was not informed of this, so was not present at any further examination. I saw the mother afterwards and she informed me that she thought the young infant had gained some control over the flow of urine; this remark supports what was said by the medical superintendent at the infirmary. It may therefore be claimed that there had been control gained to some extent though the baby was only 14 months old when death occurred. In view of Case I, recorded above, I cannot help but think that the control in this second case came through a normal proximal urethra being present, and that the fistula left at the second operation may have been closing up at the time of death. The anatomical condition as studied clinically was as follows. The infant was well developed and not at all fretful, and soon took well to hospital life. The condition found is well shown in the illustration (Fig. 2, Special Plate). There was a large extroversion of the bladder, measuring two inches laterally and one and a half inches from above downwards. Both ureteric orifices were visible on the surface of the protruded bladder. Below the level of the bladder was a bridge of skin which passed across the middle line and connected the two sides of the abdomen. Below this bridge of skin there was what may be called a perineum. At the front part of this was a circular hole, which was situated upon the summit of a distinct though small protuberance.

At about the level of this protuberance and orifice and on each side of the midline was a symmetrical body exactly similar to a small penis. This projected inwards and downwards, and was about half an inch in length. The tips of these paired bodies were separated by a distance of half an inch. Behind and below these prominences there was a bilateral swelling, conical in shape and also directed inwards and downwards. These eminences were yellow in colour; they did not project so far inwards as the previous ones, and were three-quarters of an inch from each other. Behind them, but in the middle line, was the anus, which was normal. Some years after seeing and operating upon this case I came to the tardy but inevitable conclusion that the child was a male. The anterior projections were parts of a bifid penis, and the eminences behind these were undeveloped but distinct parts of the scrotum.

Now in view of the previous case I am drawn to the conclusion that the orifice mentioned as lying in the midline was really a partially developed urethra. I cannot help but think that after the second operation the baby passed water through this orifice, for we know from the infirmary report that only an occasional drop of urine was found at the site of the small fistula that had been left at the operation.

S. G. Shattock laid it down, when at the Royal College of Surgeons, that hypospadias could not occur with an extroversion of the bladder. I have a series of photographs of a male foetus which was born dead. It had a large extroversion of the bladder on the surface of which the bowel opened. In this case, however, there was a definite penis with a fully formed scrotum, and also a prepuce, and on the under surface of the glans penis was an opening which led backwards along the normal course of the urethra. In fact, it appeared to be a normal urethra. This passage did not, however, make a connexion with the bladder, but passed directly into the vesiculae seminales, as shown by Dr. G. W. Nicholson. The case is most interesting, but need not detain us now; we must be careful, however, in accepting as true a statement made even by such an authority as the late Professor Shattock.

It is sufficient here to state that in two cases of extroversion of the bladder proximal urethras were present which were capable of controlling micturition.

For the true nature of this incompletely developed urethra I must refer to other articles I have written on this subject.

The Operation on Case I

Thanks to the assistance of Mr. Bromley and my former house-surgeon, Mr. John Rowlands, the operation was quite quickly performed. After an anaesthetic had been given and continued the extroverted bladder was pushed back into the abdomen, and an incision was carried round the mucosa, of which a good edge was exposed. Catgut sutures were used to join the edges transversely. The circular incision around the mucous membrane was extended on each side transversely, for about three-quarters of an inch. The skin edges were everted widely, and a broadish linear area of subcutaneous tissue was thus exposed. Lembert catgut sutures were applied to this surface on each side of the long axis of the wound, drawn together and tied, and then cut short. Thus the bladder was buried deeply with a good covering of subcutaneous tissue. The skin edges were then united with fine salmon-gut sutures. A collodion dressing was applied and the patient was sent back to bed. Instructions were given that when he had recovered from the anaesthetic he was to be allowed to do as he wanted, and was to be permitted to walk about the ward if he wished. I very greatly object to having these babies tied down in bed. These conditions are not natural ones, and the crying induced by the confinement does a great deal of harm. As there was no catheter in the bladder natural conditions were called for. The patient at once was able to hold his water, according to Mr. Rowlands; and continued to do so except when he wished to micturate, at which time he passed urine in a good stream. This happy result continues, and naturally the parents are delighted. The salmon-gut sutures were removed about the tenth day. The normal proximal urethra is performing its duty of controlling micturition.

Very much the same operation was performed on Case II (the first in point of time). As I have said already, the first operation was a failure, the second was a success.

Commentary

The important point which I have tried to bring out in this paper is that whilst there was in both cases a well-marked extroversion of the bladder, there was in one certainly, and in the other probably, a proximal urethra capable of controlling the flow of urine. In such cases construction of the bladder as a hollow cavity may be the operation of choice rather than the more severe and much more difficult operations of uniting the urinary and alimentary tracts, with which the names of Stiles, Nitch, and Grey Turner are so honourably associated in Great Britain. I should like to add a personal point. It is curious that at the end of eighteen years a second case should explain the anatomy and surgery of a prior one.

TUBO-UTERINE IMPLANTATION FOR STERILITY

FOLLOWED BY FULL-TERM PREGNANCY

BY

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(WITH SPECIAL PLATE)

The first tubal implantation resulting in full-term pregnancy was reported by Shaw and Cullen in 1921. The second recorded was by Unterberger in 1925. Von Graff in 1936 published the results of the seventy tubo-uterine implantations reported in the literature. Of these twenty-six were followed by pregnancy; only twenty-three, however, went to full term, one ended prematurely, one terminated in abortion, and one was an ectopic gestation—that is, an incidence of pregnancy amounting to 32.9 per cent.

Greenhill (1937), in order to determine the sentiment of American gynaecologists concerning salpingostomy and tubal implantation for sterility, sent a questionary to members of the American Gynecological and Obstetrical Society and the American Association of Obstetricians, Gynaecologists, and Abdominal Surgeons. One hundred and seven replies were received.

Fifty-three of the specialists had never performed a salpingostomy. Eighty-eight had never considered tubal implantation as an operation worth performing for the purpose of overcoming sterility.

On the other hand, thirty-five were strongly in favour of plastic operations upon the tubes, believing that the misery associated with sterility justifies the technique, however meticulous, however disappointing. Their results worked out at one pregnancy for every fifteen operations, and one full-term living child for every twenty-two abdominal sections.

The same atmosphere of pessimism is found in this country. For instance, Beckwith Whitehouse in the fourth edition (1935) of Eden and Lockyer writes: "The technique requires considerable skill and the operation is not lightly to be undertaken. The method is as yet too recent and the published records of success too few to express a considered opinion as to its ultimate value." Later, however, he states that he has had one successful case.

Similarly at the sixth British Congress of Obstetricians and Gynaecologists, 1936, after a stimulating paper on the subject by Bethel Solomons (1936), the majority of those present expressed the opinion that the abdomen should not as a rule be opened directly for the purpose of operating on the Fallopian tubes. On the other hand, a minority following the dictum of Harvey "to seek out and study the secrets of Nature by way of experiment" thought that all cases of tubal sterility should be carefully investigated with reference to previous history, menstruation, etc., and emphasized the necessity of methods of precision being first used to determine the site of obstruction, by far the most scientific being that of hysterosalpingography. They were of the opinion that if the case were suitable a plastic operation was worth while, no matter what part of the tube was involved.

Solomons stated that he had sent a questionary to 150 world-known gynaecologists. Fifty-three replies were received from those who operated upon the tubes. The answers showed that the incidence of pregnancy, after salpingostomy alone, averaged from 8 to 10 per cent., though the figures of Rubin, Norris, Blair-Bell, and Gellhorn were very considerably better. After tubal implantation only six full-term live children were reported. In two cases abortion occurred.

It is significant that only thirteen out of the fifty-three surgeons who answered the questionary stated that they tested the patency of the tubes after operation. This is the acid test of any technique employed, and if not applied in every case as a routine measure, it were perhaps better not to operate at all. For my own part I believe the best test from both the physical and the psychological point of view is the salpingogram, which cannot lie and which should be taken two weeks, ten weeks, and twenty weeks after whatever operation has been performed. Using the Seguy apparatus (Drapier et Cie), put on the English market by Allen and Hanburys, radiographs can be taken without pain or anaesthetic, although if need be they can be done under morphine or evipan.

It is possible that a careful choice of cases and improved technique will yield in the future a larger incidence of success to those who are willing to operate; for, provided there is no complete occlusion of the Fallopian tubes by gonorrhoeal, post-abortal, puerperal, or tuberculous infection and the semen of the husband is normal, there is no contraindication. Moreover, it must be realized that when the history and clinical findings are assured we have in salpingography a method which enables us to determine the site of occlusion and thereby base the strategy and tactics of any proposed procedure.

Operative Methods

Hitherto many surgeons have followed the technique of Douay (1936), Seguy, and Blair-Bell (1934)—that is, after applying a myomectomy clamp the cornu of the uterus comprising the interstitial portion of the tube is resected. The end of each tube having been bifurcated, it is then threaded with silkworm-gut and drawn within the uterine cavity and sewn *in situ* with fine catgut as in Fig. A.

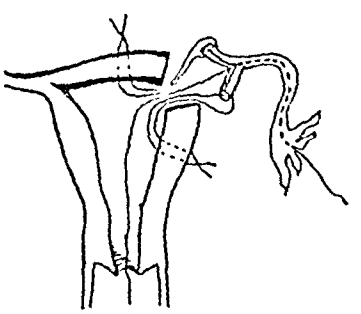


FIG. A.—After wedge resection of the cornu and resection of the occluded isthmial part of the tube, it is bifurcated, threaded with gut, and drawn into the lumen of the uterus. It is then lightly sutured *in situ*.

Great care is taken, when the cut cornual surfaces are joined, that there is no strangulation of the implanted tube. A week later the silkworm-gut is removed. The tubes are tested with air or lipiodol from time to time.

Others have adopted the method of Solomons—that is, the uterus is first bisected. After excising the occluded area the distal and patent part of the tube is threaded with catgut. The cornu of the uterus is shaved to expose the line of the interstitial part of the tube, which is then expanded sufficiently with dilators to draw the threaded tubes into the lumen of the uterine cavity; fine anchoring sutures are then applied through the bisected uterus to keep the implanted tubes in place.

The technique of Bonney (1936) is the simplest. After applying his myomectomy clamp and ring forceps to the infundibulo-pelvic ligaments, he splits transversely the fundus of the uterus from cornu to cornu until the cavity of the uterus is opened. The occluded isthmial part of the tubes having been excised, a strand of silkworm-gut is threaded along each tube from the outer to the inner end. The tube ends are now laid carefully in the line of the transverse fundal incision so that the free amputated ends of the tubes are projecting actually into the cavity of the uterus. The long ends of the silkworm-gut are passed through the eye of a special dilator and drawn into the vagina after releasing the clamp. The tubes are fixed *in situ* by interrupted sutures of fine catgut, and as an additional safeguard a few sutures are inserted through the muscle of the tubes to the outer part of the cornual incision on each side. The silkworm-gut is removed about the tenth day. Mr. Bonney (1937) has had 18 per cent. of successes from salpingostomy, and has recorded five pregnancies following double and single implantation of the tubes with or without simultaneous salpingostomy. His results are inspiring and dispel pessimism.

It is proposed to describe a modification of this technique which has recently resulted in a full-term pregnancy.

Illustrative Case

Mrs. D., aged 25, married two years, was admitted with a history of four miscarriages to the West London Hospital on March 4, 1933, for retention of urine and intractable vomiting. The uterus was twelve weeks pregnant, retroverted, incarcerated, and fixed. Endeavour was made under an anaesthetic to replace it on two consecutive days, with failure on both occasions. The abdomen was therefore opened. It was seen that the fundus was fixed by dense adhesions to the posterior parietes, presumably subsequent to one or other of the four previous miscarriages. A modified Gilliam operation was performed. She went to full term, and as she had a typical funnel-shaped pelvis, demonstrated by measurements and radiographs, a lower-segment Caesarean section was performed on November 22, 1933.

Seeing that she had had four miscarriages and already two abdominal operations (one previous to admission for appendicitis), she and her husband demanded that she should be sterilized. Against strong advice this was insisted upon. Sterilization by excision of the cornual portions of the tubes was performed. Three days later the infant died, and was found at necropsy to have congenital heart disease (patent foramen ovale) and atelectasis.

In August, 1935, being very miserable, she came to the out-patient department asking if she could have another baby. Rather diffidently I informed her of such a possibility if she would submit to the operation of tubo-uterine implantation. Fig. 1 (see Plate) shows the uterus before operation. On October 20, 1935, with the following modifications, the Bonney technique was used. (Fig. 2 shows the result six months after operation.)

The Modified Bonney Technique

First a twelve-inch-long probe is passed eye forwards from the vagina through the cervix up to the top of the fundus uteri. It is then clamped *in situ* by a vulsellum on the cervix. On opening the abdomen a myomectomy clamp is placed round the cervix, and ring forceps are applied on the infundibulo-pelvic ligaments.

The proximal stenosed ends having been excised, a fine bodkin threaded with a long piece of Japanese silkworm-gut is passed gently through each tube so that about two inches remain visible at the distal end of the tubes, and about fourteen inches are available at the proximal ends to be threaded into the eye of the probe that is now exposed by making a transverse incision across the fundus of the uterus from cornu to cornu.

Each threaded tube with its intact mesentery is now snugly and rapidly placed in the V-shaped groove at each cornu so that about a quarter of an inch of each proximal end projects well into the endometrial cavity. Having lightly anchored the muscle wall of the tube with fine catgut at each cornu, the free long ends of silkworm-gut are threaded into the eye of the probe which has been referred to. The clamp being relaxed, the vulsellum on the cervix is released by an assistant and the probe slowly withdrawn, carrying with it the two lengths of gut. These are sutured to each side of the vaginal outlet at the end of the operation. The clamp and ring forceps being removed, the fundal incision is then closed with deep and superficial catgut as in a Caesarean section, particular attention being taken of the cornual portions, lest any undue compression of the buried though threaded tubes occurs. The technique with perfect haemostasis is not difficult, and can be completed under the hour.

The silkworm-gut is withdrawn in the ward on the twelfth day. The advantage of Japanese silkworm-gut is that it softens and it does not disintegrate or irritate.

On September 8, 1936, Mrs. D. reported that she had missed two periods. Examination showed that she was pregnant. She was carefully watched during the antenatal period. Six weeks before she was due she was admitted for observation and rest, lest labour should come on prematurely or the fundal scar give. *X*-ray photographs showed at first a breech; after two weeks spontaneous version occurred. On April 7, 1937, a classical Caesarean section was performed. A healthy child weighing 5 lb. 10 oz. was delivered. There were a good many adhesions of omentum to the top of the uterus where the fundal incision had been made. These were not interfered with. The implanted tubes measured only two inches in length. No sterilization was done. The postnatal period was afebrile and uneventful. She left hospital on the twenty-eighth day, the baby weighing 6 lb.

Commentary

The case is reported in order to stimulate others to undertake plastic operations upon the tubes. Hitherto my personal success with salpingostomies has been four living children, the fruit of twenty-five laparotomies. Tubo-uterine implantation has been done thrice with one success.

The modified technique described is not difficult. The complete haemostasis obtained with clamp and ring forceps makes technical tactics easy.

Hitherto many gynaecologists have considered that operation is hardly worth while unless the Fallopian tubes are only occluded at the fimbrial ends; but when one considers how very miserable the sterile woman often is it does seem proper in a suitable case to give her the option of surgery provided some portion of the tube or tubes is patent, for, in the words of Bethel Solomons, "just as an occasional good golf shot impels the worst player to persist with the game, so occasional success in plastic surgery of the Fallopian tubes will impel the gynaecologist to continue his efforts and improve his technique, thereby achieving better results."

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GAUCHER'S DISEASE OF THE LUNGS

BY

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(WITH SPECIAL PLATE)

Gaucher's disease is comparatively rare, and affection of the lungs by it still more rare. So far I have not been able to find records of a case in this country similar to the one I am describing. Gaucher's disease has been described as a non-hereditary, congenital, familial disease due to changed lipoid metabolism, which produces an abnormal substance called kerasin. More cases occur in females than in males. It is believed that certain cells of the reticulo-endothelial system store the kerasin to form what are called typical Gaucher cells. These cells are chiefly found in the spleen, liver, lymph glands, and bone marrow.

This affection is recognized clinically by the distinct enlargement of the spleen and liver, the pinguecula-like thickenings of the conjunctivae, a light yellowish-brown pigmentation of the skin and sclera, various changes in the bones, leucopenia, thrombocytopenia, and the haemorrhagic diathesis. Sometimes the lymph glands are enlarged. Ascites is only occasionally seen. The pain experienced over the bones particularly is that of a dull ache, but the pain over the spleen and liver, and I believe also in the lungs, is apt to be sharper. The disease may be encountered at any time from birth to about middle age.

Diagnosis is made from the symptoms described above, but especially from the peculiar tint of the skin, splenomegaly, and usually hepatomegaly without ascites, flask-like expansion of the lower ends of the femora accompanied by dull ache or even sharp pain, a raised temperature, leucopenia, and hypochromic anaemia, and is clinched, if necessary, by a splenic puncture and the finding of Gaucher cells, or by finding these cells after biopsy of a gland.

Sobotka and others (1933) state: "At least three pathological entities of generalized 'lipoid storage' disease or lipoidosis have been distinguished from clinical and pathological evidence and confirmed by chemical investigations: (1) Gaucher's splenomegaly, characterized by large deposits of a cerebroside; kerasin, in spleen and liver; (2) Niemann-Pick's disease, in which the phosphatide and cholesterol contents of the viscera, the bone marrow, and the brain are increased at the expense of neutral fat; (3) Schüller-Christian's disease, with replacement of the bone tissue by cholesterol deposits."

Case History

A little girl aged 2 years and 7 months was admitted to the Royal Waterloo Hospital on September 16, 1931, on account of a distinctly enlarged abdomen, and general weakness and illness. Upon examination it was found that she was small for her age and appeared to be very ill indeed. There was a slight icteric tint of the skin generally, which also affected the conjunctivae to some extent. The abdominal prominence was due to a greatly enlarged spleen, which reached to the pubes and just to the right of the middle line. Its texture was moderately firm and smooth. The liver was enlarged two fingerbreadths. There had been three attacks of epistaxis during the past few months, the last, a month previously, having been quite severe. The coagulation time of the blood was normal; the bleeding-time a little prolonged—6 minutes. The red blood corpuscles were 800,000 per c.mm. on admission and the haemoglobin 19 per cent., but this was reduced to 16 per cent. two days later. The white blood corpuscles numbered 3,100. The Wassermann reaction was negative, and the fragility test normal. The van den Bergh test, both direct and indirect, was negative. The urine was normal. Examination of the stools showed a very slight excess of split fat (fatty acid), but no unsplit fat. No undigested muscle or starch was seen.

The child evidently had had an enlarged abdomen since the early months of life and attended many clinics, etc., and had been apparently regarded as a rare case of rickets. However, no sign of the latter was evident when the child was admitted to hospital. The general appearance, the spleen, the leucopenia, the epistaxis, and anaemia seemed to fit in with the diagnosis of Gaucher's disease, which was made tentatively. It was intended to do a splenic puncture and settle the diagnosis by a microscopical examination of the cells, but on account of the child's desperate condition it was decided not to; consequently, two days after admission, as a possible chance of saving her life, I asked my colleague, Mr. Rodney Maingot, to perform splenectomy. This was done on September 19, 1931. The spleen weighed 39 oz., and both Dr. Knott and Professor Kettle found typical Gaucher cells present. No similar case had occurred in the family.

Contrary to expectation the little patient made a perfect recovery, and within three to four months the blood count was practically normal.

During April, 1932, she was readmitted to hospital with great pain at the lower end of the right femur. The condition was diagnosed as osteomyelitis, and Mr. St. John Buxton operated and found greyish-green pus from which a few colonies of *Staphylococcus albus* were grown. Gaucher cells were present in the bony canals of necrosed bone taken away at the operation. Looking back on this case, I am not sure if it was not the ordinary invasion by Gaucher cells which occurs in some of the bones in Gaucher's disease and not osteomyelitis.

During the next two years the patient complained of pain in the back, which was found by *x*-ray examination to be accompanied by gradual atrophy of the bodies of some six or seven dorsal vertebrae, and was obviously due to the Gaucher process. Mr. St. John Buxton undertook to treat the condition.

The following year there was a certain amount of enlargement of the glands in the neck and groin; and pain with a moderately high temperature appeared suddenly, accompanying enlargement of the lower end of the left femur. *X*-ray examination showed the condition to be typical of Gaucher's disease. No operation was done; the temperature and pain gradually disappeared, but the flask-like expanded appearance of the lower end of the left femur remained (as had happened to the right femur).

In August, 1935, the child was again admitted into hospital with what at first sight seemed to be whooping-cough; but on going into the history thoroughly, and taking into consideration the peculiar nature of the cough, the condition appeared to be produced by pressure on the bronchi. Great pain was present behind the sternum, especially the lower end, for which small doses of morphine alone gave relief. The temperature was moderately high, and the respirations and pulse increased in frequency. Careful examination revealed some dullness below the left clavicle and gave the signs of what appeared to be lobar pneumonia. The severe substernal pain gradually disappeared after about a fortnight. Fresh areas of dullness were noted in various parts of the lungs, and the sputum was fairly copious. During this time and the next year the sputum was examined about twenty times for Gaucher cells, but the result was always negative. A number of *x*-ray examinations, made at first fortnightly and afterwards monthly, showed a gradually increasing process spreading from the mediastinum towards each axillary region, the dullness becoming more and more marked. The area of bronchial breathing below the left clavicle persisted, and similar areas gradually became manifest over various parts of the front and back of the lungs. Many medium moist rales were heard, and these persisted. Last November a sudden great pain was felt by the child in the

right axillary region, and very definite signs of pleurisy were found there.

The blood count in August, 1935, when the child was 6½ years old, was: red cells, 5,200,000; haemoglobin, 87 per cent.; colour index, 0.82; white cells, 73,600; polymorphonuclears, 65 per cent.; lymphocytes, 27 per cent. In making the differential count the pathologist stated that many dead or basket cells were found. The platelets were fairly numerous.

The pulmonary process was certainly different from anything I had seen in a child before, and as Gaucher's disease was present in other parts of the reticulo-endothelial system the pulmonary condition was looked upon as being probably due to the same affection.

During 1935 and 1936 the liver became greatly enlarged and reached nearly to the pubes, also extending beyond the umbilicus into the left hypochondriac region. The child's growth was certainly being interfered with by the faulty fatty metabolism present. She was distinctly smaller and much lighter in weight than her sister, who was two years younger. During 1936 various nervous manifestations became evident; she would become irritable without cause, and developed movements of the eyes, mouth, nose, face, and neck, often for only a few days at a time, but they never entirely disappeared.

Death took place on January 15, 1937, and as a partial necropsy was allowed the diagnosis of Gaucher's disease was verified. I append reports.

Pathological Report

The following are the necropsy findings reported by Dr. F. A. Knott:

The body showed considerable wasting and, for the child's age, underdevelopment of the muscles and bony skeleton. The dorsal vertebrae were markedly arched forward owing to the collapse of some of their bodies. The abdomen was very protuberant because of the greatly enlarged liver. There were no bruises or pigmentation, and no oedema.

On opening the abdomen the most striking feature was an enormously enlarged liver, which weighed 3 lb. 7 oz. Its surface was smooth, and the enlargement occurred equally throughout all the lobes. The gall-bladder and biliary tracts were normal. The liver had a pale pink colour as a whole, with irregular patches of dull yellow. It had formed no adhesions.

The intestines showed no abnormality, and the kidneys and genito-urinary tract appeared normal, but there was considerable enlargement of practically all the abdominal glands, this being more marked in the upper than in the lower abdomen.

When the thorax was opened the heart and great vessels were found to be normal, except that they were variously displaced through enlargement of the mediastinal glands, the enlargement continuing into the root of each lung. The pulmonary appearances are described below. There were no pleural effusions or adhesions. The thymus, thyroid, larynx, and pharynx were normal; the brain was not examined.

The spleen had already been removed about five and a half years previously, and at that time weighed 2 lb. 7 oz. Its general and histological appearances had been reported as typical of a Gaucher spleen.

Specimens for section were taken from the liver, from glands in various parts of the body where noticeable enlargement had occurred, from a rib, a part of the sternum, the root of a lung, a small solidified area in the lung, the kidney, the pancreas, and heart muscle.

Large masses of Gaucher cells were found in every instance of glandular enlargement, and in all the samples of bone marrow examined; the kidney, pancreas, and heart muscle were free. In the liver enormous collections of these cells appeared, pushing aside the normal liver tissue, which on the whole had undergone little degeneration. In sharp contrast, owing to its location inside the bones, the bone marrow was very largely compressed and displaced, and the total functioning marrow must have been much below normal. The changes in the bodies of the vertebrae were due to Gaucher deposition and pressure damage.

In short, the characteristic appearances were that at all possible sites reticulo-endothelial deposition of Gaucher substance had taken place with compression and displacement of neighbouring cells, but without producing further damage than would arise from compression.

The immediate cause of death was to be found in a simple terminal, mainly basal, bronchopneumonia; but the findings in the lungs had an interest beyond this, because they had clearly been involved in the primary Gaucher disease before the final infection took place.

COMMENTARY ON THE FINDINGS

This case illustrates particularly well the reasons for classifying Gaucher's disease among the reticulo-endothelioses. Not only were the liver, spleen, larger lymph glands, and the bone marrow packed with large masses of typical cells containing the non-doubly refractive Gaucher substance, but collections of these cells could be seen wherever lymph nodes occurred.

This process was found to account for the early physical signs noted in the patient's chest long before there was any indication of bronchopneumonia. At the post-mortem examination the mediastinal and hilum glands were all grossly enlarged and contained masses of Gaucher cells, with the result that the roots of both lungs were apparently extensively "invaded" by the disease, as seen by the increased root shadows in the radiographs and by the physical signs.

But another feature was noticeable, particularly in the upper lobes. In many of the small subserous and interlobular lymph nodes the reticulo-endothelial cells were loaded with Gaucher substance, producing a series of small apparently solidified areas, the neighbouring air spaces being markedly compressed. In between the compressed areas the lung tissue was relatively normal, the only change being the very recent terminal, mainly basal, bronchopneumonia. There was no evidence of old or recent tubercle, and the changes first noted clinically in the lungs were undoubtedly due to deposition of the Gaucher material, even in such outlying portions of the reticulo-endothelial system as the distal lymphatic system of the lungs.

Review of the Literature

Although, as I have stated, I have not succeeded in finding records of a case of Gaucher's disease affecting the lungs in England, one has been published in France by Merklen, Waitz, and Warter (1933) on the "maladie de Gaucher," in which typical Gaucher cells were found in the sputum. They state: "L'expectoration permanente pendant plusieurs mois de crachets muqueux, l'abondance de cellules constituant parfois des amas considérables, la proportion notable et constante de cellules de Gaucher typiques nous permettant de décrire une forme pulmonaire

de la maladie de Gaucher." The above was a typical case of Gaucher's disease affecting the spleen, liver, femora, and the vertebral column. Epistaxis occurred; the patient was 51 years of age; and anaemia was present along with leucopenia.

Although we repeatedly examined the sputum of our own patient, we never discovered Gaucher cells in it; still, the case quoted above shows that such can occur, and they therefore should be looked for.

I would like to refer here to "Studies on the Chemistry of Gaucher's Disease: An Analysis of Three Spleens," by R. H. S. Thompson and G. Payling Wright (1937). They state "that the essential pathological change is a specific storage of kerasin. Concerning the origin of this kerasin or its mode of accumulation in the reticulo-endothelial cells throughout the body nothing at present is known, but two hypotheses may be suggested for the aetiology of the condition. In the first place the distended 'Gaucher cells' may be merely the result of an absorptive action of the histiocytes on an increased blood kerasin." They continue: "An alternative theory, based on the assumption that the galactolipins are possible important intermediaries in the antibody responses of the reticulo-endothelial system, suggests itself as the result of recent work on certain aspects of immunological chemistry." They state, further: "In view of this work, therefore, it is conceivable that the galactolipins, whose physiological role in the body is at present unknown, may play a part in the production of antibodies by the reticulo-endothelial cells, and that Gaucher's disease may be some 'inborn error of metabolism' of the mechanism responsible for some stage in the antibody production of the body, whereby excessive quantities of kerasin are synthesized and stored by the reticulo-endothelial cells."

Summary

A case of typical Gaucher's disease in a little girl is described in which the spleen, liver, both femora, some of the dorsal vertebrae, lymph glands, and the lungs were affected.

The affection of the lungs by this disease must be extremely rare, for the only other definite case so far noted is quoted in the French literature.

The most recent views on the pathological chemistry of Gaucher's disease are stated.

In the Special Plate photomicrographs are reproduced of sections of the liver (Fig. 1), a lymphatic gland (Fig. 2), the bone marrow of a rib (Fig. 3), the spleen (Fig. 4), and the lung (Fig. 5). Fig 6 is a reproduction of a radiograph taken four months before death and showing clearly the extension of the Gaucher process from the mediastinum outwards and to the apices. Ludwig Pick (1933) states that in fresh specimens the Gaucher cells are homogeneous, opaque, and dull hyaline in appearance. With the Mallory stain, with acid-fuchsine, and aniline-blue-orange G, and with previous fixation with picric acid and ammonium bichromate, they appear a light blue, and under higher magnification show, in their cytoplasm, an irregular network, bound like spider webs with the finest thread-like fibrils. Through these the cytoplasm appears wrinkled rather than foamy or roundly vacuolated. The wrinkles correspond to the remains of the spongioplasm in the meshes of which the Gaucher substance is stored. Large cells with this type of cytoplasm are found in no other affection. The cells measure from 20 to 80 μ in their largest diameter; they are polymorphous, and are often furnished with projections. The nuclei are either single or multiple, and not infrequently are quite numerous (there were twenty-one in one cell). They are mostly pyknotic. In those cells where there is a single nucleus it is often eccentric in position, generally near the cell border. Mitoses are disputed. Pick found arterial branches within the nests of Gaucher cells.

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TEMPORARY POSTPONEMENT OF MENSTRUATION BY OESTRADIOL BENZOATE

BY

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(WITH SPECIAL PLATE)

There are occasions when a temporary postponement of menstruation would be a great advantage. I refer to such times as athletic championships, examinations, and weddings, when a condition of bodily comfort and peace of mind is essential, and this cannot be if these events coincide with menstruation. In such cases I suggest that the delay of menstrual bleeding for a few days or a week is a justifiable therapeutic measure on a few special occasions of a woman's life; but I do not think it is a practice to be carried out more than once or twice during an individual lifetime, as it may be unwise to upset the normal delicate pituitary-ovarian rhythm too frequently.

The idea of such therapy arose from the treatment of some of a series of cases with oestradiol benzoate.* It was found that if injections were carried out through the whole cycle the next bleeding was delayed or even inhibited. In some cases of oligomenorrhoea and hypomenorrhoea treatment was sometimes followed by a short period of amenorrhoea. In such cases bleeding might be delayed if injections of 10,000 I.B.U. were repeated, whereas in patients with normal loss this occurred if dosage was raised to 50,000 I.B.U. This is explained by Zuckerman's work (1936) on the production of uterine bleeding by oestrin withdrawal. Cyclical treatment of cases of oligomenorrhoea was not followed by amenorrhoea when 50,000 I.B.U. were given only in the first fifteen days of the cycle.

Zuckerman (1936), working with monkeys, showed definitely that if oestrone is given for a period of fifteen days in a dosage known to be adequate for proliferation, and is then withdrawn, bleeding will occur about seven to eight days later. If this threshold dose is continued throughout the cycle bleeding is postponed for as long as the dose is kept above threshold. If allowed to drop below, either by reducing dosage or by increasing the interval between injections, bleeding would occur. Zuckerman (1936) suggested that if superthreshold doses were given throughout the cycle ovulation was inhibited and the proliferation phase was continued. If injections were started after the middle of the cycle following ovulation it was doubtful whether oestrone would then inhibit bleeding. Evidence was inconclusive on this point even from Zondek's series (1936). If given after the middle of the cycle it was necessary to use much larger doses to cause inhibition. B. Zondek (1936), in the series referred to, noticed that during therapeutic enlargement of hypoplastic uteri of sterile women the next bleeding was often delayed if moderate doses were continued through the

* Oestradiol is six times as physiologically active as oestrone. The standardized preparation used in this work was progynon B oleosum—Schering.

cycle. When started in the first half of the cycle the stage of proliferation is continued, if dosage is greater than threshold value, into one of endometrial hyperplasia and ovulation is inhibited, so that bleeding takes place after oestrin withdrawal from a proliferative phase and not from the usual secretory or premenstrual endometrium. This may be due to inhibition of the anterior pituitary. There is some evidence that even after the corpus luteum is atrophied bleeding does not occur until after withdrawal of oestradiol. Now is it possible to use these facts and theories to delay normal menstruation for social reasons, and is it likely to do any harm? To be a practical success it is a disadvantage for injections to be given every three days throughout the cycle. It is simple to postpone menstruation if 50,000 I.B.U. are given in this way, but injections of 10,000 I.B.U. are not certain in their results, as demonstrated by Cases I and II.

Case I

This woman, aged 22 and married, whose menstrual history was regular every twenty-seven to thirty days, was treated with oestradiol benzoate for intrinsic dysmenorrhoea. First injections of 10,000 I.B.U. given every four days throughout the cycle failed to inhibit bleeding. Following this menstruation the dose was increased to 50,000 I.B.U. throughout the cycle every four days at first, then towards the end of the cycle injections were given on alternate days over a total period of thirty-five days. Seven days after withdrawal bleeding started.

The necessity for injections being nearer together and of large dosage if treatment is started after the fourteenth day was demonstrated in this same case, in which failure occurred in a later attempt when injections were spread out too much.

The irregularity of the menstrual cycles in this case following experimental delay of bleeding was due to treatment for dysmenorrhoea being continued. Trials were given to progesterone at the end of the cycle just prior to menstrual flow, and also to oestradiol benzoate in the second half of the cycle, the details of which are irrelevant and therefore not published in this paper.

Case II

This patient, an unmarried woman aged 22, was treated for intrinsic dysmenorrhoea, and the menstrual history was regular, 4-5/28. The menstrual flow ceased the day before treatment was started. Injections of 50,000 I.B.U. were given twice weekly for thirty-four days and then bleeding started two days later and lasted ten days. The effect was temporary only, and subsequent menstruation was normal.

For practical purposes it is desirable to give injections in the second half of the cycle only, when Zuckerman (1936) was doubtful as to its success owing to the previous occurrence of ovulation. However, I have succeeded in postponing menstrual bleeding for some days after starting injections on the nineteenth day after the cessation of the last bleeding, which was proved by curettage to be from a secretory-phase endometrium. In this case dosage was 100,000 I.B.U., given on alternate days. This is necessary to maintain a high concentration of oestradiol benzoate, which has been shown by Mazer and Israel (1937) to fall four days after an injection. It is therefore necessary to give a large dose and to give it on alternate days. Some idea of the dose which should be necessary can be gauged from the usual menstrual loss expressed in number of diapers and number of days of bleeding. The threshold dose is probably greater in patients with more copious loss.

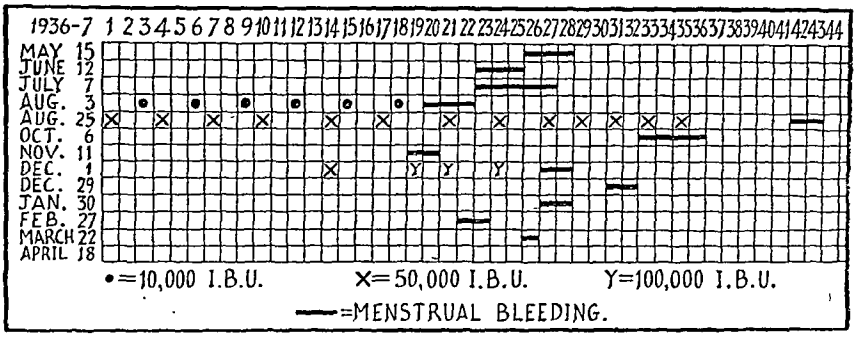


CHART 1.—Menstrual Record of Case I.

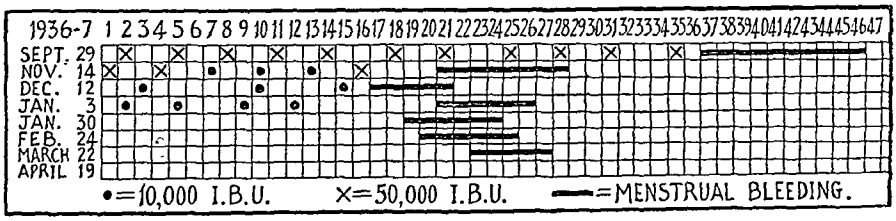


CHART 2.—Menstrual Record of Case II.

Case III

This patient, an unmarried woman aged 32, had been treated for irregular menstruation for seven months with oestradiol benzoate. Her usual cycle varied between twenty-eight and thirty-five days, and when she came for treatment this had lengthened. I selected this case for trial, as menstruation was apparently corrected by treatment and her record of menstrual function was preserved. She was curetted on the first day of bleeding, which was twenty-six days after the last day of the previous menstruation. Ovulation had obviously occurred, as the pathological report showed that she was bleeding from a secretory-phase endometrium. Accordingly nineteen days after this bleeding finished—long after ovulation was thought

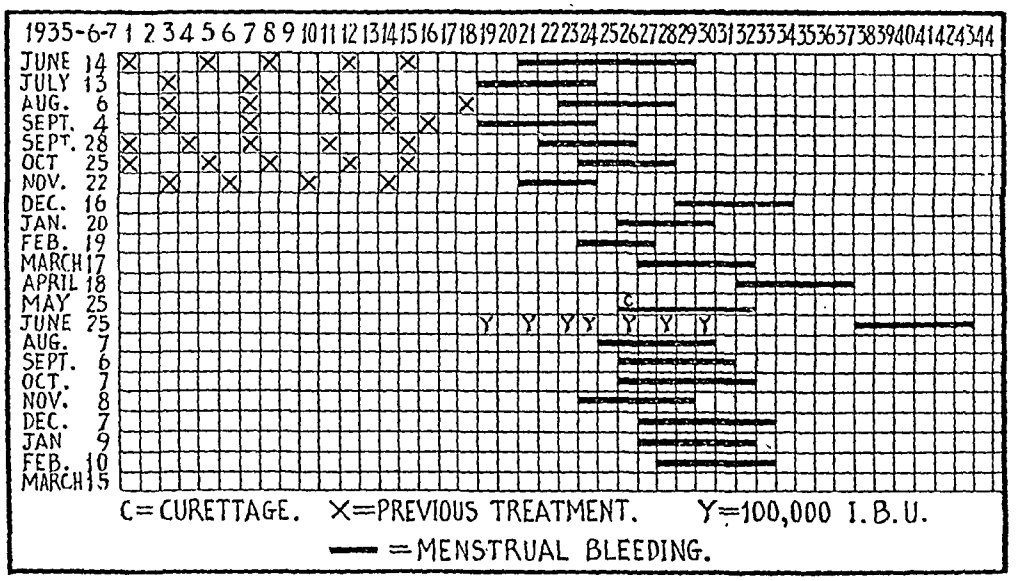


CHART 3.—Menstrual Record of Case III.

to have taken place—I started giving oestradiol benzoate injections. 100,000 I.B.U. were given on alternate days, amounting in twelve days to a total dose of 700,000 I.B.U. Following the withdrawal of oestrin on the thirtieth day of the cycle bleeding occurred eight days later and lasted six days.

This cycle was forty-three days as against thirty days, the average of twenty cycles. It is evident, then, that I succeeded in postponing bleeding for eight days, and treatment had been started at least five days after the probable date of ovulation. No deleterious effect was produced, and it can be seen on referring to the menstrual record that there was no interference with the regularity of the subsequent periods.

The pathologist reported a typical menstrual mucosa with the cytogenic stroma cells showing marked menstrual or decidual reaction (see Plate).

In cases where the menstrual loss is usually slight 50,000 I.B.U. on alternate days, when started after the fourteenth day, is sometimes successful, although it is wiser to give this daily after the first few injections and towards the expected time of onset.

Case IV

An unmarried girl, aged 21 years, previously treated for dysmenorrhoea, was taken for trial, as her menstrual record was particularly regular. This time small dosage was tried, and was again started long after the normal time of ovulation, but in this case I had no record of the endometrium. Injections of 50,000 I.B.U. were begun on the nineteenth day after the cessation of the last bleeding. 200,000 I.B.U. were given in eight days, and this was sufficient to postpone bleeding during the time injections were administered, but it followed two days after the last injection.

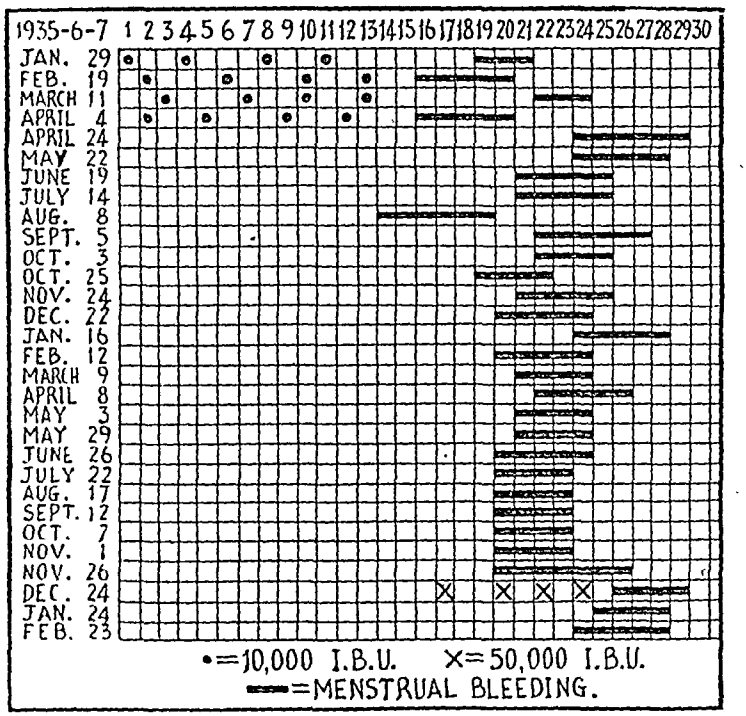


CHART 4.—Menstrual Record of Case IV.

Commentary

Zondek (1936) says that no ill effect was found in his cases, and so far no harmful effects have resulted in any of my series. Occasionally, as in Case I, the subsequent menstruation also is delayed, but usually the normal rhythm returns at once. An occasional postponement of some days does not seem likely to upset the pituitary-ovarian rhythm, as in many people menstruation varies a few days each time. A temporary inhibition of the anterior pituitary by oestrin does not seem deleterious, according to my experience of large doses.

One small point in technique is important. It is essential when injections are given, especially in obese patients, to make certain that there is no leakage from the tissues. The oily solution of oestradiol benzoate should be deeply injected intramuscularly, preferably in the buttock and with the needle in an oblique direction. On withdrawing the needle the skin should be pinched up with the thumb and forefinger of the left hand to approximate firmly the walls of its track. Unless these small points are rigidly observed failures may occur, as there is a tendency for leakage of the oily solution, with consequent drop in dosage. It has the same effect as oestrin withdrawal, or as giving injections at too infrequent intervals, by reducing the level below a threshold value. The essence of this therapy is to maintain a high superthreshold level of oestradiol benzoate until after the time when menstruation is expected.

Summary

1. Postponement of menstruation temporarily is occasionally justifiable.

2. Inhibition of menstruation is simple by continuing therapy with 50,000 I.B.U. throughout the cycle at intervals of three to four days.

3. It is possible to postpone menstruation when injections are started, after ovulation has probably occurred, at about the nineteenth day of the cycle, but dosage must be greater, such as 100,000 I.B.U., and the intervals should be shorter.

4. There are no harmful effects.

5. The technique of injection is of great importance.

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Clinical Memoranda

Schamberg's Disease

(WITH SPECIAL PLATE)

In view of its comparative rarity the following case of Schamberg's disease is worth recording.

A Parsee lady of middle age attended the skin clinic of the J.J. Hospital complaining of a peculiar rash on the legs and forearms of about eight months' duration. Apart from the disfigurement the rash caused, there were no subjective symptoms. Careful inquiry elicited that the rash started in the form of minute puncta of bright red colour on the anterior surfaces of both legs immediately below the knees, and gradually spread downwards, involving the upper two-thirds, and also spread to the forearms. The lesions gradually faded, leaving behind a brownish pigmentation which in its turn slowly disappeared, the skin assuming its normal colour. The complete disappearance of the lesions was seen only on a limited area of the skin. A certain amount of telangiectasis was also noticeable (see Plate).

When the patient first came under my observation the disease was fairly well advanced, and coalescence of individual lesions had occurred, leading to the formation of brownish patches. New lesions were still coming out, and a few bright red pinpoint puncta at a distance from the original eruption were present. Apart from the rash clinical examination revealed no other abnormality. Teeth, tonsils, ear, nose, and throat were normal, and no evidence of septic focus was found anywhere. The platelet count was normal and the Wassermann reaction negative.

Schamberg's disease constitutes one of a group of diseases of unknown aetiology which include Majocchi's disease, purpura annularis telangiectodes, and poikilodermia atrophicans vasculare, and which are provisionally classified by some amongst the purpuras. Histological examination shows the chief seat of the disease to be in the subcapillary layer of the corium, where a mild degree of inflammatory reaction and deposition of a pigment—shown by Kingery to be an iron derivative—are present.

I am indebted to Major S. L. Bhatia, I.M.S., for allowing me facilities for taking photographs of the patient.

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Craniocleidodysostosis in a Boy of 7

(WITH SPECIAL PLATE)

The history of the case is as follows:

The child was a forceps delivery. He had a moderate degree of hydrocephalus with bulging of the anterior fontanelle. Eight days after delivery there were convulsions, which disappeared in a fortnight.

At the time of writing the boy attends school and appears to possess normal mental faculties consistent with his age. His only symptom is fatigue after walking moderate distances.

Examination revealed the following:

Only one and a half inches of the left clavicle was palpable on its medial end. Of the right clavicle I could only palpate about half an inch of its medial end. No portion of the clavicles was palpable laterally. There was an extremely wide range of movement of the shoulders. Both shoulders could be made to touch anteriorly in the midline. A definite depression about the size of a shilling could be felt in the region of the anterior fontanelle. The base of this depression did not yield to the palpating finger. There were no other abnormalities elsewhere.

X-ray examination revealed a thin cranial vault and displayed a definite depression in the region of the anterior fontanelle. At the base of this depression there was an extremely thin layer of bone. The clavicles appeared as two rudimentary medial ends which were extremely small in proportion to the chest wall.

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A Case of Calcinosis

(WITH SPECIAL PLATE)

The following report of a case of calcinosis circumscripta may be of interest.

A girl aged 13 years first came under notice on January 27, 1936, and was found to have a fluctuating swelling about the size of a pigeon's egg on the upper and outer side of the right small toe, with the tract of a sinus opening on the sole of the foot and discharging a creamy, chalky-looking substance. Nodules were found on many of the digital joints of both hands, left elbow, and left knee (see Fig. 1, Special Plate), also on the points of some of the fingers. Her family history revealed nothing of interest. There was no tuberculosis, rheumatism, or gouty tendencies, and no history of a similar condition in other members of the family or relatives or friends.

Apart from a minor degree of anaemia and debility her health had been fairly good. She had had a lump, possibly a sebaceous cyst, removed from the scalp in 1933, and a swelling at a finger-joint the same year. This had been incised and the contents expressed. Similar swellings had made their appearance about this time, involving the joints now affected. The swelling on the foot was incised twice, and once the chalky contents were cleared out the wounds healed rapidly, leaving little scarring and no impairment of the joints. The contents of a nodule excised from the left elbow and examined microscopically appeared similar to those of a sebaceous cyst, but the chemical analysis showed a high calcium content. A sebaceous cyst excised from another patient contained no calcium. *X*-ray examination showed dense shadows at the site of the nodules (see Fig. 2)—particularly in the right foot, in both hands, and in the left knee—typical of the condition described as calcinosis circumscripta by Dr. D. W. Brooks in the *Quarterly Journal of Medicine*, July, 1934.

A. J. CLEVELAND.
A. P. AGNEW.

Norwich.

Fatal Coronary Thrombosis in a Man Aged 23

(WITH SPECIAL PLATE)

The following case is worthy of record owing to the youth of the patient.

A Tamil manual labourer, while on his way to work at about 7 a.m. on January 4, 1937, complained of severe pain in the chest and left arm, and collapsed. He was attended to at a dispensary and brought to the General Hospital, Colombo. When seen at the out-patients department at 8 a.m. he had pain in the left shoulder and arm, but the symptoms of collapse had passed off. He was admitted under my care, and reached the ward in a moribund condition, with cold, clammy extremities and imperceptible pulse. He died at 8.25 a.m.

No history of previous rheumatic fever or heart disease could be obtained. A diagnosis of coronary thrombosis was suggested, and a post-mortem examination was made by the Judicial Medical Officer of Colombo, Dr. N. Sinnadurai, who has supplied me with the enclosed photograph and the following note on the appearance of the heart.

"The left ventricle showed globular dilatation. The valves were intact and the musculature appeared healthy to the naked eye. In the beginning of the descending branch of the left coronary artery of the heart there was an ante-mortem thrombus about a quarter of an inch long, attached to the wall of the vessel. The distal portions of the vessel below the thrombus showed whitish atheromatous plaques. There were similar plaques also in the right coronary artery. Death was due to coronary thrombosis."

In 1935 a case of coronary thrombosis with recovery in a patient aged 24 years was reported from the wards of the late Dr. E. Garvin Mack by Dr. P. B. Fernando, medical registrar of the General Hospital, and an account of it was given in this *Journal* (1935, **1**, 976). The present case, as far as I am aware, is the youngest on record, since this patient was born on January 3, 1914, and was therefore 23 years and 1 day old at the time of his death.

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An Obscure Case of B. Coli Peritonitis

This case, that of a girl aged 5 years, one of female twins, first came under notice at 8 p.m. on October 1, 1936. The history was as follows:

CASE HISTORY

The child complained of abdominal pain while out walking the previous day, about midday, and vomited. She was taken home and put to bed, and her condition improved, although slight pain in the region of the umbilicus persisted. She vomited a second time after an evening meal of bread-and-milk. The temperature was taken by the mother, an ex-surgical sister of a London teaching hospital, and was found to be normal. The child had an undisturbed night and slept well. The next day she seemed fairly well but still complained of slight abdominal pain, and the mother administered a dose of castor oil, resulting in an offensive yellow fluid stool. The pain persisted, and although the temperature remained normal it was decided to have medical advice. On cross-examination of the mother it was elicited that the child had been passing offensive stools for some days, and that for the past year or two the breath had on occasions been offensive. There was no history of worms, and the patient had previously been perfectly healthy. On examination the temperature was found to be 98.4° F.; the pulse was 120. The child was pale but bright and composed. There was slight rigidity of the right side of the abdomen and a little tenderness in the right iliac fossa. The tongue was furred.

The patient was removed to the Chesham Cottage Hospital, and after consultation it was decided to perform appendicectomy. The abdomen was opened by a muscle-splitting technique. The appendix when exposed to view showed only a slight thickening of the tip and a little injection of the superficial capillaries. There was no exudate and no sign of peritonitis. The appendix was removed and the stump invaginated in the routine manner. The abdomen was closed without drainage. On opening the appendix it was found to contain numerous threadworms and a little offensive pus; there were also a number of submucosal haemorrhages. The child did well for a week following the operation, but occasionally complained of a little pain in the region of the wound. She continued to pass very offensive pale yellow fluid stools.

About six o'clock, however, on October 8 she complained of severe generalized abdominal pain. The temperature rose to 101° F., and the pulse to 130. On examination there was general rigidity of the abdominal wall and tenderness, which appeared to be most severe over the descending colon. The operation wound was clean and healing normally. A blood count showed 15,000 leucocytes, of which 89 per cent. were polymorphonuclear leucocytes. It was decided to reopen the abdomen, and this was done through a right paramedian incision. The small intestine and omentum were found to be intensely injected, and about an ounce and a half of thin greenish-yellow odourless pus was evacuated. There was no evidence whatever of any infection from the site of the appendix operation, and the wound was soundly healed. No perforation of the intestines was discovered. A specimen of the pus was obtained and the abdomen was closed; two drainage tubes were inserted into the lower part of the wound reaching well down into the pelvis. The child has since made an uneventful recovery, and there has been no trace of threadworms in any of the stools, which have ceased to be offensive. The pus obtained from the abdomen grew a pure culture of *B. coli*. Agglutinations of serum against typhoid and paratyphoid A and B were negative.

DISCUSSION

The case would appear to present one or two unusual features. In the first place the mother, a woman of considerable nursing experience, was positive that the child had never passed any threadworms, and quite certainly no threadworms were passed in hospital. Secondly, it seems difficult to account for the presence of sufficient numbers of *B. coli* in the peritoneal cavity to cause a general peritonitis a full week after the removal of the appendix. If the peritoneum had become contaminated during the first operation, which seems very unlikely, it is hard to imagine why the onset of the peritonitis was delayed. As previously stated, there was no evidence at the second operation of the trouble arising from a leakage from the appendix stump.

It is well known that in children pneumococcal peritonitis may develop as a secondary manifestation to pneumonia complicated by empyema, and streptococcal septicaemia may be complicated by acute peritonitis, the infection being conveyed by the blood stream. In this case of diffuse *B. coli* peritonitis no precise focus of infection could be found surgically, but it is established that the child was passing extremely offensive stools prior to the development of peritonitis, and it is probably correct to conclude that (1) an intense *B. coli* infection was present in the colon, and (2) that a secondary *B. coli* peritonitis supervened, either via the blood stream or else by direct permeation through the walls of the colon.

H. T. S. WISE, M.R.C.S., L.R.C.P.
W. B. GABRIEL, F.R.C.S.

Reviews

CALMETTE'S BOOK ON TUBERCULOSIS

L'Infection Bacillaire et la Tuberculose chez l'Homme et chez les Animaux. By A. Calmette. Fourth edition, revised by A. Boquet and L. Nègre. (Pp. 1,025; 70 figures, 24 coloured plates. Broché, 150 fr.; cartonné toile, 175 fr.) Paris: Masson et Cie. 1936.

Though first published as recently as 1920, Calmette's monumental book can be termed a classic in tuberculosis literature. A second edition appeared in 1922, followed by a third in 1928, and an English translation of the former was published in 1923. The last nine years have witnessed much work and controversy on certain pathological aspects of tuberculosis; the fourth edition, just issued, is therefore timely. The death of Calmette in 1932 left the task of revision to be done by Boquet and Nègre, heads of departments in the Pasteur Institute and collaborators of Calmette in the previous edition. It was inevitable that the wish to retain the spirit of the original author and the structure laid down by him should have induced Boquet and Nègre to avoid making drastic changes, changes that would have greatly increased the value of the book. This applies particularly to views held by Calmette in the face of much opposition. Thus the section on B.C.G. vaccination is hardly altered; too little note is taken of the work criticizing the method, and the lack of thorough revision is seen in the following:

"In July, 1921, a first infant fatally destined to tuberculous infection by reason of its inevitable cohabitation with a phthisical grandmother, ingested three doses, on the third, fifth, and seventh day after birth, of 2 mg. of B.C.G. each time (totalling 6 mg., or 240 million bacilli). No untoward incident followed. This child, though brought up in an infected environment, has developed normally. *It is now five and a half years old* [reviewer's italics] and remains in perfect health."

On the other hand, it is good to note the more cautious attitude adopted in regard to the filterable form of the tubercle virus. In fact, the term "ultravirus" no longer appears in the index. Special chapters of this edition are devoted to culture on sympathetic media, to dissociation, to the avian type of the bacillus, to spontaneous tuberculosis in rabbits and guinea-pigs; and some chapters are much fuller—for instance, that dealing with the chemical constitution of the bacillus. The book contains an enormous amount of information, and the best parts are those concerned with purely bacteriological aspects. The section on morbid anatomy, as in the third edition, is sketchy, and in it is ignored the most recent work of German authors, work that has thrown much light on the evolution of pulmonary tuberculosis. Indeed, in the whole book there is too great a tendency to favour French authors, even when their work has not withstood criticism from elsewhere.

Many hundreds of references are given; nevertheless statements are often made without mentioning their source. Thus we should be interested to know when "in London G. Lissant Cox and A. Salusbury MacNalty of the Ministry of Health have found, in one dispensary alone, a mortality of 22 per cent." (0 to 1 year—in children born of tuberculous mothers, remaining in contact with the mothers, under the supervision of health visitors). The usefulness of the book is, moreover, much diminished by the absence of an index of personal names.

The controversy round B.C.G. and the "ultravirus" should not make us forget the excellent work done by Calmette on other aspects of tuberculosis; and the book can therefore be recommended to those who will be able to separate the wheat from the chaff.

NATIONAL INTELLIGENCE

The Fight for our National Intelligence. By Raymond B. Cattell, M.A., B.Sc., Ph.D. With introductions by Lord Horder, Major Darwin, and F. P. Armitage. (Pp. 166. 8s. 6d. net.) London: P. S. King and Son. 1937.

Population, physique, intelligence, character, present four of the major problems of Western civilization which are at last beginning to attract national attention in this country. They are not really separable problems, but parts of one whole; each calls for a good deal of attention to the others. Yet a full study of that whole, however enhanced in value by its comprehensiveness, is still awaited and is bound to be bulky, and any serious consideration of one of its parts can meanwhile be welcomed. Such consideration of the subject of national intelligence is contained in a portion—far too small a portion—of Dr. Raymond Cattell's book. It is a serious study in that it describes a painstaking psychological and statistical investigation of intelligence in a limited population in definite areas, alleged to be typical. It has the merit, too, of not ignoring altogether, as some inquiries have done, the question of population decline and of character as distinguished from intelligence. But, as the author himself points out, the inquiry depended upon "the unaided efforts of a single investigator," and was "limited to a total expenditure of £250." Under these conditions testing was confined to 10-year-old children only, and these in but 3,734 families. Controls were lacking. Doubtless it was not possible to do much more, but these are very meagre materials on which to base the dogmatic and far-reaching conclusions to which the investigator invites us. There is another inquiry now proceeding of a not dissimilar character, but with ampler means and of a more comprehensive and scientific nature, and it would be wise to suspend judgement at least until the results of this are published.

The very title of the book suggests a bias. There are no fewer than five introductions, including the author's own "foreword" and his first chapter entitled "The Twilight of Western Civilization?" Lord Horder's introduction is commendatory but careful. "Assuming no fallacies to be present," he says, "the evidence seems overwhelming." Yet he speaks of Dr. Cattell's "discovery" and strains credulity when he claims that "careful perusal of the conditions of the research and of the argument does not reveal any obvious fallacy in either." Major Leonard Darwin begins with an absurdity—"It has been conclusively proved by many inquiries that for many years past the average child has been living in a worse home than the average parent"—and continues with a clear *non sequitur* in the majority of his paragraphs. Mr. F. P. Armitage assumes as postulates statements clamouring for discussion; and the author himself discloses a tendency to find only what he sought, and to square conclusions with his preconceptions. But if the book be read throughout in a cautious and alertly critical spirit much of it will be of value. Its facts are helpful, though by no means conclusive. Its arguments are well stated, though often specious. Its inference that our national intelligence has, since about 1875, been rapidly decreasing through a differential birth rate, whereas up to that time it had been increasing through a differential death rate, is not established. The remedies suggested for such decline as there may be are perhaps more moderately stated than would

gical remedy, if Dr. Cattell's statements are accepted face value, would be the compulsory sterilization whole of the "subcultural" or "social problem" in which he sometimes seems to include most of mentary school children; whereas he would rely upon universal knowledge and practice of birth . He is wise enough, however, in addition, to e the positive and active encouragement of mater- nong those of higher intelligence to the extent of s of three or four children, and to urge that psycho- as well as economic means should be used to l.

Cattell points out that "no service is done by ating or indulging in the prophecies of a scare- ." It seems inconsistent to follow this with the n that "through a *complete* practice of birth , extending to the lowermost sections of the popula- ankind could leave behind for ever, within the f this century, the aimless suffering, the vacillating e, and chronic relapses which have characterized ion since the culture of Sumeria first blossomed."

HAEMODYNAMICS

ology and Pathology of the Heart and Blood ls. By John Plesch, M.D., L.R.C.P. & S.Ed. (Pp. 15 figures. 15s. net.) London: H. Milford, Oxford ersity Press. 1937.

nn Plesch, author of this work on the heart and vessels, dedicated to his friend Albert Einstein, is ed as professor of internal medicine in the Univer- Berlin without any qualifications such as emeritus rmerly." He has written much, and the present , which is described as a development of his *dynamische Studien*, published in 1909, is divided o almost equal parts—on the physiological and gical aspects—being intended for practitioners as for physiologists. It illustrates the importance value of the application of the ancillary sciences, instance haemodynamics, to medicine. But for inary medical man "the fundamental mathematical ae" to which he is at once introduced in the first may present a somewhat formidable proposition. wever this may be, a diagram explaining the venous es in different positions—the erect and recumbent s—clearly illustrates in the same chapter the l remarks on the avoidance of air-embolism in the of intracranial operations.

blood volume and the less-known distribution of n the various vascular areas are passed in review. ttention is paid to the capillary circulation. Very t estimates of the absolute capillary blood volume en given: the author arrives at this figure by sub- from the total blood volume of four and a half he estimated capacity of the remainder of the ascular system. The flow of blood through the ies is "turbulent," the particles pursuing an r path without any fixed relation to the axis of eam and in contrast to a "laminary" flow. The of open capillaries is regulated by the metabolic of the tissues; thus in toxic goitre the raised lic rate dilates the blood capillaries so as to the diastolic pressure 15 to 25 mm. Hg below its level. The problems of blood pressure receive nsideration, and it is suggested that general atten- as not been directed to the characteristic rise of c pressure in hypertension due to renal disease. loubt is expressed about the site of the responsible the kidneys rather than in the general periphery.

In the section on chronic diastolic insufficiency or "decompensation" it is pointed out that the term cardiac decompensation is not infrequently applied to cases in which the responsible factor is not in the heart. Although the author insists that the common disorders of the circulation can be explained on a mechanical basis without reference to lesions of the cardiac valves, he devotes the last chapter to a critical analysis of the orthodox views of valvular disease. This is an authoritative and thought-stimulating book by one who has devoted much time and thought to the subject.

EPIDEMIOLOGICAL STUDIES

Seuchenentstehung und Klimaforschung, and *Die Entstehungsursachen der Haffkrankheit.* By Dr. med. Friedrich Wolter. (RM. 3.75 and RM. 4.50.) Stuttgart: Hippokrates Verlag. 1936.

Dr. F. Wolter, director of the Hamburg Institute for the Study of Epidemiology, in two recent brochures, volumes 5 and 7 of the series Kleine Hippokrates-Bücherei, continues his travels along paths first broken by Pettenkofer. In volume 5 he seeks to bring epidemiological happenings into relation with the long- and short-waved climatological movements postulated by Brückner. As will be remembered, the late Sir William Hamer was an enthusiastic student of Brückner cycles, and there is no reason to doubt that work in this field is of importance. At its present stage the papers seem rather suggestive than convincing—perhaps because the workers are few and precise numerical data scanty.

Volume 7 deals with a more sharply defined problem—namely, the nature and origin of the remarkable epidemics christened *Haffkrankheit*, which mainly affected fishermen on the Frisches Haff, a narrow gulf communicating with the Baltic and in the neighbourhood of the cities of Königsberg and Danzig; in 1924 there were 600 cases with six deaths, in 1925, 176 with five deaths. The symptomatology of the illness closely resembles that of the better-known epidemic myalgia, but the general opinion in Germany has been that the origin was a form of fish poisoning. Dr. Wolter, however, identifies the new epidemics with an outbreak of 1529 in the Gulf of Stettin, and, as the Frisches Haff is heavily polluted by sewage and factory outflows, finds a basis for subsoil action. His arguments may not be wholly convincing, but the facts cited are suggestive.

THE CLINICAL PSYCHOLOGY OF CHILDREN

Clinical Psychology. A Handbook of Children's Behavior Problems. By C. M. Louttit. (Pp. 695; illustrated. 12s. 6d. net.) New York and London: Harper and Brothers. 1936.

When the author of this book was obliged some years ago to plan a teaching course in what is called clinical psychology he found its scope difficult to define. Clinical psychologists deal with all kinds of activities from the devising of mental tests to deep analysis, with patients of all ages, with problems of child training, delinquency, mental deficiency, mental disease, vocational guidance, and a hundred others. He found no single book which gave a systematic survey of the whole subject. Books which purported to deal with psychology in general were deeply tainted with bias, and none gave an adequate idea of the vast field of specialized books and papers that now exists. He has therefore tried to meet this need, and he has very fairly succeeded—surprisingly, considering the handy size of his book.

He begins by suggesting practical methods for history-taking, examination, and psychometry, and then deals in the remaining three parts of the book with three broad classes of problems: those correlated with abilities and with organic disabilities, and problems of behaviour. One important consideration which governs his approach is that clinical psychology goes far beyond psychology as a science, and the work of the clinical psychologist is intimately bound up also with medicine, education, and sociology; he deplores the absence of any academic curriculum which gives the student a grounding in even the broad essentials of these sciences. He confines the book to the problems of children, because he regards the psychology of the child as the very foundation of adult psychology and the reactions of the child as the foundation of adult behaviour. Although he has been severely restricted in his compass he boldly introduces concrete examples on every page, and the student will probably learn as much from this book as from any other single work that has appeared recently.

Notes on Books

Quelques Verités Premières (Ou Soi-Disant Telles) en Pneumologie Clinique, by Professor EMILE SERGENT (Masson, 24 fr.), is one of a series on various branches of medicine and surgery published under the general editorship of Professors Ombrédanne and Fiessinger of Paris. The intriguing title which, except for the name of the branch discussed, is common to the whole series is explained in the preface written by the editors. Their aim is to give the readers the essential clinical and therapeutic facts which can *at present* be considered as definitely established. Their choice of Professor Sergent for the volume on diseases of the lungs was a happy one. The result is a collection of statements, aphorisms, and counsels based on extensive clinical experience from which the human element is never dissociated, which is written in a style that attracts the reader and emphasizes where emphasis is needed. The following is a good example: "Though the first impression is *often* the best, it is unreasonable to bow down before the aphorism which insists that it should *always* be the best." There is, however, a fly in the ointment. The book is very attractively produced, but the type appears to have been chosen without any regard to reading comfort. The text is wholly in italics, ordinary type being used for certain terms and for emphasis; and even this is carried out somewhat at haphazard.

In the biography entitled *The Life and Convictions of William Sydney Thayer, Physician* (Oxford University Press, 10s. 6d.), Mrs. EDITH GITTINGS REID, the author of a life of Sir William Osler, has given a sympathetic account of Osler's successor in the chair of medicine at Johns Hopkins University, with numerous extracts from his diaries and correspondence. In addition to relating his activities at Johns Hopkins, where his principal contributions to medicine dealt with malaria, typhoid, and bacterial endocarditis, Mrs. Reid gives a vivid account of his experiences and hairbreadth escapes as a member of the Red Cross Mission to Russia in 1917 and as a consultant in the following year to the American Expeditionary Force in France. Thayer was well known in this country, where he was made orator and gold medallist at the Bright Centenary celebration, Foreign Honorary Fellow of the Association of Physicians, and LL.D. of the University of Edinburgh. In France he delivered an address at the Sorbonne in 1923 on "The Contribution of Pasteur to Medicine," and was elected on that occasion Officer of the Legion of Honour and four years later Commander. He was also Laennec Lecturer and Doctor *honoris causa* of the University of Paris and co-editor of the *Archives des Maladies du Cœur*. The text is accompanied by striking portraits of Thayer as professor, military consultant, and amateur fisherman.

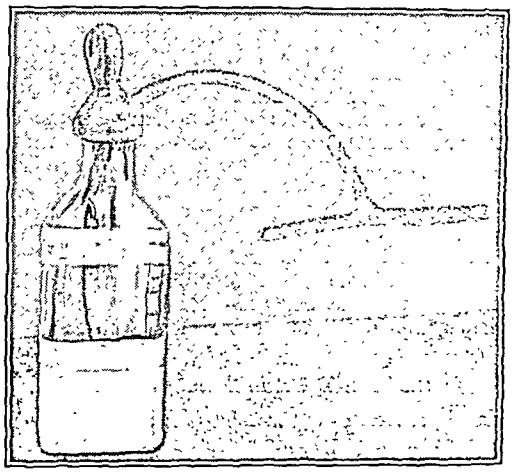
Those who wish to keep abreast with current medical literature will be interested to know that this can be obtained from a new publication, *Current Titles from Biological Journals*, edited by L. R. KUHN of the University of Chicago. It is issued monthly, and can be obtained on application to 5603, Drexel Avenue, Chicago, Illinois, the subscription being 1.50 dollars for the remaining months of 1937. This monthly reproduces the main contents of many of the principal biological journals of the world, and medical periodicals are well represented.

Preparations and Appliances

CONTINUOUS BILIARY DRAINAGE

Mr. MALCOLM H. V. CAMERON, F.A.C.S., F.R.C.S.Can., writes from Toronto:

One of the minor difficulties of biliary drainage by means of the T-tube is in the management of the bottle used to collect the bile. A long tube to a container outside the bed hampers the patient's movement, and an open bottle attached to the abdominal binder may easily be spilled, or if used by an



ambulatory patient can only be handled with considerable inconvenience. A stoppered bottle cannot be employed, as the drainage must not be opposed by pressure greater than that of the atmosphere. For the past five years I have overcome these difficulties with the simple apparatus illustrated herewith. An ordinary flat dispensing bottle of three- or four-ounce capacity is provided with a sling made of adhesive plaster folded on itself for about three inches at the top and applied along one side, the bottom, and part of the other side of the bottle. This may be pinned to the binder in the case of a patient in bed, or attached to a bandage about the neck if he be up and about. To prevent side-sway the binder is turned up to as to form a pocket in which the lower end of the bottle rests. A nursery feeding nipple is stretched over the neck of the bottle, and the external arm of the T-tube is brought through it by way of a small lateral slit which forms a watertight junction. The tiny hole at the apex of the nipple permits equalization of pressure, and should the bottle be accidentally inverted allows only a drop or two of bile to escape. Soiling of clothing or bedding is prevented, and the patient is free to assume any comfortable posture in bed, or while sitting or walking. Emptying and cleaning the bottle does not disturb the dressings or incommode the patient.

AN ESTIMATE OF THE INCIDENCE OF DEFECTIVE HEARING IN ENGLAND AND WALES

WITH SPECIAL REFERENCE TO A DEAF PERSONS ACT

BY

ARTHUR G. WELLS, B.S., M.B., D.P.H., F.R.C.S.

It is, I think, commonly agreed among those interested in the problems of the so-called "deaf" that so far insufficient attention has been paid to this unfortunate class of sufferers by the State, and that justice will not have been done until at least equal consideration and provision has been made for them as for their fellow sufferers—the "blind."

Efforts there have been to put forward a Deaf Persons Bill, and a considerable amount of support has been promised by individual Members of Parliament, but it would appear that the Minister is unwilling to do anything in the matter unless the idea has the backing of local authorities. While, however, local authorities accepted one clause in the Bill—namely, the lowering of the school age for the deaf—they could not see their way to support the Bill as a whole.

As I understand it, their main reason was the unknown magnitude of the problem. They had no idea of the numbers involved and consequently of the nature of the cost, and without this knowledge, which has never been forthcoming, they refused their support. In order to give some idea of the size of the problem I have endeavoured to make an estimate, from the results of my own experience and the available data to hand, of the probable numbers who would come within the scope of a Deaf Persons Act, and, secondly, of the approximate number of people with defective hearing in England and Wales. While it would be quite impossible to make any accurate statement or estimate of the numbers in each of these groups one might reasonably estimate a maximum within which they would fall, and this I attempt to do in this paper.

Grades of Defect in School Children

For the purposes of my examinations of school children with defective hearing I divide them into Grades I, II, and III, and Grade II is subdivided into Grade IIa and IIb.

Grade I.—This grade covers children who can hear and understand the conversational voice at twenty feet or over in ordinary class-room conditions. Their hearing loss by the gramophone audiometer test is up to about 15 decibels, and with the pure-tone audiometer 35 decibels. They can benefit by education in an ordinary elementary school. This grade includes also some children with greater hearing loss but whose speech and language development is good and who lip-read well.

Grade II.—These children hear and understand the ordinary conversational voice at between 20 ft. and 2 ft. Their hearing loss with the gramophone audiometer test is between 15 and 40 decibels, and with the pure-tone audiometer between 35 and 60 decibels. By reason of their defect they cannot be properly educated without special arrangements or educational facilities. This group is subdivided into Grade IIa and IIb. Those children coming under Grade IIa can be educated in the ordinary school if special facilities are provided, such as a favourable position in the class, etc. Those in Grade IIb require special school education, but not that necessary with the severely deaf. In this grade also come those children whose hearing defect is worse than that described above but whose speech and language are not seriously affected.

Grade III.—Children in this grade can hear and understand the conversational voice at not more than 2 feet if at all, though they may be able to hear vowels with or without discrimination at greater distances than 2 feet. Their hearing loss by gramophone audiometer test is 40 decibels, and it is over 60 decibels with the pure-tone audiometer. Their speech and language are seriously defective, and they require methods of teaching applicable to deaf children who have not acquired speech and language naturally. This grade does not include any children whose speech and language development is not seriously defective.

It is clear that the persons who would fall within the scope of a Deaf Persons Act would be those who would come under the hearing qualifications of Grade IIb and Grade III.

Regular testing of hearing in the ordinary schools by gramophone audiometer has been established in London for some years, and many thousands of children have been tested. As a result of these tests a certain number have been discovered whose hearing is defective enough to call for education in a "hard of hearing" class, and others who require special facilities in class in the ordinary schools—these being in addition to those found by the routine methods of inspection.

Incidence of Defective Hearing

It has for some time past been generally accepted that the number of "deaf and dumb" in England and Wales is round about 40,000, or 1 in every 1,000.

In the year 1935 the total population of England and Wales was 40,645,000. Of this number 2,834,000 were children of the pre-school period; 5,468,960 were children of the school period; 32,342,040 were people of the post-school period, of whom there are about 3,300,000 of the age of 65 and over.

Roughly the ratio between them is pre-school : school : post-school as 1 : 2 : 11; or, in other words, the pre-school individual constitutes one-fourteenth of the total population, the school individual two-fourteenths, and the post-school eleven-fourteenths.

Let us consider, first, the so-called deaf. In 1935 there were 446 deaf children in the London County Council schools, but of these ninety-four were out-county children. There were in addition forty-five London children in out-county residential schools. Making allowance for these we get a net result of 397 London deaf children.

These 397 deaf children were part of a school population of 534,500; and if these figures are applied to the whole population we arrive at 32,060 as representing the total number of deaf in England and Wales. Further, if these 32,060 are divided up according to the ratio 1 : 2 : 11, it is found that 2,290 are of pre-school period, 4,580 of school period, and 25,190 of post-school period. In arriving at these figures it is assumed not only that those of London apply to the rest of the country but that the incidence in school children is the same as that in pre-school and post-school groups. Is this assumption justifiable?

As far as the first assumption is concerned the Board of Education, from the returns made in 1935, gives 3,291 as the number of deaf children in the country or 0.67 per 1,000 of the school population in average attendance. This figure applied to the whole population would give the total number of deaf as 24,451. I am not at all sure, however, that the returns made to the Board are as reliable as they might be. Further, the work in London is done very carefully and thoroughly, and the figures are sufficiently large—namely, one-tenth of the country—to form a reliable basis for this assumption.

Then as regards the second assumption—namely, that the incidence in the pre-school, school, and post-school groups is the same—I think it is legitimate to accept this, for there is nothing in the post-school period of such consequence as to increase the incidence above that of the school period; and as between the pre-school and school periods the only factor which has to be considered is a post-natal cause of deafness. The only causes worth mentioning in this class of deaf person are meningitis and congenital syphilis. As regards meningitis by far the greatest number of cases are found in pre-school children, and therefore the incidence is hardly altered; while with congenital syphilis most of these cases occur in the first year or two of life, and only rarely are the manifestations delayed until the school period. There are some adults who become extremely deaf, but these I would prefer to classify with the so-called "deafened." On these assumptions we may reasonably accept this figure as being not very far from correct, and therefore no adjustments need be made in these ratios.

As to the cases of acquired deafness—those frequently spoken of as the deafened—the matter becomes rather more complicated, for reasons which I will go into later. There were 210 so-called "partially deaf"—that is, Grade IIb children—in the special schools in 1935. Of this number there were eight out-county children attending the London schools, and one London child in an out-county residential school. Making allowance for these we get a net result of 203 London school children, and, as before, these were found in a school population of 534,500. If these figures are applied to the whole population a rough figure is obtained of 15,436 persons of the Grade IIb type of hearing defect.

In addition to these, however, approximately 30,000 children were tested by means of the gramophone audiometer, and among these were found four children of the Grade IIb type, four of the Grade IIa type, and 34 of the Grade I type. If these figures are applied to the whole population they would represent roughly 5,800 Grade IIb, in addition to the above 15,436 already accounted for; 5,800 Grade IIa type; and 50,000 Grade I type. This would mean that altogether there would be about 21,000 of the Grade IIb type in the country.

As before, it is assumed that the London figures can be applied to the whole of England and Wales. But it cannot be assumed in this case, as was done in the case of the "deaf," that the incidence is the same in the pre-school, school, and post-school periods. Factors arise which make the incidence of hearing defect in post-school life higher than in school life.

Factors Influencing Deafness

There are several factors which influence the incidence of hearing defect in the different groups; chief among these are the hearing defects arising from chronic middle-ear catarrh and otosclerosis; the defect of hearing arising in the course of certain occupations, such as those of cotton-weaving, riveters, boiler-makers, etc.; and senile hearing defect. It will be noticed that though chronic middle-ear catarrh is found among children, it is more common and more pronounced in adult life, while the other factors arise in adult life only. These combine to make the incidence in the post-school group higher than in the school and pre-school. The great difficulty is to get enough evidence to know what the increase is.

Taking the noisy trades, it is well known that the incidence of defective hearing among the cotton-weavers of Lancashire is very high, and it also is with the wool-weavers. Riveters and those in the boiler-making trade have long been known to develop hearing defect as the result of the continuous loud noise associated with their work. Some time ago Dr. G. P. Crowden examined a number of these workers audiometrically at Devonport, and he found an incidence of 33 per cent. defective hearing among the riveters and boiler-makers, but among other workers not engaged in the noisy branches the incidence was about the same as that in the case of school children. I propose, therefore, to suggest 33 per cent. as the figure of incidence of defective hearing among the noisy trades generally, and I think one-third would be a liberal estimate of those who are affected severely enough to come within the scope of a Deaf Persons Act. The number of workers in noisy trades is 315,300. So on this basis those with defective hearing would total 105,100; and those severely affected roughly 35,000.

Deafness in Later Life

With regard to the deafness of later life—that is, 65 years and over—I have made audiometric tests in some of the public institutions. There are 180,295 persons in the public assistance institutions, and of these 61,549 are over 65 years of age. About 76 per cent. of these persons failed to pass the tests, and roughly 20 per cent. came within the type of Grade IIb. This figure applied to the whole population of persons over 65 years—that is, roughly 3,000,000—gives us 2,288,135 as defective in hearing and 593,220 of the Grade IIb type. These inmates of public assistance institutions, as is well known, are mainly below average in intelligence, etc., and so the figure is probably rather on the high side.

With regard to the people of the post-school group up to 65 years of age I have made tests of some hundreds of individuals in Government offices, public assistance institutions, etc. This combination contained both the best type of individual, the poorest, and the intermediate, so all sorts are included.

The result of my tests showed that about 12 per cent. failed; but I was rather surprised to find that there was not a single case of the Grade IIb type among them. Many were severely deaf in one ear, but not in both. No doubt some cases would be met with if considerably larger numbers were tested, but if we triple the incidence of the Grade IIb as found by the audiometric test in the school period (that is, an extra 8 per 23,038 for this group) an adequate allowance will have been made for chronic middle-ear catarrh, etc., especially in view of the liberal allowance made for the noisy trades and the figures given for the over 65 years group. If then the available data are collected and the necessary adjustments made the following figures are obtained.

Table giving numbers of those with Defective Hearing

1.	Grade III type		32,050
2.	Grade IIb type (based on those not audiometrically tested)		15,436
3.	Noisy trades (33 per cent. of 315,300)		105,100
4.	Deafness among those 65 years and over		2,288,135
5.	8 per cent. failures audiometrically tested applied to pre-school children (3,000,000)		240,000
6.	8 per cent. failures school children (5,500,000)	440,000	
	Less 20 per cent. passed after treatment	88,000	352,000
7.	12 per cent. failures post-school period up to 65 years (29,000,000)	3,480,000	
	Adjustment for noisy trades already accounted for —Deduct 12 per cent. of 315,300	37,836	3,442,164
	Total		6,474,885

The number thus amounts roughly to 6½ millions, or about 16 per cent. of the population or 1 in 6 persons.

Though these people are from a medical point of view defective in hearing, quite a large proportion of them have only a comparatively slight defect, and, further, many have a defect in one ear only. For example, in the case of the school children roughly two-thirds are defective in one ear and one-third in both ears; so quite a large proportion of this huge number have little or no handicap. Further, if all cases that would benefit from treatment were treated efficiently the number would not be so high.

To make an estimate of the number of persons who would be covered by a Deaf Persons Act, a list must first be made of all those of Grade III and Grade IIb types.

1.	Grade III type		32,060
2.	Grade II*b* type based on those not audiometrically tested in school		15,436
3.	Grade II*b* type found by audiometric testing on the basis of 4 per 28,038, applied to the population, which includes the pre-school, school and post-school groups up to the age of 65 years—that is, on a population of 37,000,000		5,349
3*a*.	Allowance for cases of chronic middle-ear catarrh and otosclerosis, etc., for people of the post-school group up to 65 years at the rate of 8 per 28,038=roughly		8,000
4.	Noisy trades Grade II*b* on the basis suggested .. An adjustment must be made here, since these come into headings Nos. 2 and 3; and we must take Nos. 2 and 3 as applied to the post-school population up to 65 years, in which these workers fall; that is, 1 per cent. of 15,151 (203 in 534,500 gives 11,014 in 29 millions; 4 in 28,038 gives 4,137 in 29 millions; that is, 15,151 altogether. 315,100 in about 1 per cent. of 29 millions. ∴ 1 per cent. of 15,151=151) ..	35,000 151	34,849
5.	Grade II*b* deafness occurring in persons over 65 years, which includes senile deafness, advanced middle-ear catarrh, otosclerosis, etc. If results of the tests be applied to the 3,000,000 population the figure would be 593,220. But many of these receive State assistance at the age of 65 years. There are, however, 575,391 who do not receive aid from the State until 70 years of age, and if we apply the results of our tests to these we get a total of 113,773 who would fall within the scope of a Deaf Persons Act between the age of 65 and 70 years ..		113,773
	Giving a total of		209,467
	From this number have to be deducted:		
(*a*)	The Grade II*b* audiometrically tested pre-school and school population—namely, 8,500,000 at the rate of 4 per 28,000	1,214	
(*b*)	The Grade II*b* not audiometrically tested pre-school and school population—namely, 8,500,000 at the rate of 203 per 534,500	3,210	
(*c*)	The Grade III pre-school and school population—namely, 8,500,000 at the rate of 534,500 who would not come under the Act	6,313	
			10,737
	Giving a net result of		198,730

Conclusions

To sum up: if the figures for London are accepted as applicable to the whole population, and the results of the tests of our "samples" of the different groups are applied to the remainder of the population, we arrive at an estimate of about 6½ million people who have defective hearing in one or both ears—that is to say, 16 per cent. of the total population of England and Wales, or one in every six persons.

Also the number that would come within the scope of the benefits of a Deaf Persons Act would be about 198,000. This, however, is a maximum figure, because a very definite proportion would not need to receive benefits under the Act; for example, all those deafened through noisy occupations, so long as they retained their jobs—and they would not lose them on account of their hearing defect. Again, a certain number of those deafened, being in a more affluent position, would not require assistance.

For these reasons the true figure would be more likely to fall in the neighbourhood of 150,000.

This is not exact, of course, but nor would any other method of investigation be. If it were possible to take a census we should not be any better off. The ordinary census is quite a different thing. First, it is compulsory; secondly, the questions to be answered—for example, the number of males and females in the house, etc.—are comparatively easy to answer, but in the case of a census dealing with defective hearing the results would not be worth the paper they were written on. In the first place, it would be voluntary, and many people would not make a return; and, in the second, many would return themselves as normally hearing when they were not. It is a common experience to examine an individual with over 50 per cent. of his hearing gone before he realizes he has a hearing defect at all. Then how would those who regard themselves as defective make their return, and under what heading?

At the present time there is a special committee sitting on the problems of defective hearing, and I have the honour to be on that committee. We have taken the evidence of many witnesses, and I think I should be correct in stating that no two of those witnesses meant just the same thing by the terms "deaf," "partially deaf," "hard of hearing," etc. These are vague and elastic terms, meaning one thing to one person and another thing to another. Their use should be very restricted. This is why I have adopted the terminology of the grades in my examination and classification of school children, each grade being defined exactly.

This method is concise and scientific, and if used by all would make for clear understanding.

If witnesses whose life-work is among the deaf adopt different standards in their minds for these terms it cannot be expected that the "man in the street" would show anything approaching unanimity in his answers. The only possible way to approach accuracy would be to examine the 40 million people in this country, and even then, unless they were examined by one examiner—which of course would be quite out of the question—the personal factor cropping up in the different examiners would make for variations. So even this would not give us an accurate return.

Nevertheless if it is possible to give—as I have attempted to give here—an estimate of the probable number around which the true figure, if known, would fall, a step will have been taken to solve a difficult problem and towards obtaining a Deaf Persons Act.

Summary

1. A rough estimate has been made (*a*) of the total number of persons with defective hearing in England and Wales, (*b*) of the number of persons who would come within the scope of a Deaf Persons Act, on the lines of the Blind Persons Act.

2. No method of investigation of any kind would furnish an accurate figure.

3. The method employed in this investigation was that of applying the incidence found in "samples" of various sections of the population to the whole population of these sections.

4. Many adjustments were required, especially in estimating the number under (*b*), and while some of the most important ones have been made in the investigation others have had to be disregarded owing to the lack of data—for example, the incidence of severe deafness in persons in State mental institutions.

5. The estimate shows that about one in every six persons in England and Wales is defective in hearing in one or both ears.

6. The number of persons who would be covered by a Deaf Persons Act and partake of its privileges would probably be in the neighbourhood of 150,000.

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SOCIAL BACKGROUND OF ILL-HEALTH

The transition from alleviative charity to constructive public service and an active participation in preventive medicine has been manifested in our hospital system by the growth of social service departments. Disease, which used to be regarded as an entity, is now looked upon as an event in a chain of circumstances and restoration to health as a pilgrimage in the reverse direction. Medicine and surgery can be very helpless unless some organization is available to deal with the "social" components in this chain. Defining "social" as that which concerns human associations and the stresses and strains of those associations, Thornton and Knauth[1] have recently presented us with a very clear picture of what this process means in the lives and clinical histories of one hundred consecutive admissions to the Presbyterian Hospital in New York. They show that hospital social service is not merely confined to making prescribed treatment economically possible for the patient, but that in a far wider sense social investigation is implicit in treatment and often invaluable in diagnosis.

The social problems that face the United States and Great Britain are in some respects very different. The absence of national health insurance and the difficulties of full racial assimilation complicate the American picture. The similarities are, however, highly significant and demand close attention in any society which is becoming more and more mechanized and urbanized. A rural community may lack the equipment and specialization possessed by urban dwellers not only for treatment when ill but for the ordinary processes of living. On the other hand, as Thornton and Knauth point out, the town dweller is more migrant and his contacts are more impersonal, so that when he begins to ail he often lacks the individual care and attention of friends or relatives. This was notably so in a majority of the cases in the series, and was a major factor in many in allowing a really serious situation to develop. The population of the United States, tending to be more migrant than ours, showed this to a greater extent than would be evident here, but it is not a factor to be overlooked when considering the redistribution of population. Arising out of this there is a corollary. People need a family doctor in the background. He it is who can see things in their totality and observe the effects of economic, domestic, and other influences before trouble goes too far. Highly organized and specialized hospital and clinic services are necessary, and we need the new industrial clinics that are arising, but the general practitioner is, and must always remain, the backbone of medicine. He must be able to use the hospital and other social service facilities when he requires them, but, conversely, without his aid these services would largely fail to achieve that personal contact between medicine and the patient which is essential not only for effective therapy but for education and prophylaxis.

Apart from this lack of personal service, which affected 65 per cent. of the cases under review, the next most potent social components in illness were faulty personal habits, undue struggles for existence, and dissatisfaction with work. Faulty personal habits can only be corrected by a process of education applied either *ad hoc* to specific cases or as a preventive measure in schools. It is not enough merely to teach hygiene. In secondary schools and universities we need to aim at the inculcation of some sort of biological awareness. That those who administer our complex society can achieve positions of great power and influence without even a nodding acquaintance with the nature of vital processes is a grave error, for it hampers the necessary correlation of historical and economic events with physiological and emotional needs. Such an ordered background would in time affect the general level of thought and would powerfully influence public and private action. In this way the needs of society would be met not only by the provision of material comfort but by the development of satisfactions which would remove some of the main causes of emotional unrest. Dissatisfaction with work is not just being discontented. It means the lack of emotionally satisfying yields from the output of energy. We have to consider this carefully in relation to modern employment, and it is perhaps here as much as in anything that industrial medicine has its new advances to make.

Medicine cannot bring about direct alterations in the economic fabric nor in the work men and women do, but it can influence changes in the methods of doing that work, in the systems of control, and in the various schemes of incentives. To do this it must press for a wider recognition of the clinical effects of good and bad labour management, and it must emphasize the need for a sound biological outlook in social and industrial administration. Whether preventive or curative the social component in medical care is primarily

[1] *The Social Component in Medical Care.* By Janet Thornton, in collaboration with Marjorie Strauss Knauth. London: H. Milford, Oxford University Press. (15s.)

ucational. We have a great task to correlate
: physical and mental welfare of mankind with
:ial states, and this must be done without making
ople soft and introspective. A world full of
ichinery needs a high degree of reason to keep
safe and sane, but the force of emotion remains
strong as ever, full of potentialities for creation
destruction, for increasing health or producing
d aggravating illness.

Miss Thornton and Dr. Knauth have not de-
ibed anything new. They do not claim to have
ne so, but they depict most forcibly a mass of
manity, much of it not uneducated in the
:epted sense, struggling with appalling ignorance
biological and social forces against a stream
competitive economic individualism which
her wears them down so that they become ill,
ysically and mentally, in a vicious circle, or
ich, once they are ill, draws them into the
rtex. In spite of our makeshift ways, or per-
ps because of them, we have in this country
:aped so far from much of the worst effects of
gh-pressure living, but the future is uncertain,
d we must see to it that in attacking social ills
d in evolving new systems we neither leave men
d women at the mercy of forces too great for
:m to stem nor at the same time destroy that
rsonal responsibility and independence which is
:ential for health and happiness. It is a problem
ich must not intimidate us, or assuredly it will
stroy our society.

MESODERMAL SYNDROMES

ke most syndromes the triad of hereditary brittle-
ss of bones, blue sclerotics, and otosclerosis came
be recognized in a piecemeal manner. As early
1788 Eckman established the hereditary nature
one form of fragility of bone in reporting the
currence of fractures in three generations. When
:ording other cases of that nature Spurway, in
: *British Medical Journal* in 1896, remarked on
e blueness of sclerotics in some of his own cases.
iat this was no accidental association was clearly
oved by Eddowes in 1900, also in these columns.
ie further association of deafness occurring in
ch patients in the third and fourth decades of life
is established in 1917 independently by Bronson,
id by van de Hoeve and de Kleijn. The careful
ady by Julia Bell in 1928 in *The Treasury of*
uman Inheritance clearly demonstrated the domi-
int nature of this affection. As with all syn-
omes, it is the exception rather than the rule to
id all the components in one and the same patient,
id in the diagnosis of an individual case the family
history is frequently of paramount importance.
That the disturbance is indeed widespread is brought out by the fact that many of the patients are undersized, quite apart from any stunting of stature due to multiple fractures. Skull deformities were noted by Apert, Bach, and Odinet in 1928, while phlebosclerosis has been reported by Joachim and Wasch. Radiography shows the bone to have a decreased density and the cortex to be thin; excessive calcification is, however, occasionally present in the petrous bone. While fractures may occur throughout life they are less frequent after puberty. Healing is invariably good.

It is still undecided whether the bluish appearance of the sclera is due to thinness of the tissue *or to an increased translucency from diminished calcium content*. Both these views are being supported by both positive and negative evidence.[1] In a general way it may be said that the syndrome is mesodermal in origin, and is thus linked up with the various other mesodermal syndromes, such as arachnodactyly and the more recently described status dysraphicus. Status dysraphicus is not by any means a clearly established entity. It is based on the old conception of Henneberg that faulty closure of the neural tube is the cause of syringomyelia. This conception was worked out in detail by Bremer,[2] who searched in patients with syringomyelia and in their families for developmental anomalies which would seem to result from a spinal dysraphy. He found a considerable number: preponderance of the extended arms over the body length, funnel chest, acrocyanosis, moist, cold hands, kyphoscoliosis, winged scapulae, webbed fingers, inequality of the mammae, spina bifida, anomalies of the ears, highly arched palate, and other signs usually labelled stigmata of degeneration. The work of Bremer widened the conception of syringomyelia, making it part of a well-defined syndrome, hereditary in character, and showing a range from the normal to the definitely pronounced case of syringomyelia. Believing the anomalies to be due to malformation of the spinal raphe, he suggested the name of status dysraphicus. Ocular aspects of this syndrome were elaborated by Passow[3] in papers published during the last few years. He stressed the frequent occurrence of the Horner syndrome and heterochromia iridis, and advanced experimental evidence to show that the faulty embryology in status dysraphicus involved the motor fibres and cervical sympathetic and thus led to the Horner syndrome. The many points that arachnodactyly has in common with status dysraphicus found an

[1] Hills, R. H., and McLanahan, S. (1937). *Arch. intern. Med.*, 59, 41.
[2] *Dtsch. Z. Nervenheilk.*, 1926, 95, 1.
[3] *Klin. Mbl. Augenheilk.*, 1935, 94, 102; *Münch. med. Wschr.*, 1934, 81, 1243; *Arch. Augenheilk.*, 1933, 108, 37.

apparent contradiction in the dissimilarity of the ocular complications. Since pupil changes are not infrequent in arachnodactyly, there are points of contact between the two syndromes as well as the dissimilarities, and Passow has tried to explain the ocular complications of both syndromes by a common embryological fault. From a review of the literature on arachnodactyly Pino, Cooper, and van Wien[1] argue that evidence of status dysraphicus is indeed to be found in some of the reported cases of arachnodactyly, and in one case the Horner syndrome seems to have been present.

So little, however, has as yet been reported on status dysraphicus that it is difficult to reach final conclusions. What is interesting is not only the slow recognition of new syndromes but the suggestion that these syndromes have common underlying factors. For the present the building-stones rather than the ultimate edifice are being dimly realized.

THE SPHINCTER OF ODDI

Some people are still sceptical about the existence of the sphincter of Oddi, and E. A. Boyden[2] now suggests that there are two reasons for this. First, it is difficult to separate the action of the sphincter from that of the duodenal muscle which surrounds it, and, secondly, because of the small size, position, and complexity of the sphincter it has been equally hard to demonstrate its independence histologically. Boyden has therefore made a comparative study of the sphincter, and finds that the termination of the common bile duct varies a good deal both in man and in animals. There is no ampulla in the dog, and even in its embryo the bile and pancreatic ducts have separate openings into the duodenum. In some animals the musculus proprius of the common duct is easily separable from that of the duodenum, and in others there is an intimate blending of bile duct and intestinal musculature. The musculus proprius is well seen in the opossum, in which the ampulla of Vater and its duct are clothed with a thick double layer of smooth muscle consisting of circular and longitudinal coats. In man the muscle of the ampulla is a relatively weak layer consisting of longitudinal fibres overlying an inner circular layer, but proximal to this there is a zone of more powerful circular fibres surrounding the bile duct. These may be designated the sphincter choledochus, and there is evidence that these fibres can hold up the column of bile in the duct so that pancreatic juice alone may under certain conditions enter the duodenum. Magnesium sulphate introduced into the duodenum relaxes the sphincter choledochus and allows an admixture of bile with pancreatic juice. Boyden's studies show conclusively that in the opossum, guinea-pig, dog, and man the pars intestinalis of the bile channel and its associated duct of Wirsung (if this be present) are ensheathed in a two-layer musculus proprius which may legitimately be designated the sphincter of Oddi. In the *Journal* of December 12 last year (p. 1203) we drew attention to some valuable clinical research at the Mayo Clinic by Butsch, McGowan, and Waltman Walters on the action of certain drugs on the emptying mechanism of the common duct. One of the most important results of this research was to show that morphine, even in small doses, caused an increase of intrabiliary pressure, and it was concluded that this drug should be avoided after operations on the biliary duct. Some further experimental work on the resistance of the sphincter in man has been reported lately from New York.[3] Observations on the resistance of the sphincter were made with apparatus rather like that used by the workers at the Mayo Clinic. The patients in whose common ducts T-tubes had been placed had all had operations on the biliary tract, so that only pathological conditions were available for study; we must therefore be chary of applying conclusions drawn from them to normal conditions. From their investigations, however, and particularly from those made on cases in which infection was minimal and conditions approached the normal, the authors conclude that the resistance of the sphincter of Oddi is normally somewhere about 150 mm. of water. Doubilet and Colp find also that their experimental work supports the contention that magnesium sulphate is much more effective than ordinary or even fatty meals in causing relaxation of the sphincter. They also confirm what Oddi first observed—that spasm of the sphincter is produced by the local application of hydrochloric acid. Their experiments support the conclusion of the workers in the Mayo Clinic that morphine causes severe spasm of the sphincter. In certain cases this spasm lasted over three hours and was not abolished by atropine. They state that a satisfactory drug for the treatment of biliary colic is still to be found.

[1] *Ann. intern. Med.*, 1937. 10, 1130.
[2] *Surgery*, January, 1937, p. 25.

ANTI-PLAGUE VACCINE—LIVE OR DEAD?

Plague continues to exact a heavy toll in many different parts of the world. Whenever possible the most satisfactory way to combat it is to direct a fierce attack upon the rat population, for, as the English Plague Commission demonstrated, the continuance of the disease in man depends upon infection of these rodents. By constructing rat-proof houses for the native population long-standing foci of disease may be eliminated. For example, at Malang, in East Java, where plague claimed 22,000 victims between 1911 and 1915, the disease has been completely stamped out by rebuilding 140,000 houses for the natives. Not a single indigenous case, in fact, has occurred since 1916. Such radical treatment, however, is not always possible. Where rats cannot be built out of existence measures must be taken to raise the resistance of those who are likely to be exposed to infection. For this purpose vaccination is now being extensively used. The type of vaccine varies. In India Haffkine's dead vaccine is still favoured; in the Dutch East Indies a living avirulent vaccine is preferred. It is difficult on the available evidence to decide which of these two vaccines is the more valuable. Sokhey and

[3] Doubilet, H., and Colp, R.: *Surg. Gynec. Obstet.*, March, 1937, p. 622.

Maurice[1] at the Haffkine Institute, Bombay, have been devoting themselves in recent years to improvements in the preparation and standardization of the dead vaccine. They find that cultures of the plague bacillus can be kept fully virulent if stored at 4° C., but gradually become avirulent if weekly subcultures are made and kept continuously in the incubator. For the preparation of their vaccine they insist on the use of a fully virulent strain. Killing the organisms by heat at 60°–70° C. for one to two hours, as has been done in the past, partly destroys their antigenic activity. If, on the other hand, they are exposed to a temperature of 55° C. for only fifteen minutes their antigenic activity appears to remain intact. Standardization of the vaccine is carried out on white mice. These animals are very susceptible to experimental inoculation, and almost always die after a subcutaneous injection of about fifty living bacilli. The protective action of any given vaccine can therefore be assessed on a more or less quantitative basis. Comparison between a heat-killed vaccine made from a virulent strain and a living vaccine made from an avirulent strain seemed to show that the former was considerably more effective than the latter in protecting mice against infection. From the Dutch East Indies, on the other hand, come very promising reports of the use of an avirulent living vaccine. In a communication made to the International Office of Public Hygiene Vogel[2] summarizes the results obtained by Dr. Otten, who is director of the Pasteur Institute at Bandoeng. In the two districts of Bandjaran and Batoedjadjar 37,435 subjects were vaccinated and 39,483 were left as controls. In the first group the death rate from bubonic plague was 1.01 per 1,000, in the second group 5.05 per 1,000. These results, favourable to vaccination as they were, might have been even more so if the less susceptible infants and young children had not mainly been included in the control group. It may be noted that the incidence of pneumonic plague was not greatly dissimilar in the two groups, there being a total of thirty-six cases in the vaccinated and forty-eight in the control group. The virulence of this infection, however, is such that nothing but a high degree of immunity can be expected to protect against it. On the whole the results obtained appear to have been very satisfactory. Most suggestive is the favourable impression among the natives themselves; as many as 90 per cent. are now coming forward for vaccination. It will be interesting to hear the results of a similar field trial made with the newly standardized Haffkine's vaccine.

[1] *Bull. Off. int. Hyg. publ.*, 1937, 29, 505.
[2] Ibid., p. 514.

IDENTIFICATION BY THE RETINAL PATTERN

Any method of identification has great legal value. The principal methods at present in use are, of course, the classification of finger-prints and of dentitions, but Dr. Carleton Simon, criminologist of the International Association of Chiefs of Police, has developed a method of identification by means of the blood-vessel patterns in the retina. Dr. Leo Haber[3] suggested in 1921 that retinal photographs might be used for identification, as the vascular pattern was unchangeable through life and the only difficulty lay in classification. In 1935 Dr. Simon[4] described, with Dr. I. Goldstein, a method of classification based on a retinal protractor, with the optic nerve as its centre. He uses only the vein pattern, because the arteries, having a lighter colour, are not definite enough. The zero axis is a line drawn from the centre of the papilla to a point 10 mm. distant on the superior temporal vein, and the notation describes the angles at which veins or branches intersect two circles, one of 10 mm. and the other of 5 mm. radius. His system, which has been gradually simplified in use, needs a minimum of figures and can, he says, be mastered in a couple of hours. His claim that it is a valuable adjunct to finger-print identification in certain cases appears to be sound, but its practical value, as Dr. Simon himself points out in a more recent article,[5] must be proved by time.

[3] *Arch. f. Kriminol.*, 74, 139.
[4] *N. Y. St. J. Med.*, 1935, 35, 901.
[5] Ibid., 1937, 37, 577.

AN INSURED PROFESSION

Another year of progress—the thirtieth in its history—has been recorded by the Medical Insurance Agency. The figures presented to its recent annual meeting showed a new record in every particular. The gross income of the Agency is up by some £900 on the year before, the rebates to members are up by some £400, and the grants to medical charities by over £500. The premium income on policies effected in 1936 was £280,000, and the life assurances completed represented £486,000, in each case a fourfold increase on what they were ten or twelve years ago. But the full story of an excellent piece of work for the profession is not told by these or any figures. The Agency has established itself as a disinterested body, not out for profit-making but able to offer to the profession impartial and expert advice on all matters of insurance. Insurance is nowadays a matter for experts, and there are special circumstances connected with medical practice which make expert advice on this subject more than ordinarily desirable. The Agency has set itself with great success to give advice to medical men and women on their insurance contracts, and by a system of rebates on practically all classes of policies to effect a direct saving for members of the profession on the amount paid in premiums. It is not in itself an insurance company, and very much of the business that it carries through is reflected in the profits of other concerns, but it has the satisfaction of performing a real service. At the annual meeting it was stated that owing directly to the action of the Agency there is now, in the shape of policies held by members of the profession in life, endowment, and other forms of insurance, a capital value of four and a half million pounds sterling. This represents not only an individual security for the holders of the policies and their families but also in a sense a collective security for the profession, because the effect will be eventually to reduce the number of claims upon medical charities. Many of the cases which are now helped by the Royal Medical Benevolent Fund or Epsom College would never have arisen if the claimant had effected suitable

insurances. While on the one hand the Agency is thus diminishing the need for medical charity at some future period—though the existing need requires no emphasis—it is also making grants to such charities, apparently as a reparation for not having been in existence at an earlier period. During the thirty years of its existence medical charities have benefited from its operations to the extent of £42,700. At the recent meeting, from the surplus income available, a distribution was made of £2,830 to the Royal Medical Benevolent Fund, £730 to Epsom College, and £400 to the Sir Charles Hastings Fund. Some particulars were also given of the volume of business transacted during 1936. In life and similar assurance 428 proposals, representing a capital sum of over half a million, were received and 367 of them completed. Additional motor-car insurances to the number of 332 were effected. Increases were reported in accident and sickness insurance and employer's liability and household insurance. On the basis of these figures the medical profession, commonly supposed to be unbusinesslike, is growing visibly in prudence. It is noted that the tendency is always in the direction away from special forms of insurance and towards comprehensive policies, and that no doubt is to the good. Schemes for pension benefit and for loans for purchase of house or practice continue to be popular. The committee of management, of which Sir Humphry Rolleston is chairman, with fourteen other medical members, is to be congratulated on the continuing progress of the Agency in all its undertakings.

THE HOSPITAL OF TO-MORROW

Many of the older hospitals can hardly be said to have any architecture. They are amorphous growths, and their piecemeal extension has prevented the efficient planning of wards and departments and services. An enlightened architectural intelligence, however, is now at work in hospital construction, and although no one can predict what future developments may render even the most modern constructions out of date, some of the most recent work is not only a delight to the eye but furnishes an example of perfect adaptation to modern ideas in institutional treatment of the sick. Some of these are illustrated in a special hospital issue of the *Architects' Journal* (June 24, 1s.). The views include the Birmingham Hospital Centre, which when completed will accommodate over 800 patients, with a modern teaching hospital and medical school; the Harefield sanatorium for the Middlesex County Council, with wards that give the greatest possible exposure to sunlight, while privacy is obtained by means of small ward units; Scarborough general hospital; the infectious diseases hospital at Paisley, and the Welwyn Cottage Hospital; also a number of outstanding works in London, the nurses' house of the Hospital for Sick Children, which received an award of the Royal Institute of British Architects for exceptional merit; the extensions of St. Bartholomew's; the new Westminster Hospital rising at Millbank; and that very dignified and beautiful structure, the Royal Masonic Hospital at Hammersmith. Something is also shown of continental developments; for example, the remarkable arrangement of stepped sun balconies and clerestory windows of a sanatorium in Poland. The largest problem in hospital construction is vertical versus horizontal planning. The vertical hospital has great advantages to offer in convenience for the staff, but it is also very costly and, unlike the horizontal hospital, not easily altered when it becomes out of date, as it may easily do in twenty years. One of the specialist writers in the *Architects' Journal* suggests that during the next ten years hospital designers will be most concerned with the provision of special hospitals in which planning and equipment will probably show more rapid advances than construction—particularly the equipment and arrangement of free circulation within the special departments. One important point is the elimination of noise. Some hospitals cannot be built beyond earshot of busy main roads. A good deal of noise can be avoided by double windows, but then ventilation becomes a special problem. Moreover, when outside noise is stopped inside noises remain and may seem to be intensified. Rubber floors, doors with effective silencers, the replacement of bells by coloured lights, and the use of acoustic materials go some way to diminishing the problem. Another detail is the operating theatre. The theatre unit itself has reached a high degree of development and has become more or less standardized, but the difficulty remains in a teaching school of any size of providing accommodation for students within the theatre. It is suggested that the eventual solution of this problem lies in the provision of an optical arrangement whereby a view of the operation may be projected on to a screen in an adjoining room.

NATIONAL RADIUM TRUST

The National Radium Trust met on June 28 at the Privy Council Office under the chairmanship of Viscount Halifax, Lord President of the Council. Plans were reviewed for making available a further substantial amount of radium. The Earl of Donoughmore was reappointed for a further period chairman of the Radium Commission, which allocates the Trust's radium and supervises it in use. The Trust welcomes gifts and bequests of all kinds in furtherance of its objects, including trusts subject to special conditions; it is expressly authorized to accept them under the Royal Charter granted in 1929. Of the Trust's funds £150,000 was contributed by public subscription in that year as a thankoffering for recovery of King George V. Mr. R. Stanton has been appointed secretary of the Trust in place of Mr. George North, resigned.

By an Order of the Committee of Privy Council Mr. W. M. Goodenough is appointed a member of the Medical Research Council on the retirement of Lord Mildmay of Flete. Mr. Goodenough also succeeds Lord Mildmay as Treasurer of the Council.

The Scottish Association for the Deaf has published a leaflet entitled "Advice to Parents of Young Children," which draws attention to the importance of the early detection of deafness. The leaflet can be obtained on application to the hon. secretary's office, 3, Midlothian Drive, Waverley Park, Glasgow, S.1.

THE DOCTOR IN POLITICS AND DIPLOMACY

SIR ARTHUR MACNALTY'S LECTURE

The Sir John MacAlister Memorial Lecture was delivered at the London Temperance Hospital on June 24 by Sir Arthur MacNalty, Chief Medical Officer of the Ministry of Health, who surveyed the whole of history, ancient and modern, in describing outstanding examples of "The Doctor in Politics and Diplomacy."

There was hardly a field of high endeavour, said the lecturer, in which men with medical qualifications were not to be discovered. Two men eminent in medical science had contributed also largely to laying the foundations of the science of politics. One of these was Aristotle, tutor and adviser of Alexander the Great, who was an anatomist before he became a politician. The other was Sir William Petty (1623–87), founder of the science of political economy, a graduate of medicine at Oxford, later physician to the Army in Ireland, who relinquished medicine and devoted the rest of his life to political science.

Medical Victims of Politics

When the doctor turned from healing to politics too often he embarked upon an uncharted sea of peril. In mediaeval times the physician's knowledge of drugs was liable to be invoked by unscrupulous politicians to remove their rivals. Catherine de Medici employed an Italian physician named Cosmo Ruggieri, who was supposed to have poisoned her sons at her request; probably this was untrue, but Ruggieri appeared as a sinister character in Harrison Ainsworth's *Crichton* and Balzac's *Sur Catherine de Medici*. The Earl of Leicester had an Italian physician, Julio, who was affirmed to be a skilful compounder of poisons. Another of Leicester's physicians, Walter Bayley, was also said to have a skilled knowledge of poisons which he placed at the disposal of his patron, but this must be doubted in view of Bayley's honourable conduct in the case of Amy Robsart and his life of professional integrity. Less fortunate than Bayley in the web of Elizabethan politics was Roderigo Lopus or Lopez, the Jewish physician of the queen and physician to St. Bartholomew's; he was hanged for high treason. Sir George Wakeman, physician to Catherine of Braganza, who had "the best reputation of any Roman Catholic physician in England," was denounced by Titus Oates in the days of the Popish plot, but his acquittal dealt a blow at the plot and freed the queen from suspicion. One of the most unfortunate of medical plotters was the humane and gentle Archibald Cameron (1707–53), who took medical charge of the forces raised by his brother for the Young Pretender. Although he never bore arms he was attainted for high treason and executed at Tyburn.

Two Doctors of the "Terror"

Sir Arthur MacNalty next mentioned two doctors of the "Terror." One was Dr. Guillotin, doctor of medicine of Rheims University and one of the founders of the Académie de Medécin, whose professional fame, however, was eclipsed by his association with the deadly instrument which bore his name, but of which he was neither the inventor nor the victim. In the Constituent Assembly he proposed decapitation by machine as the most humane method of execution. He had no share in the excesses of the French Revolution, at which his humane spirit must have shuddered. The other was Marat, at one time a practitioner in Soho and an M.D. of St. Andrews. When the tide of revolution rose in Paris Marat abandoned medicine for politics, and the rest of his life was closely interwoven with public events. He remained independent, criticizing in turn every party in power. After his assassination he was accorded a magnificent funeral in the Pantheon, but then came reaction; the patriots rose against his memory and flung his ashes down a sewer in the Rue Montmartre. Had he adhered to his profession he would have gone down into history as a great scientific physician.

The Doctor as Ambassador

The lecturer next discussed the doctor as ambassador. Several rulers of Russia had from time to time the services of English physicians, who acted also as unofficial envoys of the Government. One of these was Thomas Dimsdale, who went to St. Petersburg in 1768 at the request of the Empress Catherine. His successful inoculation of the Empress and her son against smallpox resulted in the granting to him of the rank of baron of the Empire, counsellor of State, and the post of physician to the Empress, with, incidentally, a pension and a handsome present.

The first medical ambassador appeared to have been Sir Thomas Elyot (1490–1546), who was ambassador to the court of the Emperor Charles V. In the seventeenth century an anatomist, John Finch, became Turkish Ambassador. Another highly distinguished medical ambassador was Sir Charles Richard Vaughan (1774–1849), Radclyffe Training Fellow in the University of Oxford, who during the Peninsular War was secretary of the Legation at Madrid and acted for a time as British Minister there. Afterwards he was Minister Plenipotentiary to Switzerland and Envoy Extraordinary and Minister Plenipotentiary to the United States. Medicine had a second ambassador to the United States in Sir Auckland Geddes in 1920.

Medical Powers Behind the Throne

Among the friends of British monarchs were two physicians, upright, selfless, and able. One was Sir William Knighton, private secretary and privy purse to George IV. Knighton was an M.D. of St. Andrews, Aberdeen, Lambeth, and Göttingen, and practised in Hanover Square, chiefly as an accoucheur. He was appointed by the Prince Regent to an important office in the Duchy of Cornwall, and was frequently employed by the Prince when he became King on confidential missions abroad. He attended the King night and day in his last illness. The other was Baron Stockmar, adviser to the young Queen Victoria. Stockmar had been an Army surgeon and personal physician to Leopold of Belgium. The advice he gave to the Queen appeared always to be frank, ripe with experience, and dictated by the highest motives. Palmerston called him the most disinterested man he had ever met. His political knowledge was immense, his influence in high affairs unbounded. Like his medical work his statecraft was based on high principles and made for good.

Medical Prime Ministers

Medical prime ministers had presided over the destinies of Denmark, France, Canada, and South Africa. The Danish prime minister was Struensee (1737–72), who became virtually dictator of Denmark in 1770, but he ended his career on the scaffold. The French prime minister was Clemenceau (1841–1929), whose forbears for 300 years were doctors. Hardly had he begun to practise in Montmartre when politics claimed him. "The Tiger" made and destroyed ministries at his pleasure, but his political integrity was never doubted. The last phase of his career, when he led the last War Government of France, was still in the public memory. Sir Charles Tupper, a doctor, for a time guided the destinies of Canada with wisdom and success; he did much to bring about the federation of the Canadian provinces. The most romantic of medical prime ministers was Leander Starr Jameson, prime minister at Cape Colony from 1904 to 1908. He was born in Edinburgh, and studied medicine at University College Hospital, London,

G. STEWART SMITH: CHRONIC MONOCYTIC LEUKAEMIA

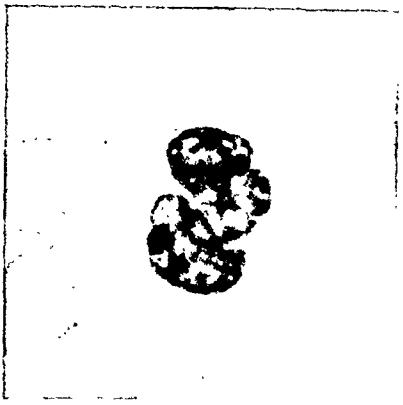
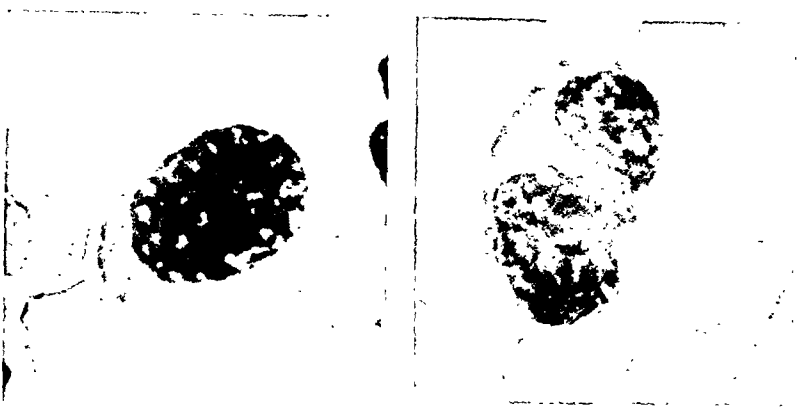
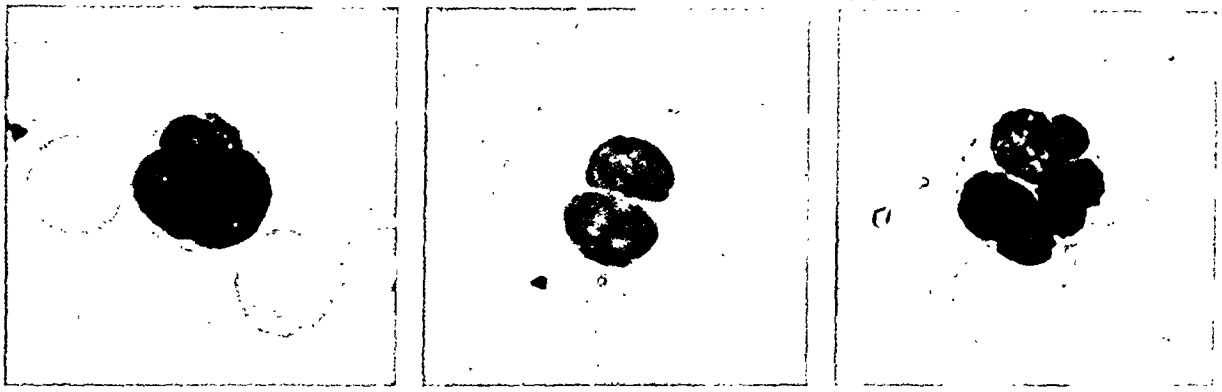


FIG. 1.—Monocyte (Type 1) showing lobulated nucleus.



FIGS. 2 and 3.—Monoblasts (Type 2); much larger cells than the monocyte, with faintly marked nucleoli and vacuolated cytoplasm.



FIGS. 4, 5, and 6.—Primitive cells (Type 3). In Fig. 4 the nucleus is single, in Fig. 5 bipartite, and in Fig. 6 tripartite. (Magnification × 2,000.)

A. RALPH THOMPSON: VESICAL EXTROVERSION WITH CONTROL OF MICTURITION

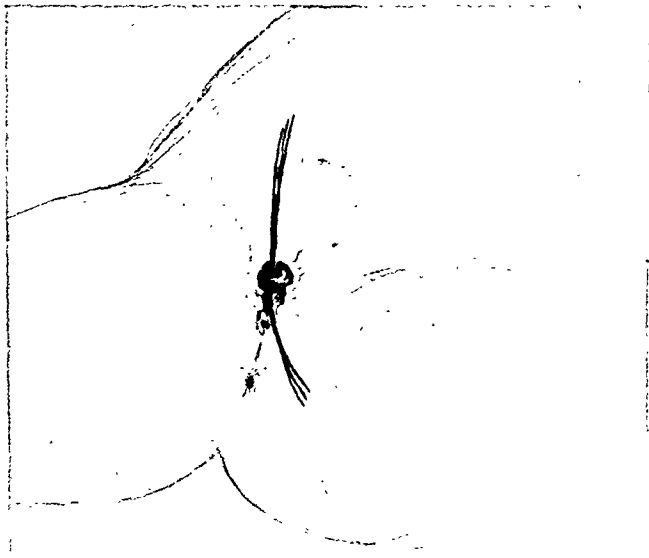


FIG. 1.—Case I. Salmon-gut probes have been passed through the proximal urethra from the bladder.

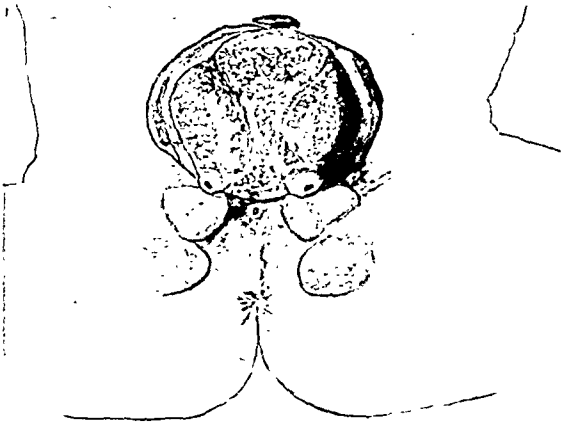


FIG. 2.—Case II. Note the large extroversion of the bladder showing the ureteric orifices, and below this the bilateral projections which represent the penis and the scrotum. The central orifice between the projections suggests a proximal urethra.

V. B. GREEN-ARMYTAGE: TUBO-UTERINE IMPLANTATION FOR STERILITY

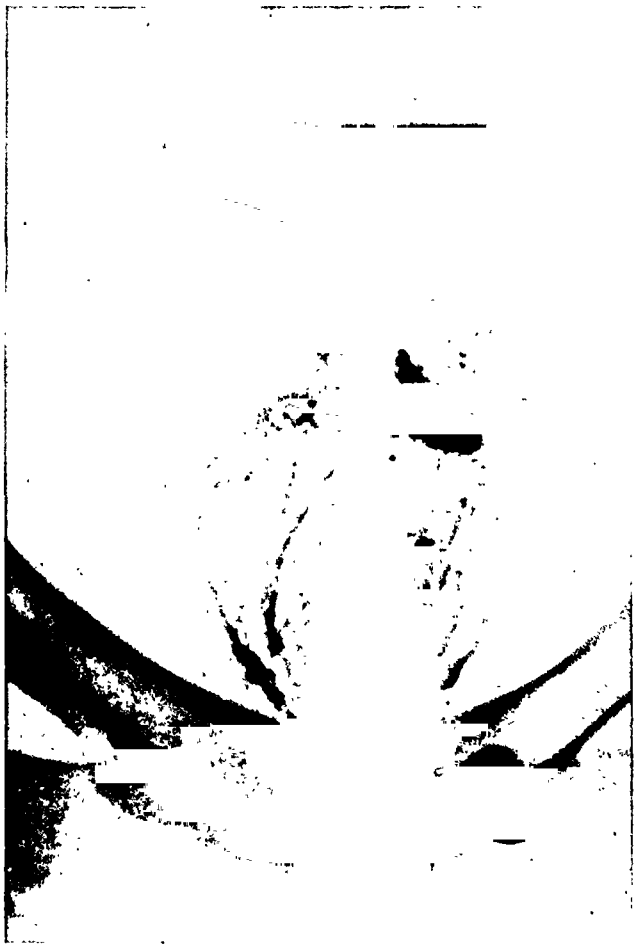


FIG. 1.—Showing the uterus before operation.



FIG. 2.—Six months after operation.

LÉON FEINSON MULDAVIN: CRANIOCLEIDODYSOSTOSIS



R. A. DESAI: SCHAMBERG'S DISEASE



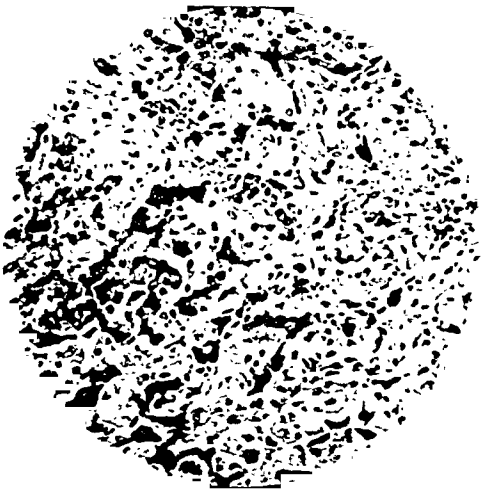


FIG. 1.—Section of liver.

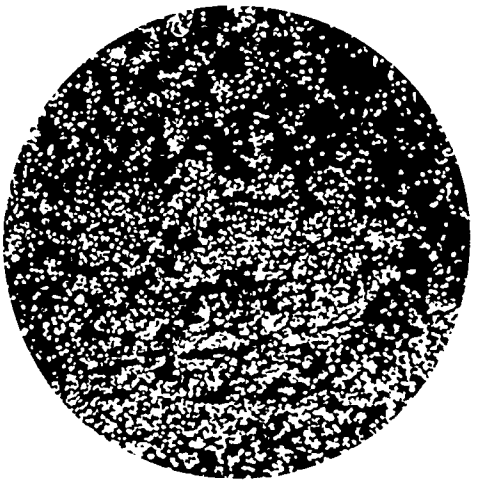


FIG. 2.—Section of a lymph gland.

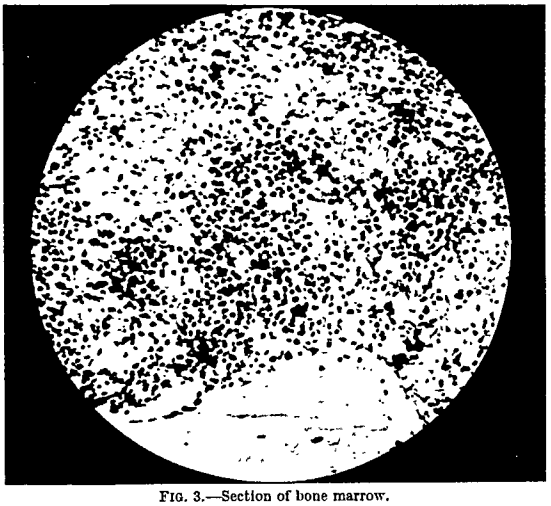


FIG. 3.—Section of bone marrow.



FIG. 4.—Section of spleen, showing nests of Gaucher cells.

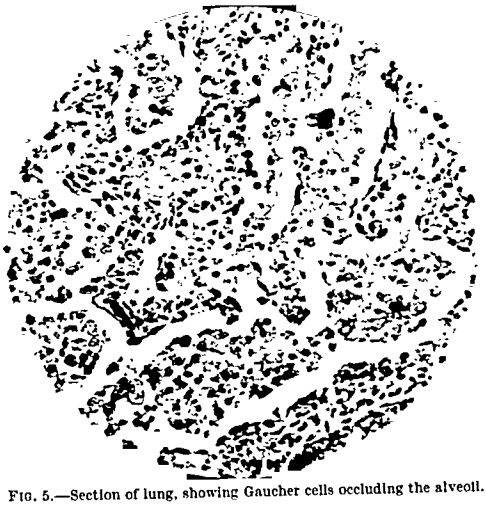


FIG. 5.—Section of lung, showing Gaucher cells occluding the alveoli.

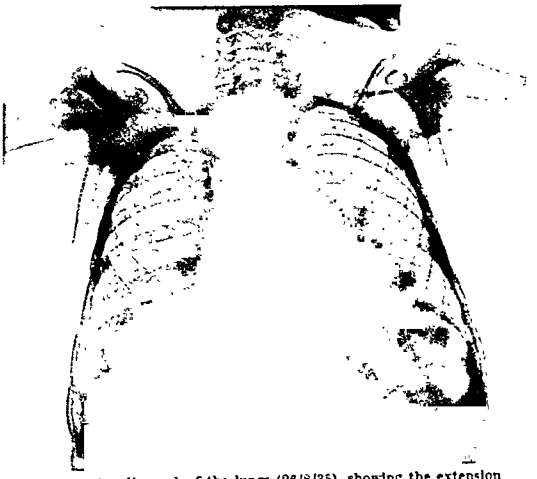


FIG. 6.—A radiograph of the lungs (26/8/35), showing the extension of the Gaucher process outwards from the mediastinum and towards the apices. This was taken just four months before death.

A. J. CLEVELAND AND A. P. AGNEW: A CASE OF CALCINOSIS



FIG. 1.—Photograph of left hand and left knee, showing nodular areas of calcinosis.



FIG. 2.—Radiograph of left hand, showing calcinosis in the middle and little fingers.

GEORGE L. FOSS: TEMPORARY POSTPONEMENT OF MENSTRUATION BY OESTRADIOL BENZOATE



Typical menstrual mucosa with the cytogenic stroma cells showing marked menstrual or decidual reaction

JOHN R. BLAZÉ: FATAL CORONARY THROMBOSIS IN A MAN AGED 23



Photograph of the patient's heart. 1=Clot in artery. 2=Vessel-descending branch of left coronary. 3=Atheromatous plaques.

went to South Africa on grounds of health, and began practice at Kimberley in 1878. The lecturer recalled the circumstances of the Jameson Raid. Mr. Huggins, the present Prime Minister of Southern Rhodesia, was a Fellow of the Royal College of Surgeons.

Sun Yat Sen (1867–1925), who overthrew the Manchu regime and rose to be the "father of the Chinese republic," was also a doctor. One of his tutors and friends in Hong Kong was Sir James Cantlie.

Medical Training as a School for Statecraft

From this study of the doctor in politics and diplomacy, Sir Arthur MacNalty concluded, it would be readily apparent that members of the medical profession had played no small part in administration and government, and that they owed their success in a measure to their previous medical training. Not a few could attribute their rise directly to the recognition in their professional capacity of their fine qualities of character. This was certainly true of Sir William Petty, Sir John Finch, Sir William Knighton, Baron Stockmar, and Sir Starr Jameson. The medical eminence previously achieved by Guillotin, Marat, and Struensee certainly paved the way to political influence. Clemenceau rose to power through his gifts of oratory and literary expression rather than his knowledge of medicine. For the most part these men carried into politics the high ideals of the Hippocratic calling. The majority had not only been great but good men. Even in the exceptions to the rule redeeming qualities could be found. Marat had high political aims, though his methods of securing them were monstrous and indefensible. Struensee was a libertine and something of a scoundrel, yet he honestly desired to better the condition of Denmark.

"To-day in this country the doctor is playing an important and progressive part in the national life. He need not necessarily go into politics to do this, because the politicians come to him for advice and counsel. A special kind of medical adviser has arrived, the medical officer of health, who guards the health of the persons in his area and advises his council on appropriate measures for securing it. The leaders of the medical profession are frequently consulted on desirable health reforms. The Health Committee of the League of Nations has done much to improve health conditions abroad and to make medical knowledge and experience international. In all these ways the doctor exercises an influence on political thought and legislative action."

Sir Arthur MacNalty said in conclusion that from all this it was evident that the professional advice of the doctor was often utilized by the State not only for the benefit of individual patients but for the betterment of the whole community. His role was generally a more sheltered and inconspicuous one than that of the medical politician. Still, when the physician laid aside the rod of Aesculapius to enter the dust of the political arena his previous medical training stood him in good stead, and he might rise to be the chief executive of his country or to be its representative in another.

L. Bayer (*Zbl. inn. Med.*, May 1, 1937, p. 369) discusses at length the two apparently opposite theories of the nature of the inflammatory reaction—namely, the theories of Spiess and of Bier. Spiess introduced the conception of the cure of inflammation by anaesthesia, while Bier has shown the importance of hyperaemia for the healing of inflammatory conditions. The author was able to prove by experiment that a complete anaesthesia inhibits the setting in of an inflammation following injury, and that it favours healing when applied after the inflammation has already set in. The anaesthesia seems to act very favourably on chronic as well as on specific inflammatory changes —for example, lupus. The same principle applies to the cure of gastric ulcer. Acute and chronic ulcers heal rapidly and surely following repeated applications of an anaesthetic to the ulcer.

INCIDENCE OF WAR NEUROSIS

The third annual conference called by the Ex-Services Welfare Society was held in London on June 25 under the chairmanship of Dr. EDWARD MAPOTHER, when the subject taken for discussion was the control of the incidence of war neurosis.

The CHAIRMAN, in an opening address, said that it had been stated that cases of war neurosis formed only 2 per cent. of the medical casualties of the last war, but in reality if all that was truly neurotic had been called by that name the figure would have been much larger. One medical officer who had acted as a medical specialist in a hospital at home during the war estimated that one-third of the admissions to his wards were for purely neurotic complaints. In the next war disability through terror rather than through physical injury was likely to play an even larger part. One reason for this was the increasing importance of gas warfare; everyone agreed as to the frequency with which neurosis followed the experience of a gas attack. Three groups of problems arose under this subject: (1) the treatment of the malingerer before and after enlistment; (2) elimination of the potential neurasthenic during training; and (3) prevention and treatment of war neurosis actually in the field.

Malingering

The first of these problems raised questions of vital importance with regard to the examination of the recruit. It might be assumed that almost immediately after the outbreak of the next war the principle of universal liability to service would be accepted, subject to some form of exemption for real conscientious objectors. In 1914 the sudden expansion of the Army made complete chaos of the arrangements for the examination of recruits; in some cases a medical man examined 400 potential recruits a day. On a future occasion it would probably be possible to make better arrangements. It might well be questioned whether any definite exemption from liability to service should be granted on the evidence of medical certificates unless these were furnished by a doctor who had had the man under observation for the disability in question during several years. If examination of recruits was proceeding at a reasonable rate it might be possible to provide places of observation for doubtful cases.

As for the distinction between malingering and hysteria, objective evidence could be only indirect. The diagnosis must be based upon such things as variation of symptoms when the man was unaware of observation, variation according to his interests from time to time, discrepancies between his subjective symptoms and his behaviour, and, of course, his general character and his attitude towards treatment and recovery. In the pre-enlistment cases diagnosis might be more easy because the condition was less likely to be associated with anxiety neurosis. Malingering was often superimposed on genuine anxiety neurosis in the case of a man who had actually been in the line.

Elimination of the Neurasthenic

With regard to the second problem, the elimination of the potential neurasthenic, Dr. Mapother continued, it would be impossible to expect a medical man making a preliminary examination of recruits to give an exact forecast as to liability to neurosis. He might be able, however, to refer such cases to an expert who could judge whether the attention of the medical officer of the unit should be specially directed to him, and whether the man should be sent to an observation centre. There had recently been an active search for definite psychological tests of temperament, and there was evidence that these had some value in enabling a forecast to be made of probable response in future situations. It was so important to keep fighting units free from people who by their neurosis would destroy the morale of the unit and fill

the hospitals that it would be advisable to carry on some intensive research work into the possibility of identifying the men likely to break down.

The best way of eliminating the potential neurasthenic was to train him into a good soldier, and that was the task of the combatant officer. The men should be told during training that everyone was apt to be frightened, that it was neither a discredit nor an excuse for shirking duty, and that the interest of the individual soldier had to give way to the interest of the nation. It might be useful for combatant officers to note in their men any undue disturbance during firing practice, when learning to ride, or on first entering a gas chamber, and to refer those showing such disturbance to the medical officer of the unit.

It was recognized that the freedom of a divisional unit from war neurosis mainly depended upon the personality of its medical officer, upon his knowledge of men, and his handling of them. A very distinguished neurologist had said that the regimental medical officer should not be a peace-time psychologist, and with that he agreed, but personal experience suggested to him that there was room for one well-trained psychiatrist in a division, available for consultation with the medical officer of the unit, and also available to the A.D.M.S. when a high incidence of neurosis began to appear in a particular unit.

War Neurosis in the Field

The prevention in a collective sense of war neurosis among troops in the field, said Dr. Mapother, was a problem identical with that of the maintenance of morale, and was therefore largely one for the combatant officer. It depended upon such factors as contentment, the team spirit, and belief in the cause for which the men were fighting. It was generally felt by combatant officers that even if war neurosis was not regarded as discreditable to the individual an epidemic of it was discreditable to the unit in which it occurred. The introduction of the term "shell shock" to include emotional disturbances had been a serious mistake. He thought it was also generally agreed that, so far as military exigencies allowed, very few functional cases should have been sent back to England. It might have been necessary to discriminate between hysteria and anxiety neurosis, and send back men suffering from the latter condition, but even they should have been sent to hospitals where strict discipline was maintained. Many of those with most experience held that there should be no discharge from the Army during war-time on account of functional disturbances.

Dr. C. S. MYERS, referring to the treatment of war neurosis in the field, stressed the importance of a man being seen by a specialist immediately he was sent away from the fighting line. There should be specialists at the clearing stations to differentiate between cases which would be curable in two or three weeks and the severe cases which required evacuation to the base hospital, where again there should be a specialist to decide whether the cases should be sent to England or not. His own experience had been that where there was dissociation of any kind, either exhibited physically, as in hysterical paralysis, or in loss of memory, immediate treatment was of the utmost importance. There were no certain tests of temperament and character at the present time, and it was very desirable that further research should be carried out on the subject. Major-General H. A. EMERSON (Director of Hygiene, War Office) said that the subject of examining recruits was receiving consideration, and an attempt was being made to evolve a system which would give a reasonable rate of examination. At such an examination men would only be marked unfit if definitely so; those about whom there was any doubt would be marked as temporarily unfit and reserved for observation.

Potential War Neurotics

Dr. W. R. D. FAIRBAIRN (Edinburgh) said that the training period should be used for the elimination of potential as well as overt neurotics, and the situation would be most practicably met by a staff of visiting psychiatrists being allotted to each training area. The elimination of potential war neurotics would be best secured if every recruit received a psychiatric examination, but such an arrangement would be rendered impracticable by the insufficient number of psychiatrists, so it would be necessary to select the recruits for the psychiatric examination. The selection could best be made by the visiting psychiatrist receiving a verbal report on each recruit from those best qualified to observe his daily reactions—that is, his immediate superiors—and also a report on his previous nervous history from his family doctor. From those reports the psychiatrist could select the recruits for personal examination. He thought that psychiatric science had reached a stage at which, given adequate data, the psychiatrist ought to be able to eliminate a fair proportion of potential war neurotics from the main body of recruits during the training period.

Major J. BENNETT said that in his experience deliberately attempted simulation was not common in our present peace-time Army, but malingering by affirmation that a condition still remained which in reality no longer existed was more common. Such cases merged gradually into those which were regarded as neurotic, and no sharp line of demarcation could be drawn. The longer the period spent in hospital the more difficult became the problems with which the medical officer was confronted. Intensive efforts to cut down periods spent in hospital must be an important factor in the control and incidence of war neurosis. He felt strongly that there was a risk of increasing the incidence of hysterical mental states in too often acknowledging defeat by classifying such cases as unfit for service. Mental defects associated with hysterical modes of reaction called for invaliding, but other cases required individual consideration.

Effective Service of Neurasthenics

Dr. J. F. E. PRIDEAUX (Ministry of Pensions) said that he had thought it would be interesting to ascertain the effective service of the neurasthenic. He took for comparison the healthy soldier who had been only slightly wounded in the arm or leg. The effective home service of the slightly wounded, healthy soldier was 33.2 months and that of the neurasthenic 32.8 months. With regard to oversea service, the effective service of the slightly wounded, healthy soldier was 17.8 months and that of the neurasthenic 19.6 months. Some neurasthenics did very good service over-seas for four years, while others did only a month or two, and it would be an advantage if that type could be eliminated. He suggested that there should be a closer examination of the trainee, that reports should be made by N.C.O.'s and company officers of any special stress shown during gas practice, gunfire practice, and so on, and also that there should be a longer period of training in any doubtful cases. It had struck him that the greater number of cases had broken down under the age of 20 and over the age of 35, and it would therefore seem that those under 20 should have a longer period of training and those over 35 more frequent periods of rest behind the front line. There was no reason why a more careful examination of the officers should not be carried out, every officer being examined by a neuro-psychiatrist. Instruction with regard to neurasthenia should be given to medical officers, and there should be some improvement in the education of medical students in that respect.

Dr. BERNARD MYERS urged that in doubtful cases in the examination of recruits a further investigation should be made and reports obtained from the school master, the employer, and the family doctor. It was found in the New Zealand Forces during the war that if a man who had broken down could be got back to the line quickly he was usually fit for active service again, but if he got right away and associated with other neurotics his condition became hopeless. Dr. H. B. JEFFS (Department of Pensions and National Health, Canada) said that a

considerable amount of wastage in the Canadian unit during the war was avoided by the establishment of a rest station behind the lines to which men slightly shell-shocked or slightly neurasthenic were sent.

German Experience

Dr. MAYER GROSS (Maudsley Hospital) said that in the German Army during the war there was an increasing amount of war neurosis. At the beginning there was greater choice of men, and those who were maladjusted from the social point of view could be eliminated. It was a very significant fact that in one of the large hospitals in Germany where neurotics were treated it was found that 50 per cent. of those neurotics were former criminals and had a considerable list of convictions. He was doubtful whether there was in existence at the present time a sure test for morale, or courage, or other qualities which were necessary in war time to avoid neurotic breakdown. The best and most reliable method, he thought, was that used in routine psychiatry—namely, an investigation into the life-history of the patient and the obtaining of records from his school and his employer.

With regard to the question of treatment it was found during the last war that it was most inadvisable to send neurotic cases home. In 1916 of 435 war neurotics who had been sent home to special hospitals and had been cured and discharged only twenty-seven went back to the front line, and of those twenty-seven only five did their full service as privates in the front line; all the others went to ammunition factories and so forth. In view of that an effort was made in the German Army to treat neurotics in the base hospitals instead of sending them home.

Dr. L. H. WOOTTON (St. Ebba's Hospital, lately Ewell Colony) stressed the importance of having consultant psychiatrists in the field. During the war he had been acting as a battalion medical officer, but eventually it was discovered that he knew something about psychiatry, and he was asked to see various people who had been accused of cowardice, sleeping on duty, and so forth. He found that cases of dementia praecox were being treated by field punishment No. 1. Nearly all the cases were genuine ones, and ought to have been treated by an expert; the battalion medical officers had no knowledge at all of how to deal with them. He saw a considerable number of cases during the war of men who had been accused of dereliction of duty in the field, for which they could have been shot, and they were genuine psychotics. With regard to the possible shortage of psychiatrists in the next war, if it was a war of terror against both the military and the civilian population, there might be more cases of war neurosis than of war wounds, and it was most important that there should be an adequate supply of properly trained psychiatrists. Badly applied psychiatry could do quite as much harm as badly applied surgery.

Dr. JAMES MACDONALD (Glasgow) thought it should not be difficult for a man of experience to detect the malingerer; there was nearly always something that did not fit properly into the clinical picture. The real difficulty was in segregating the malingerer from the hysterical patient, but the trained psychiatrist and neurologist ought to be able to distinguish between them. It did not follow that when a psychotic had been detected he should be eliminated from the Army; many psychotics could do useful work in the field. With regard to the detection of potential psychotics psychiatry had not yet reached the stage when the psychiatrist could give a definite opinion even after the most careful examination. Laboratory tests helped a little, but they were not by any means a sufficient and reliable guide; the real test was the practical test, when a man came under the actual strain and stress of war. There was an urgent need for more psychiatrists. He suggested that young men should be persuaded to join the Territorial Army, because the great danger lay in the sudden imposition of war conditions upon men who had never had any idea of going to war.

Value of Physical Training

Colonel J. HEATLY-SPENCER (Consulting Physician to the British Army) thought it was desirable that neurotics should be eliminated from the Army, but the question arose as to where they were to be sent in the next war. There might be just as much danger in the areas behind the lines and at home from air raids as there was in the fighting line. Army training aimed at teaching a man self-reliance and responsibility as well as the handling of weapons. He thought it was successful in that aim, but it took some years to make a good soldier, and the difficulty really arose in the civilian population enlisted at short notice. He suggested that the problem ought to be examined on a wider basis and at an earlier stage than that of actual enlistment. He would take as examples two widely differing types: first those men who flocked to any excitement from this country and all over the Empire. They had developed, mainly from an open-air life, a sense of self-reliance and responsibility, a mental resiliency, and a standard of conduct which placed personal bravery before anything else. Such men did not break down. At the other extreme there were the men taken suddenly away from industrial life in England or elsewhere; many of them had had very little opportunity of developing self-reliance and responsibility which would enable them to deal with the unexpected, or with danger when it suddenly confronted them. He did not think they required military training so much as the opportunity to develop themselves, particularly in the physical sphere, and to establish contacts which would enable them to develop self-reliance. In the youth movement, the playing field movement, and other such movements he thought the ultimate solution of the problem of neurasthenia, not only in the Army but also in industrial life, would be found.

The CHAIRMAN, in summing up the discussion, said he thought everyone was agreed as to the need of treatment from the first moment, and that meant that there must be a large supply of psychiatrists available if the problem was to be dealt with in the field as well as at home

At the luncheon, given by Admiral of the Fleet Sir REGINALD TYRWHITT, which followed the conference, it was announced that the Ex-Services Welfare Society proposed to establish a home on the coast for the use of ex-service men in mental hospitals in Great Britain who, in the opinion of the medical superintendents, would benefit by a change of surroundings.

STUDENTSHIPS AND FELLOWSHIPS IN CLINICAL SCIENCE AND EXPERIMENTAL PATHOLOGY

The Medical Research Council invites applications for a second series of Studentships and Fellowships intended to encourage young British medical graduates of special ability and original mind towards becoming investigators in those branches of medical science which are concerned directly with disease as it occurs in human beings. This field of research includes investigations into disease or manifestations of disease in patients, together with experimental work of an immediately relevant kind.

Post-Graduate Studentships

Six post-graduate studentships are offered for medical graduates who have already held house appointments and are strongly inclined to a career in clinical science or experimental pathology. Each selected student will receive an inclusive grant at the rate of £200 per annum, during a period not exceeding twelve months, for personal maintenance while undertaking approved courses of study in this country such as may be regarded as best calculated to advance the student's training in methods of research. This study may include modern languages and such advanced physiological, pathological, and special clinical work under recognized teachers as

may be regarded as forming a suitable preliminary to serious research work to be undertaken later; but the approved course may not include studies of which the purpose is to enable the student to pass further examinations.

Research Fellowships

The Council also offers four research fellowships for candidates of similar qualifications who have already had some experience in the use of research methods. Each Fellowship will be tenable for one year at the ordinary value of £250 per annum, and will be renewable in approved instances at the rate of £300 per anum for a second year. These Fellowships are intended as probationary appointments for research in clinical science or experimental pathology under suitable direction in this country. Research expenses may be provided in addition to stipend.

Applications should be lodged with the Secretary, Medical Research Council, 38, Old Queen Street, London, S.W.1, before October 1, 1937. Forms for the purpose will be supplied on request.

TUBERCULOSIS IN CYPRUS

We have received from the National Association for the Prevention of Tuberculosis the following report of its mission to Cyprus.

A Request for Help

During the year 1935 two members of the Council of the N.A.P.T., Mrs. Pam and Mr. H. A. Baker, visited Cyprus and had their interest aroused by what they were told of the serious ravages of tuberculosis on the island. It was pointed out to them that Cyprus is a poor island, with much to do with its money upon developing essential services; its governing authorities would welcome help and advice from the N.A.P.T. in dealing with the problem of tuberculosis, which hitherto had not been seriously taken in hand.

The request was favourably received by the Council of the N.A.P.T. with the result that an immediate contribution of £100 towards the Cyprus anti-tuberculosis campaign was followed by the promise to send to Cyprus a medical officer and a nurse with special experience of the work of a tuberculosis administration. The officers selected for this duty were Dr. Noel Bardswell, F.R.C.P., and Nurse Jays of the Seamen's Hospital, Greenwich, who has lived in the Near East for many years and speaks Greek, the chief language in Cyprus. The N.A.P.T. officers took up duty in Cyprus on November 1, 1936, and have since then worked in close co-operation with the Public Health Department of the Cyprus Government. Dr. Bardswell has just arrived home on leave, and is making a report to the N.A.P.T. on the work he has so far carried out on the island.

Local Conditions in Cyprus

Cyprus became a Crown Colony during the great war: Britain then took over the country, which centuries of neglect had left in an undeveloped condition. It is still backward and primitive, and not yet ready for a highly developed administration. It is an island of mixed races. Of its population of 365,000, 299,780 are of Greek extraction and 65,220 Turkish. The British population numbers some 600 only, and are most concentrated in the capital, Nicosia. The languages spoken are Greek and Turkish—outside the six chief towns the English language is unknown, and in the towns only a small minority of the people can speak English.

Dr. Bardswell, on arrival, found that while much was to be heard about the Cyprus tuberculosis problem and its seriousness, there was little definite data available. There is as yet no registration of causes of death other than "from natural or unnatural causes." In consequence the Cyprus Government has no idea as to the annual mortality from tuberculosis. Notification of cases of pulmonary tuberculosis was introduced in 1931, but it is most imperfectly observed. The medical authorities think it probable that only one-quarter of the cases are notified. The introduction of an administrative scheme for the control and treatment of tuberculosis was being held up by the absence of definite knowledge as to the incidence of the disease on the island and the degree to which it is disorganizing the life of its people.

First-hand Study of the Problem

Dr. Bardswell, after a preliminary survey, reported these facts to the Council of the N.A.P.T., and advised that as a preliminary to their offering any advice to the Cyprus Government he should tour the island and try to make good the absence of essential information. The N.A.P.T. and the Cyprus Government concurred in the suggestion.

From January 1 to June 1 Dr. Bardswell and Nurse Jays have been wholly occupied in studying the tuberculosis problem at first hand throughout the island. They encountered many difficulties by no means fully anticipated. The chief of these is the question of language. Dr. Bardswell had to make all his inquiries through an interpreter. Fortunately, so far as Greek is concerned, the language spoken by five-sixths of the people, his interpreter was his N.A.P.T. colleague Nurse Jays, who speaks Greek perfectly. But for this Dr. Bardswell's mission would have been most gravely handicapped,

Another difficulty is the extraordinary and unreasonable fear that Cypriots of all classes have of tuberculosis, which results in the concealment of the disease. Such is the fear that many people will not willingly pass a consumptive patient in the street. The stories current on the island as to the ravages of the disease among the peasantry, who form 70 per cent. of the population, and the social and economic distress suffered by the tuberculous people, have for some time caused much concern to the people of Cyprus and its Government.

Preliminary Impressions

The method of inquiry followed by Dr. Bardswell was to visit the towns and villages throughout the island, to examine as many people suffering from tuberculosis as he and Nurse Jays succeeded in getting access to, and to try and estimate the amount of tuberculous infection present in the towns and villages by "tuberculin-testing" the children for evidence of tuberculosis infection.

In the course of his five months' survey Dr. Bardswell examined 600 persons and tested 8,000 children. His detailed results have yet to be worked out. But it can already be stated that the tuberculosis question is not so grave as has so far been the accepted view.

Though the disease is scattered throughout the island, and is calculated to spread as the primitive people are gradually brought under European influence, there is every hope that it will be effectively controlled by appropriate methods. What lines these measures should take will now be a matter for the serious consideration of the N.A.P.T. Council.

The language difficulty, the low standard of civilization of the bulk of the people, the difficulty of access and transport, the lack of personnel with any knowledge of or training in tuberculous work, the poor financial resources of the Cyprus Government, all contribute to render an efficient anti-tuberculosis scheme in Cyprus much more difficult to devise than in Great Britain.

While certain broad principles hold good for every country, details must be decided by their peculiar conditions. This is the aspect of the Cyprus tuberculosis question which the N.A.P.T., with the results of Dr. Bardswell's survey in its hands, will now proceed to consider. Whatever advice it conveys to the Cyprus authorities, the services of Dr. Bardswell and Nurse Jays will again be given to them for a further period to assist in putting their recommendations into execution, the period of office of these two officers having been extended to June, 1938.

The seventeenth report of the Joint Council of the Order of St. John and the British Red Cross Society covers the year 1936. During that period 259 officers, of whom seventy-four were new cases, received assistance from the Auxiliary Hospitals for Officers Department. The majority of these were suffering from tuberculosis.

Nova et Vetera

ORIGINS OF THE HOSPITAL SYSTEM

[FROM A CORRESPONDENT]

In connexion with the report of the Voluntary Hospitals Commission, which was reviewed in the *Journal* of May 8, it may be interesting to look back into the early origin of our modern hospital system.

London Spitals

When the monasteries were suppressed the Mayor and Commonalty of the City of London prayed the King in 1538 that they might from henceforth have "the order, rule, government, and disposition of the hospitals or spitals, commonly called St. Mary's Spital (Bethlem), St. Bartholomew's Spital, St. Thomas's Spital, and the New Abbey at Tower Hill, with the rents, revenues appertaining to the same for the annual relief of the poor, needy, and sick persons." They reminded the King that the three great spitals were

"founded of good devocion by auncyent fathers and endowed with great possessions and rents only for the relyeff comforte and ayde of the poor and indigent people not being hable to help themselffs and not to the mayntenance of preestes chanons and monks casually lyvyng as they have of late doon nothing regarding the myserable people lyeng in the streets offending every clene person passing by the way wt theyre fylthye and nastye savors."

The prayer of the Corporation was granted. The first spital handed over to the civic authorities was St. Bartholomew's. Soon the revenues became too small to meet the outgoings, and to defray the deficiency the Corporation had the power to levy taxes for its support.

In 1548 an Act was passed by the City Council assessing the City Companies in the sum of 500 marks (£333), to be paid annually to St. Bartholomew's Hospital. This levy was resisted by the livery companies in the year 1712, but the hospital authorities took Chancery proceedings, which resulted in a decree in their favour, and this exists to the present day.

An Early Move in Bristol

Outside of London no provision at all for housing the sick poor appears to have existed. In Queen Elizabeth's reign some effort was made by means of a Poor Law to cope with poverty and unemployment; to replace by local authorities the work formerly carried out by the monasteries. But little or nothing was done for the sick or crippled. The civil wars diverted people's attention even from this effort. After the revolution of 1688 and incidentally after the passing of the Act of Toleration in 1689—which is perhaps the real landmark in the current of national progress—men's thoughts turned in other directions. There was a spiritual awakening; a kind of humanity replaced the bitterness of wars and revolution.

The first move to look after the sick and needy was made in Bristol. It is interesting to record that the first hospital to be established in England after the suppression of the monastic hospitals was not a voluntary hospital in the modern sense, but St. Peter's Hospital in Bristol, which was set up by the Bristol Corporation of the Poor immediately after its establishment in 1696.

At the foundation of the Corporation of the Poor and of St. Peter's Hospital it will be found that a compulsory levy or rate was not the sole source of their revenues. Many private citizens, including Dr. Edward Tyson, moved by the contemplation of the state of the poor in their city, gave large donations. Dr. Thomas Dover gave his services gratuitously to the sick in St. Peter's Hospital. So that at the beginning the Poor Law and its hospital linked together rates and charity in a common purse.

Two Illustrations from Abroad

Two illustrations of somewhat similar plans may be taken from abroad. A good many years ago M. Vancauwenberg founded in the North of France a sanatorium for children suffering from surgical tuberculosis. It is now situated in two branches, one at Berck-sur-Mer and one at Zuydcoote, near Dunkirk. At first the undertaking was supported entirely by voluntary contributions. Its success led to its "adoption" by the State. The effects of this "adoption" as explained by M. Vancauwenberg were that the educational side of the sanatorium, including teachers' salaries, was paid for by the State, and various maintenance charges for the children were borne by departments and communes. The committee of management was no longer self-elected, but the State requested the old committee, with M. Vancauwenberg as chairman, to continue in office with the addition of a few new members to represent public authorities.

Since Professor Calmette joined the committee as the representative of the Département du Nord it may be judged that the presence of such "official" nominees to the board of management occasioned no difficulties. According to M. Vancauwenberg the institution was better off in every way after its "adoption," especially in financial respects; for the voluntary contributions increased rather than diminished, there were new payments by the State and local authorities, the "School" was entirely paid for by the State, and the usefulness and efficiency of the institution was greatly increased.

From Cologne another example could be taken. The Evangelische Krankenhaus was a hospital maintained and supported by the Lutheran community of the city. Voluntary contributions came in generously, and the board of management was chosen by the subscribers. Yet there was a basic grant from the city which amounted to a capitation payment for poor patients. This payment was contingent on the hospital being efficiently conducted. Of this efficiency the medical officer of health for Cologne and the Health Committee were the judges, and in order to keep in close touch with the affairs of the hospital one "official" representative of the Health Committee was on the board of management. In this instance there was no curtailment of voluntary contributions because of municipal finance and control.

Some Reflections

These examples of happy uniting of public and voluntary undertakings need to be closely looked into. The plan may prove impracticable on a large scale. It may turn out that charitable and individual effort has led the way and only served to convince the State of an irresistible demand for adequate medical and social services. Our Navy was evolved out of mere gatherings of merchant shipping armed in haste for particular occasions, our Army from bands of noblemen's retainers, and our Post Office from the attempts of private carriers to serve the public needs. Private undertakings will not cover the country with the comprehensive organization which the nation requires. At some point the gaps must be filled by State institutions, and it should not be impossible to preserve the practice of voluntary contributions, just as St. Bartholomew's has preserved it, within the framework of a municipal institution. The correlation and adaptation of two systems may entail inconveniences. Burke's plan must be followed, so that we "balance inconveniences; we give and take; we remit some rights that we may enjoy others; and we choose rather to be happy citizens than subtle disputants."

Reports of Societies

THE SILICOSIS PROBLEM

Another discussion on silicosis, chiefly from the geochemical standpoint, occupied a special meeting of the Institution of Mining and Metallurgy on June 17. Professor H. V. A. Briscoe of the Royal College of Science, with certain colleagues, had collected from a number of mines in Cornwall dust samples suitable for examination in order to determine the number of dust particles per unit volume of air, and their size, distribution, and chemical and mineral composition in the air as breathed by the underground worker. The results of this investigation were presented in a lengthy and important paper, while Dr. A. Brammall in another paper dealt with geochemistry as applied to the problems of silicosis.

Professor Briscoe stated that a rapid survey of some typical dangerous industrial dusts, using samples collected by settlement and natural impairment of dusts in ventilating ducts in mines, showed that in general these were markedly alkaline. It seemed possible that the relatively high local concentration of alkali produced by dusts in such ducts might help to determine the characteristic effects they had on the lung, for example, by assisting in part to the differences between the phenomena of asbestosis and silicosis. Dr. Brammall, after repeating his own lengthy investigations, said that the earlier suggested that certain substances were extracted in the soluble form from dust-free particles by lung fluid, and that these dissolved compounds of which silica was merely one together with most residuals imposed an abnormal burden on a delicate though not exclusively efficient mechanism.

Those who took part in the discussion from the medical point of view counselled the necessity of caution before accepting a geochemical theory to explain silicosis. Dr. E. L. Middleton of the Home Office deprecated at the present stage any deductions being drawn from the experiments and researches presented so far as they applied to the human problem. He found it difficult to fit the facts presented by the geologists in their study of dusts into the clinical experience of silicosis.

Tissue Reactions

Dr. E. J. King of the British Post-Graduate School, speaking as a biochemist, also added his plea that those working on this subject should take care not to fall into the common modern danger of simplifying the problem too far. They would only be deluding themselves, he said, if they thought that the solubility of dusts, even when determined so nicely as in the experiments described by Dr. Brammall, was an adequate explanation of silicosis, which he regarded as an extremely complex biological phenomenon. Dr. King mentioned that he had once injected soluble salicylic acid twice daily into the ears of rabbits over a period of six months. No fibrosis whatsoever was produced, nothing but a small amount of inflammation periodically. A fairly constant supply of soluble silica produced no biological reaction at all analogous to that which followed the introduction of dust. Moreover, as the late Professor Kettle had constantly stressed, there was an infective process at work in silicosis. Such an infective process always accompanied the condition, and perhaps made it possible. Silicosis might not be a tissue reaction primarily to dust but a tissue reaction to an infection which might be modified to a greater or less extent by the accompaniment of dust. Mr. Haynes of St. Bartholomew's Medical School reminded the meeting of the long period during which dust might remain in the lungs, being ultimately passed out by coughing, or "black spit," as it was called. He remembered in 1919 examining a miner's sputum which contained imbedded coal dust, but the man had not been doing a coal miner for had he had any reason to inhale coal dust since his enlistment in 1914. He could not help feeling that the way in which dusts had been extracted from the lungs and subjected to chemical examination in the pursuit of certain of the investigations into silicosis had been somewhat rough. A much kinder way of obtaining the dust would be by bronchial aspiration, whereby the whole of the protein could be got away and the dust left behind. A treatment rather corrosive to the chemical substances might possibly have removed some of the less chemically resistant ones leaving the more resistant, of which silicate was the outstanding example. Thus a slightly unbalanced picture might have been obtained.

INFANT FEEDING

At a meeting of the Edinburgh Obstetrical Society on June 9, with Dr. Peel Ritchie, the president, in the chair, Dr. H. J. Walker read a paper on the modification of cow's milk for infant feeding.

Dr. Walker said that for subsequently the weakness of the infant was relegated to the medical attendant to the care of the nurse, who was given the responsibility of deciding how the infant was to be fed. How an experiment was usually approached in this regard to the infant being breast-fed, but in case of artificial feeding had to be resorted to there at once became a host of problems demanding the attention of all concerned in its welfare. There was not the slightest reason why one should not be able to feed a baby on cow's milk as successfully as on breast milk, provided one knew how to modify the cow's milk to suit the baby's digestion. For this purpose, despite the degree of opinion existing as to the form in which it should be offered to the infant. He spoke from personal experience of cases in which cow's milk would be modified to suit the infant's digestion, and described certain experiments which had recently been carried out in the bacteriological laboratory of the Simpson Memorial Maternity Pavilion, Edinburgh, in an endeavour to determine the relative merits of the various modifications commonly employed.

Experimental Investigation

These experiments were concerned with the clotting effect of rennin on modified milk. It was pointed out that such simple procedures as dilution with water and boiling had the effect of reducing both the size and toughness of the milk curd, and that the addition of sodium citrate had very little advantage over dilution and boiling. Acidification of milk by the addition of lactic acid prevented the formation of large clots and produced a fine granular precipitate. The addition of partially dextrinized starchy foods to milk did not affect the size and consistency of the clots, since on the addition of rennin these were found to be large and tenacious, closely resembling those of raw milk. If fresh cow's milk were to be used for infant feeding it should be diluted with water, boiled, and have added to it sugar and cream in requisite amounts; the addition of starch was undesirable; citrating and acidifying were unnecessary for normal infants. Two varieties of dried cow's milk were selected for comparison with fresh milk. In one case drying had been carried out by the roller process and in the other by the spray process. When rennin was added to milk dried by the roller process a fine precipitate was formed but no true clotting occurred, whereas in milk dried by the spray process clotting did occur, but the individual curds were comparatively small and soft. In both cases, after gentle shaking to simulate peristaltic action, the appearances produced bore a striking resemblance to that of human milk.

Taking all things into consideration the best available substitute for human milk was a good variety of dried milk, the reasons for this opinion being that such milk was safe in that it was free from tubercle bacilli and pathogenic

organisms; its vitamin and iron content was adequate; it was quickly and easily prepared, thereby reducing the possibility of error to a minimum; and it had been made to resemble human milk to an extent which could never be achieved in the average home. Dried milk, however, was apt to be expensive and was, therefore, often beyond the reach of the very homes where its use would be invaluable—namely, the homes of the harassed, overworked mothers, who had neither the time nor the facilities to make cow's milk safe and digestible for their babies. In conclusion, Dr. Wallace emphasized the fact that the perfect substitute for mother's milk did not exist, and that breast-feeding should still be the aim in all cases.

Local News

ENGLAND AND WALES

British Red Cross Society

The Duke of Gloucester presided at the statutory meeting of the council of the British Red Cross Society on June 10 at 14, Grosvenor Crescent, London, S.W. Before the formal business began the Duke presented the Florence Nightingale Medal to Mrs. Maynard Linden Carter, head of the Nursing Section of the League of Red Cross Societies. The Director-General announced that the four-yearly International Red Cross Conference would be held in London in June, 1938. The Society's annual report was received and approved. This report shows continued expansion both of personnel and activity. Considerable progress has been made in the special training and organization of its membership in order to co-operate with the Government in preparation for defence against aerial warfare, and the regulations have been extended to include the enrolment of air raid precautions reserves. The Clinic for Rheumatism in London is now working to its maximum capacity, and gave 154,378 treatments during 1936. The number of calls on the London Blood Transfusion Service amounted to 5,215, another record over any previous year. In order to facilitate experiments in the relief of certain forms of disease by means of oxygen tents the Society provided twelve tents and placed these at the disposal of twelve teaching hospitals in London. The tests carried out proved of great use, and the Society's action encouraged the use of this valuable method of treatment. The Princess Royal, Commandant-in-Chief, reported that over 800 women members attended the V.A.D. training camp this summer at Winchester, where courses of instruction had been provided. On Coronation Day 944 officers and members were on duty in London in co-operation with the St. John Ambulance Brigade, and dealt with 1,428 cases. The total number of certificates and proficiency badges awarded by the Society for first aid in chemical warfare now amounted to 29,079.

Reduction of Out-patient Waiting

A further step towards the reduction of waiting in out-patient departments has been taken by the Out-patient Arrangements Committee of King Edward's Hospital Fund for London by the issue of a memorandum on time-saving methods in connexion with arrival and registration of out-patients, with notes on other early items of procedure. A previous memorandum dealt with hospital out-patient dispensaries. The Out-patient Arrangements Committee, of which Dr. Morley Fletcher is chairman, was set up as a result of the report of a special King's Fund inquiry into out-patient methods. That report gave a brief outline of time-saving suggestions at every stage of out-patient procedure, and recommended that the King's Fund should follow this up in more detail, so as to assist all hospitals to ascertain whether their own waiting time is capable of reduction, and, if so, how to reduce it. The report states that very much has been and can be done by hospitals to reduce waiting by shortening the interval between the time when patients arrive and the time when they see the doctor. Part I deals with these possibilities under such headings as different times of arrival for different patients; group or class appointments; sorting; sifting; general supervision. Part II deals in detail with registration. It describes a system based on the latest improvements in such matters as the number and design of the forms, their use at the registry, at the various departments and at the dispensary, and indexing and filing. Part III gives a list of salient points in a form intended to be of use to a hospital reviewing its procedure. Copies of the memorandum may be obtained from the publishers, Messrs. Geo. Barber and Son, price 1½d. net, post free.

Birmingham Health Congress

About 2,000 people will be in Birmingham for the health congress which is to be held there by the Royal Sanitary Institute from July 12 to 17. It is expected that a record number of delegates will be appointed to attend from Governments and local authorities in all parts of the world. The Earl of Dudley will be installed as president of the Congress on July 12 and will deliver his inaugural address. The congress luncheon will be held at the Grand Hotel on Monday, July 12, at 1 p.m., and the congress dinner at the same place on Thursday, July 15, at 7.45 p.m. The Minister of Health has promised to address a general session on July 13. The comprehensive list of papers to be read includes such subjects as the future of our population, the national fitness campaign, development of the maternity service, care of the pre-school child, housing progress and prospects, slum clearance, roads and public health, and protection of bulk milk. Altogether there will be fifty addresses and papers. At the exhibition in the Bingley Hall manufacturers from all parts of the country will be represented, and there will be exhibits illustrating municipal hygiene and health and comfort in the home.

SCOTLAND

Medical Education

Speaking at Edinburgh on June 17 on the national drive for health and nutrition, Dr. Chalmers Watson said that the Government programme to promote a great national drive in the interests of health, nutrition, and physical education had done little or nothing to secure the interest and co-operation of general practitioners, who ought to be able to play an important part in the Government's scheme. Much had been heard lately about improved national health and increased longevity, but statistical evidence, on which these statements were based, must be interpreted with caution; employers of labour and others interested would do well to note that the Department of Health in its last report revealed the fact that the cost of sick benefit for insured persons last year showed an increase of 10 per cent. over the previous year. Medical education was to-day more closely related to medical treatment than it used to be, but a continuation of this relationship would depend largely upon a progressive attitude on the part of the universities. The Scottish Committee on Health Services had reported last autumn that unless medical training was preventive in outlook many of the committee's recommendations for the development of health policy would be stultified. In 1932 the League of Nations had gone into this matter, and had published several volumes recording the opinions of medical representatives of various countries. Their main conclusions had been that reform had long been called for, but that universities and teaching schools were either unable or unwilling to move in the matter. It had been announced by the medical faculty of Edinburgh University that a

comprehensive series of changes in the curriculum was about to be made to bring medical education more into line with modern requirements, but traditions died hard, and the changes that were necessary would not be easily secured. A more efficient medical curriculum would undoubtedly involve increased expenditure, but that expenditure would be amply repaid by the greater value of an improved curriculum.

Dundee Royal Infirmary

At the annual meeting of governors of Dundee Royal Infirmary on June 14 the report which was submitted showed that the ordinary income for the previous year had amounted to £38,393, which was an increase of £334 upon that of 1935. There had, however, been an increase in expenditure of £1,642, and the deficit on the year's working amounted to £7,527. Mr. David Ayr, the chairman, said that the financial position had caused grave concern and could be improved only by the increased generosity of all subscribers. It was hoped that the public, who valued the work carried on efficiently by voluntary hospitals would show their appreciation by an increase in both contributions and legacies and substantial donations.

Correspondence

Population Investigation Committee

SIR,—We should be grateful if you would give us the opportunity of correcting, in your columns, a misconception which has arisen about one of the activities of the above committee. At present there is little accurate information available as to the amount of physical and sterile marriage in this country; we are still in doubt as to whether this is increasing or decreasing, and as to the part which it plays in the decline in fertility. With the object of obtaining accurate data on this and other aspects of the problem of fertility our committee has prepared a questionnaire of which very misleading accounts have been published in the Press.

We should like to point out (1) that the questionnaire has been produced on the sole initiative of our committee, and that neither the Ministry of Health, the General Register Office, nor any other organization is in any way responsible for it, and (2) that it will not be sent direct to parents or other members of the public. We are not yet in a position to give full particulars of the procedure by which we hope to obtain the desired information.—We are, etc.,

HARDLEY HOLLAND.
C. P. BLACKER.

London, S.W.1, June 24

The Age Incidence and Sex Incidence of Milk-borne Typhoid

SIR,—An interesting comparison may be made of the figures for the Bournemouth epidemic given by Professor R. M. Picken (*Journal*, June 19, p. 1284), and those recorded by Dr. R. W. Johnstone (1910)[1] for the Folkestone Urban District during the fourteen years 1896–1909. A total of 357 cases of typhoid fever occurred in that period, and of these 206 were traced to milk infected by one individual, who was eventually proved to be a typhoid carrier. Among the milk-infected cases children under 15 numbered seventy-eight, or 37.9 per cent., while among those presumably infected in other ways the percentage of children under 15 was 27.5.

In the age groups over 15 the sex ratio in the milk-infected patients was 100 males to 220 females, and in the others 100 males to 105 females. As the proportion of males to females over the age of 15 in Folkestone at the census of 1901 was 100 to 151, the contrast between the numbers in the milk-infected group as compared with the other is striking. It is noteworthy that at Bournemouth, where the milk was apparently infected for about a month, and at Folkestone, where infection from a single source persisted for fourteen years, the incidence on adult females should have increased so greatly.

Study of such data as are available suggests that, especially, speaking, milk-borne infection falls more heavily on women and children, but there are so many exceptions to this rule that the observations are of little practical value when applied to the investigation of any given epidemic. Most of us will agree with Professor Picken's view that "this method of different along the lines of epidemiology is in practice quite useless" (Lancet, etc.,

Bournemouth, June 21 LEON ERRINGTON.

Technique in Knee-joint Operations

SIR,—I was surprised to read Mr. A. S. Blundell Barker's comments on the technique employed by Mr. Eric Lloyd in operations on the knee-joint (*Journal*, June 12, p. 1259). But knowledge of pronation has always existed that although the surface of the skin may be rendered sterile, the deeper tissues may still harbour organisms. For many years it has been my practice to swab the deeper tissues of the skin exposed by the direct approach of the knee-joint with a weak solution of iodine, and I have never known this to cause any harm. I have also found that the addition of a few drops of iodine to the irrigating fluid used during the operation has always been beneficial.

Surely success is the best test to prove that these elements the possibility of infection from the deeper tissues of the skin by skipping from the edges? Does Mr. Barker believe that all such tissues should be swabbed with blood no organisms can pass? This question raises a practical point in technique which applies to all branches of surgery, and one which I had intended to make the subject of a special communication to the *Journal*. I am grateful to Mr. Eric Lloyd for returning to it in his address on "Technique in Operations on the Knee-joint." I am, etc.,

Birmingham, June 20 NATHANIEL DEAN.

When to Operate in Appendicitis

SIR,—I should be glad to know what is the general opinion of surgeons on the question of cases of inflamed appendix with abscess formation. To-day I sent a case of this type into hospital.

Briefly, the history, which varies little in these illnesses, is one of a six-day illness commencing with pain in the right iliac fossa six days ago. The patient had no gastric symptoms till the third day, when he was sick and continued so till a simple bismuth mixture allayed matters within twenty-four hours. His temperature began to rise, and varied between 99.8° and 100°; the bowels moved daily without any aperient. To-day, the sixth day, a palpable lump in the appendix area was evident; he had anorexia; the pain still remained as it had done, but the tenderness was much more marked. The diagnosis was obvious.

His wife came to see me four hours after his admission to hospital with the report that the surgeon had decided not to operate. I was surprised to hear this; and to placate her and to ensure that the patient's condition had been investigated I 'phoned the hospital and spoke to the medical officer

[1] Johnstone, R. W. (1910). *Reports to the Local Government Board on Public Health and Medical Subjects*, New Series, No. 41.

in charge of the wards. He agreed with the diagnosis, but said the custom in that hospital was to wait, leaving the question of operation to some future time, and meanwhile keeping a close eye on the patient's condition.

Of course, one of three things will happen: (1) Absorption of the inflammatory products with resultant adhesions. (2) A circumscribed abscess cavity with a gangrenous appendix floating in the products of its own decomposition. (3) Extension of the inflammatory process with peritonitis, followed by immediate and grave operation.

My reason for writing is to indicate that there are different schools of opinion on the correct procedure. I have known similar cases, sent to different hospitals, and still have vivid memories of the trenchant and almost libellous comments of two surgeons on the characters and qualifications of the doctors who had attended and delayed sending the patients into hospital. My own Edinburgh training was directed to early and immediate operation. It is not for me to go into the arguments pro and con in this matter. But in view of the evidently divergent opinions held I should like an authoritative statement as to what the majority of surgeons practise in these types of appendix cases.—I am, etc.,

Bedfont, Middlesex, June 24. J. HEPBURN.

"What is Osteopathy?"

SIR,—I am glad Dr. Kelman Macdonald has made it quite clear (*Journal*, June 19, p. 1284) that he and I do not agree as to the interpretation of osteopathic findings—that was my hope when I answered his letter. But I am in entire agreement with him when he says that "the physiological circulatory conditions prevailing around a joint and the pathological findings supervening in joint injury are facts which are not altered by what interpretation" I put on them or by what he reads into them. I have never at any time suggested otherwise, and it is difficult to understand why he elects to answer my letter with such an implication. I only claim that my interpretation is based on physiological and pathological findings which in the main are accepted by almost the entire scientific world, and his is based on osteopathic pathology, which is not.—I am, etc.,

London, W.1, June 22. MORTON SMART.

Ionization for Hay Fever

SIR,—Although feeling much sympathy for my friend Mr. Vlasto on his non-success in treatment of hay fever by zinc ionization, I am unable to explain it. The technique is simple for a rhinologist, although I can quite believe that electrotherapeutists who are not familiar with the anatomy of the nose might have many failures.

On the other hand, in ionization for suppurative otitis media the selection of cases and the technique are of the greatest importance. For attic cases with a tiny perforation the method is quite useless, whereas for cases in which the tympanum is accessible through a good-sized perforation in the lower part of the membrane zinc ionization with proper technique gives the most dramatic success.

With regard to my own experience of ionization for "hay fever," last year I treated seventeen private cases. Of these, two were done rather late in the season, and although they cleared up satisfactorily they might have been nearing the end of their seasonal misery; so I will not include them. Of the other fifteen, two were free from symptoms after one ionization, two were almost free; nine cases were nearly symptom-free after two ionizations, and were free after a third. One patient was very little better, and one showed no improvement. The results of my hospital cases were very similar.

In my experience zinc ionization gives better results than any other method. An objection to it is that it is an empirical treatment directed to the nose. We do not know how it acts. For tympanic sepsis, however, this treatment is not empirical. The ionization produces a coagulation necrosis of the organisms in the middle ear, and thus sterilizes the cavity. For this reason the applications of this treatment in the nose and ear should be carefully discriminated and their results not confused.

Vasomotor rhinitis does not yield many successes. One gets an occasional very pleasing cure from ionization, but not the high proportion of cures that one gets in hay fever.—I am, etc.,

Guildford, June 26. T. B. JOBSON.

SIR,—Mr. Michael Vlasto questions the value of ionization in hay fever. I think the chief value of zinc ionization of the nasal mucosa is to reduce the sensitiveness of the mucous membrane in all those complaints which give rise to paroxysmal sneezing, whether from hypersensitiveness to pollen or to any of the air-borne dusts, or from bacterial causes. At times this may be sufficient to relieve the symptoms. But in hay fever the whole of the patient, every square inch of skin, every drop of blood, is hypersensitive to the pollen and can be proved to be hypersensitive by the Prausnitz-Kustner reaction (passive transfer and the dermal reactions). This being so, it would seem fatuous to rely simply upon treatment of the nose in a complaint in which every cell of the body is sensitized.

In treating those afflicted by immoderate sneezing the first maxim is to discover the cause by the dermal reactions. Next, to desensitize the patient with the protein that may be at fault—pollen, horsehair, orris root, etc. If the nasal mucosa is inordinately sensitive to a probe and the sneezing reflex easily produced with redness of the eyes, then ionization or cauterization is of great value, always allowing that the possibility of the irritation being due to a microbic infection has been ruled out.—I am, etc.,

London, W.1, June 28. FRANK COKE.

SIR,—Mr. Vlasto, in his letter in the last issue of the *Journal*, asks whether others shared his experience with intranasal ionization for so-called hay fever.

In our special ionization clinic at the Chest Hospital, Margaret Street, over 800 patients have received treatment during the last three months, mainly for seasonal rhinitis. It is difficult to assess the relative proportions of cases which suffer from rhinorrhoea precipitated by pollen and those in which the rhinorrhoea is produced by other factors, such as metabolic disorders, climatic influences, psychopathic vasomotor disturbances, etc. In our experience a large proportion of the cases benefit from ionization. There is no doubt that the therapeutic effect of the ionization largely depends on the technique employed.

Twelve years' experience of this special type of treatment and the advantage of examining and observing such a large number of cases this season have enabled me to obtain improved results by modifying the technique. I intend as soon as possible to publish in detail the technique used at our clinic and to give complete statistical results of this treatment. I hope that others will do the same so that the value of this treatment can be satisfactorily assessed.—I am, etc.,

London, W.1, June 28. PHILIP FRANKLIN, F.R.C.S.

Animal Pathology: Puerperal Infection

SIR,—I was very pleased to read the letter of Dr. T. Hare on the subject of animal pathology in the *Journal* of June 12 (p. 1229). We must all hope with him that some day an institute of comparative pathology will be founded, where "the diseases of animals can be studied for the service of medicine," for until medicine works in closer co-operation with veterinary science and agriculture its progress will be slower than it need be. The further study of diseases in animals will undoubtedly throw light on the pathology of obscure diseases in man. I should like to state here an interesting problem bearing on this point.

Some time ago my fox terrier, aged 10, had her fourth or fifth litter of puppies; as we had another dog she was confined in her kennel inside the garage. After a difficult labour, in which I had to assist her, two pups were born dead, and one survived. The two dead pups were removed and buried, the placenta and debris swept out of the garage on to some grass outside. On the second day she was very ill, would not take her food, shivered, and was very restless and anxious to get out. The next day her condition was worse; she was weaker, would take no food, and her restlessness and anxiety to get out was so great that, in spite of her weakness, I decided to let her do so. To my astonishment she started searching in the grass outside the garage, and when she had found the placenta immediately ate it and then went straight back to her kennel. Next day she was much better, and in a few days quite well again.

Those are the facts of the case, and I was fortunate to be able to observe them so closely. It is well known that certain animals always eat the placenta immediately after birth, and farmers say the animals will not settle down properly until they have done so. It is also well known that other mammals do not eat the placenta; why is there this difference? I always presumed that the animal ate its placenta because it was there and looked like something to eat; but here was a dog whose placenta was removed, who was becoming very ill, and was making frantic efforts to get out with the sole object of consuming it, and who after doing so made a rapid recovery. The only conclusion I can come to is that the placenta contains something which is vitally necessary to the animal at that particular time, while those animals which do not eat it absorb *in utero* the necessary substances, which are probably in the nature of antibodies or antitoxins to streptococcal infections.

If this is so it will help to elucidate the puzzling problem of puerperal infections in women. As is well known there are two types of parturient women, those who show no sign of puerperal infection whatever the environment or operative intervention and those who develop puerperal fever under the very best possible conditions and even when no vaginal examinations are made. It is important to remember that in subsequent confinements under precisely similar conditions the results may be reversed, and so this can only be due to some state in the woman herself. The whole question is, What gives immunity or lack of it?

My idea is that most women, in the last few weeks of pregnancy, absorb certain substances from the placenta which are antitoxins. In other women, or in the same woman at another time, there is failure to absorb these substances in sufficient quantities, and so they become an easy prey to infection. These "non-protected" patients require injections of placental extract during the last two or three weeks before the confinement to replace this deficiency. This suggestion has been strengthened by the reports that recently, both in England and America, placental extract has been used to immunize children against measles and scarlet fever.

The only other question that arises is whether it is possible to tell definitely in the last few weeks of pregnancy whether a woman has this "protection" or not. I suggest the application of the Dick test; if a positive reaction occurs showing there is no antitoxin circulating in the blood the injection of placental extract should begin at once, and should continue until the test becomes negative, or even during the first week of the puerperium.

Perhaps Dr. Hare would be able to carry out experiments to confirm or disprove these ideas at the Research Laboratories of the Veterinary College. I should be extremely interested to hear the results of any such investigation.—I am, etc.,

Isle of Anglesey, June 21. J. L. MOIR.

Maternal Mortality and Sepsis

SIR,—I am sorry for Sir Kingsley Wood. In your leading article of June 19 you suggest that the Minister has offered only the second best where the best is called for. He has had to depend on his medical officers, who by direction have furnished him with a report on an investigation into maternal mortality. I can only imagine Sir Kingsley Wood's feelings when he finds that report differing little in essential recommendations from many which have gone before it.

The most important factor concerned in the maternal death rate is septic infection. I will limit my remarks to this one cause. A crop of excuses has sprung up lately to account for the sustained high incidence in mortality rates. The latest refers to the alleged increase in the number of miscarriages. Why are they so prone to become septic? I surmise that most of them are performed by persons who understand the risk they run when a case goes wrong and they are well acquainted with modern methods of asepsis. Surely there must be something wrong with the modern method.

Other excuses are set out in detail, such as inadequate training, insufficient ante-natal care, and, best of all, the lack of the advice and direction of specialists. When we know that the worst figures are supplied from institutions in which specialists walk which way can we turn? Again, I have heard specialists of high standing discount the claims of slums for proverbial immunity. As the figures from these quarters, or rather the registered births, are included in the domiciliary class, I am not convinced that the immunity does not exist; in fact, I believe that the immunity of the slum woman is due to her immunity from interference by a medical attendant. When we read of the Aberdeen report commending a maternity organization in which midwives should conduct all normal deliveries, I feel that I am in good company. As this recommendation struck a severe blow at family practice, it has been toned down somewhat in the latest reports, and no wonder. To me it is the greatest declaration of defeat and failure that I have known the medical profession to make.

Now let me shed a little light. In the Prefatory Note to the latest report to the Minister of Health by the Chief Medical Officer, figures are quoted from the old Edinburgh Maternity Hospital (1823-44) showing a mortality of 19 per 1,000 due mainly to puerperal sepsis. How we have improved! I will quote some figures too. The figures I quote refer not to a mere 3,906 deliveries, but to upwards of 10,000 recorded by Collins about one

hundred years earlier, in which there was a mortality of 0.53 per cent., *not one of which was due to sepsis.* Collins painted the walls, floors and bedsteads, and soaked the linen, his hands and instruments with a solution of chloride of lime. Hence the miracle. He was thus the first obstetrician to use the antiseptic method, and crude as it was it was effective. Need I declare myself a disciple of Lister? So I can boast that sepsis has no terrors for me. And so I repeat, I am sorry for Sir Kingsley Wood. —I am, etc.,

A. C. F. HALFORD, M.D., F.R.A.C.S.

London, June 24.

The Second Best—in Housing

SIR,—I was glad to see your criticism of the policies pursued by the Ministry of Health in the various spheres of housing, maternity, ophthalmic benefit, clinics, and occupation—all subjects of vital national concern in which all general medical practitioners must be interested. My only criticism is that the Ministry is "let off" too mildly. The mere presentation of figures does not reveal the truth. The history of the National Government's actions in regard to the housing problem is one of lamentable failure. In 1931 it cut down housing expenditure. In 1932 the Wheatley subsidy was stopped, and in 1933 it discouraged building even without a subsidy. In 1933 the Rent Restriction Act abolished rent control of middle-class housing, and so there was a rush of speculative builders. *This Act fixed 1938 for the rent control of workers' houses. In 1934 the Government guaranteed* part of the mortgages for building by private enterprise and the rich building societies! Thus it made a new situation profitable to profiteers in spite of the fact that the Minister of Health (Sir Hilton Young, now Lord Kennet) admitted the fact known to all that there was a great shortage of houses *to let* for the lower-paid workers. This gave expansion to the less satisfactory building by speculative builders for the middle classes as that for the lower-paid workers became less a commercial proposition. Public discontent at this policy forced the Government to do something, and that something showed no vision—namely, the Housing Act of 1935, or as some people have termed it the "overcrowding" Act! The main points of this Act are that it defines "overcrowding," compels a survey *on the definition;* after January 1, 1937, makes "overcrowding" (as defined) an offence; reintroduces a subsidy; and, mark, alters the basis of compensation to land and property owners. The definition of "overcrowding" is the weakest link and *real* overcrowding slips through it. The definition sets up no standard of *separate* living accommodation, which the London survey, the Merseyside survey, or the census of 1931 adopted. The result is that the severe (or real) overcrowding is untouched by the Act, and the so-called figures presented as to its existence and amelioration are mere eye-wash. Many anomalies as to the constitution of a family in a given area making for "overcrowding" could be given. Children under 10 years are counted half an adult and those under 1 year are not counted at all. The overcrowding survey of England and Wales revealed 341,554 families being "overcrowded" by the definition in the Act, 283,844 on the verge of it, and 623,429 families who escape the definition by *half a unit!* Yet the Minister of Health wants to know why some women won't have babies. The general practitioner could give him the correct reply.—I am, etc.,

A. G. NEWELL, M.D., D.P.H.

Ilford, June 21.

Courses in Individual Psychology

SIR,—As a consequence of the sudden death of Professor Adler at Aberdeen on May 28 it has become necessary to remodel the programme of lectures and vacation courses in individual psychology arranged for this summer.

Dr. Alexandra Adler, Professor Adler's daughter and herself a brilliant exponent of individual psychology, has very courageously undertaken to carry out, as far as possible, the programme arranged for her father. Certain adjustments and cancellations have, however, been necessary. The programme is now as follows: lecture course, non-resident, in the British Medical Association Hall, Edinburgh, June 21 to July 2; vacation course at University Hall, Liverpool, July 7 to 12; vacation course at Bishop Otter College, Chichester, Sussex, July 17 to 26.

We, the undersigned, being convinced of the great value of individual psychology in throwing light on the fundamental problems of human life in an age of great perplexity, would appeal to the medical and teaching professions, and the Church and parents especially for as large a measure of support as possible for these courses. This would be the finest tribute that could be paid to the memory of a great benefactor of the human race, who devoted his life to freeing men and women from the burdens of misconception and misunderstanding which lie so heavily upon the human family.

We wish to take this opportunity of thanking the University and City of Aberdeen for having done everything in their power to honour the memory of Professor Adler by arranging an official funeral service in the chapel of King's College on June 2.—We are, etc.,

NINA HAMILTON AND BRANDON.
ALBERT LIVERPOOL.
ISABEL MARGESSON.
ALFRED BEIT.
PHYLLIS BOTTOME.
IAN L. FLEMING.
ELIZABETH HOARE,
Chairman, Adler Vacation Courses.

London, W.8, June 21.

Pulmonary Embolism in an Infant

SIR,—The following notes on a case of pulmonary embolism in an infant of 7 months may be worthy of publication, since this condition is rarely found under the age of 20.

A healthy child aged 7 months was admitted to the Peterborough and District Memorial Hospital on May 26, 1937, under the care of Dr. E. A. Holmes, for the radical cure of a right inguinal hernia, and the operation was performed under ether on the following day.

The wound healed well, and subsequent progress was satisfactory until the ninth day after operation, when the temperature at 5 p.m. was found to be 103° F., with a pulse rate of 130, although the patient otherwise appeared comfortable. At 9.15 that evening he suddenly became very collapsed and cyanosed, with distressing dyspnoea. Respirations were 70 a minute, and the pulse was almost imperceptible. The child's colour improved with the administration of oxygen and stimulants, but the orthopnoea continued, and death occurred in about forty minutes. At the necropsy a long coiled thrombus occupying the left branch of the pulmonary artery was found.

I am indebted to Dr. Holmes for permission to record this case.—I am, etc.,

H. W. CHADFIELD, M.R.C.S.

Peterborough and District Memorial Hospital, June 14.

Medico-Legal

ATTACK BY MENTAL DEFECTIVE

We noted in these columns (May 1, p. 944) the hearing of an appeal against an application by Mrs. Bertha Holgate and her husband, William Rennie Holgate, for leave to bring an action against the Lancashire Mental Hospitals Board, and Dr. F. A. Gill, the superintendent, and Dr. G. S. Robinson, the deputy superintendent, of the Calderstones Institution, a home for mental defectives maintained by the Board. The court gave permission, its decision was upheld on appeal, and the action was tried at Liverpool Assizes on June 10 before Mr. Justice Lewis and a jury.

The facts were not in dispute: a moral defective named John Lawson had been several times convicted of criminal violence, and had for some years been confined at Rampton, a State institution. He was transferred to Calderstones as considerably improved, and after a time was released on licence under the personal supervision of his brother. The licence was signed by the deputy superintendent with the consent of two members of the committee of management, and was renewed. While out on his second period he called at the home of the Holgates, and when Mrs. Holgate had her back to him he attacked her savagely with a billet of wood, inflicting very severe injuries on her. He was convicted at the assizes and sent to a criminal lunatic asylum.[1] Mrs. Holgate and her husband brought an action against the Joint Board and the medical men for negligence in licensing Lawson. Mr. Thomas Burke, a member of the Board, said that when the managing committee had agreed to license Lawson, the patient's brother had assured them that he would have Lawson under his personal supervision. Lawson's condition had improved so far, and he had shown no violent tendencies for so long, that it was considered safe to allow him out for a month. There was in any case nothing to prevent an inmate of Calderstones from walking out of the grounds. Miss M. L. K. Jones, another member of the committee, said that she had been present when the committee renewed Lawson's licence for his second period of absence on the assurance that his conduct during the first period had been satisfactory. Cross-examined, she said that she had not known that Lawson had been convicted of a series of savage and criminal offences. When the licence had been renewed the committee had not had his dossier before them, but it would have been before the committee when it originally granted leave of absence.

Dr. Gill said that he had left Dr. Robertson in charge while he was on official leave. He knew that Lawson's brother was a respectable working man, but had not appreciated that the house was only in charge of a daughter during the day. Dr. Robertson said that at the time he signed the certificates for Lawson's leave he believed that to do so was quite safe. It was his duty, according to the terms of his appointment, to sign the certificates. To give mental defectives on licence official supervision would be a tremendous task. Dr. Gill had never been consulted about Lawson's leave. The jury found that the Joint Board and both medical officers had been guilty of negligence in allowing Lawson to go out on licence, and awarded Mr. Holgate £708, including £208 out-of-pocket expenses, and Mrs. Holgate £3,500.

From the reports in the *Times* and the *Liverpool Daily Post*, to which we are indebted for the foregoing account of the hearing, it appears that Dr. Robertson, while acting as superintendent in Dr. Gill's place and with the consent of two members of the responsible committee, licensed Lawson to go out under supervision, for the efficacy of which he had only the word of Lawson's brother, knowing Lawson's record and mental constitution. Accommodation in mental institutions is very limited, and every local authority naturally wishes to let out on licence as many patients as it safely can. The judgement of its officers is very rarely at fault. Sir Patrick Hastings, K.C., who conducted the case for Mr. and Mrs. Holgate, maintained that only the superintendent could sign a licence, and that Dr. Robertson could not do so in his place. As this point was not specifically dealt with in the jury's finding it remains undecided, but as a matter of practice an institution would be in an impossible position if it were not permitted to appoint an officer to act as superintendent during the substantive superintendent's period of leave. The finding seems to have been very hard on Dr. Gill, for he was apparently never consulted about Lawson's leave and did not even know that the licence had been extended, though he granted it originally. As Dr. Gill collapsed while giving evidence, and was not therefore able to complete his testimony, certain aspects of his responsibility could not be properly investigated by Sir Patrick Hastings. The case, however, seems to fall into the category in which *res ipsa loquitur*—the event speaks for itself. It is settled law that if a thing in the keeping of A causes damage to the person or property of another in circumstances which suggest negligence unless they are explained away, A will have to pay damages unless he can give a satisfactory explanation. The jury here were not satisfied that the Board and its medical officers had done their best to ensure that Lawson could be safely let out. In future committees managing institutions for mental defectives and persons of unsound mind will have to realize that they license at their peril patients with a record of violent conduct.

[1] *British Medical Journal*, 1936, 2, 1010.

DENTAL PRACTICE BY MEDICAL MEN

When dental practice was regulated by the Dentists Act, 1921, the right of medical men to practise all kinds of medicine and surgery was preserved by Section 1 (3) (*a*), which lays down that nothing in the section shall prevent the practice of dentistry by a registered medical practitioner. A number of doctors, though probably not very many, practise dentistry by virtue of their medical qualifications, though they are not on the *Dentists Register*. They may be surprised to learn that, though there is nothing in law to prevent them practising dentistry, they are not recognized as dentists under the National Health Insurance Acts, and cannot receive pay for dental services to insured persons under the Acts and Regulations.

This rule was settled by Mr. Justice Simonds in the Chancery Division on June 18, in an action in which Dr. C. A. Bynoe asked him to grant an injunction against the General Federation of Trade Unions Approved Society to prevent them from writing or saying that he was not entitled to give dental services and receive payment under the National Health Insurance Acts, 1924–8, or the Dental Benefit Regulations, 1930, Art. 21 (1). Dr. Bynoe, who is on the *Medical Register* but not on the *Dentists Register*, treated a member of this approved society in February, 1935, and sent in a dental letter with an account for £1 12s. 6d. The society did not pay this amount, but on February 6, 1935, wrote to the patient saying that they had received the estimate but were unable to pay the charges or deal with the dental letter as Dr. Bynoe's name was not on the *Dentists Register*; they suggested that the patient should obtain an estimate from another dentist. Dr. Bynoe maintained that they implied by these words that he was not qualified to give dental services or to receive payment for them from the society.

The learned judge explained in his judgement that the National Health Insurance Act, 1924, s. 75, allowed societies to distribute additional benefit when they had a certified disposable surplus. The amending Act of 1928, s. 16 (3) allows regulations to be made for the administration of schemes provided that they do not restrict the right of any insured person to obtain treatment from any practitioner with whom the society has made arrangements. The Dental Benefit Regulations, 1930, Art. 2, define "dentist" as a person on the *Dentists Register*. Art. 21 provides that a member can obtain dental treatment from any dentist who is prepared to provide it for a certain fee. The learned judge therefore found it

quite clear that Dr. Bynoe was not entitled to give treatment under the regulations and receive payment from the approved society for it, for he was not a person with whom arrangements had been made to give such treatment in accordance with the regulations. He remarked that, while there might be persons who, though not on the *Dentists Register*, were quite competent to give dental treatment, he could quite understand the Minister of Health confining the right to give dental treatment under the Acts to persons on the *Dentists Register*.

ACKNOWLEDGEMENT BY SIGNAL

A testator may validly execute a will by directing someone else to sign it in his presence. The law requires, however, that the testator shall "acknowledge" the signature—that is, shall do something to show the witnesses that he understands that the other person is signing for him. When the will is proved the court will ask for evidence that the signature was made in the presence of the testator and by his direction and that he acknowledged it. The acknowledgement need not even be verbal, and sometimes indeed a patient near death is too weak to speak. He may then indicate his acknowledgement by any sign so long as its meaning is unmistakable. Recently the President of the Probate Division, Sir F. Boyd Merriman, pronounced for the will of a woman whose doctor signed it for her in the presence of witnesses. She had almost lost the use of her right hand, and at her request the doctor read out the contents of the will to her and asked her to squeeze his hand if she approved it and wanted him to sign it on her behalf. She squeezed his hand accordingly and two witnesses attested the signature. She died about three weeks later. The short report, for which we are indebted to the *Times* of June 22, does not state why the testatrix did not acknowledge the signature verbally. At all events the action for probate was undefended and the validity of the acknowledgement was not questioned.

Obituary

We regret to record the death on June 19 in London of Dr. MURDOCH MACKINNON, formerly of Nairobi, after two days' illness. Dr. MacKinnon received his medical education in Edinburgh and King's College, London. He graduated M.B., Ch.B.Ed. in 1905, and proceeded M.D. three years later. In 1911, after serving as casualty physician at St. Mary's Hospital, he obtained the diploma D.P.H.Oxon. He had conducted a private practice in Nairobi, Kenya Colony, for twenty-two years, and had been medical officer to the Government school for eighteen years. He took advantage of the facilities for research thus made available to him, and in 1923 published in the *Journal of Tropical Medicine and Hygiene* an account of the influence of education on the physical and mental development of European children in the highlands of Kenya; this attracted considerable attention in view of the practical questions involved and of the value of the statistical comparison he made between children educated at home and abroad. Another article by him was published in 1929 in the *Kenya and East African Medical Journal*, and dealt with rheumatic fever and chorea in that country. Dr. MacKinnon joined the British Medical Association in 1909, and was president of the Kenya Branch in 1926–7 and again in 1935. In the last-named year he returned to England, and had latterly been in practice at Twickenham.

The death occurred at Alloa on June 21 of Dr. TUACH MACKENZIE, who had just retired from the post of physician-superintendent of Dundee Mental Hospital. William Tuach Mackenzie was born in Ross-shire in 1871, and after taking a medical course at Aberdeen University graduated M.B., Ch.B. in 1898, proceeding to the degree of M.D. in 1903, when he submitted a thesis on acromegaly. After holding resident posts in the Aberdeen Royal Infirmary and the Rotunda Hospital, Dublin, he was appointed to the charge of pauper lunatics in Giggleswick Union, West Riding, Yorkshire. In 1899 he was appointed deputy-superintendent of Dundee Mental Hospital, and four years later succeeded the late Dr. James Rorie as physician-superintendent of this institution, a post which he held until shortly before his death. He was also lecturer in mental diseases at St. Andrews University, and was a member of the British Medical Association and of the Royal Medico-Psychological Association. In his earlier days Dr. Tuach Mackenzie took much interest in athletics, having been as a student a member of the Aberdeen University XV and swimming champion of the University for three successive years. He was also a member of the Royal and Ancient Golf Club, St. Andrews, for twenty years. He joined the British Medical Association nearly twenty-five years ago.

In the death of PAUL IEUAN WATKIN, M.A., M.R.C.S., L.R.C.P., on June 20, the Stratford Division of the British Medical Association has lost a consistent and tireless worker, an inspiring personality, and a true friend. Graduating from Christ Church, Oxford, he became lecturer in physics at St. Thomas's Hospital, later proceeding to his medical diplomas, for which he studied at the London Hospital. Some thirty years ago he settled in practice in Canning Town, and worked there steadily till his death, becoming a figure well beloved in all his professional and social work. Professionally Dr. Watkin's chief interest was in dermatology; this found expression in his devoted work at St. Mary's Hospital, Plaistow, where he became physician in charge of the skin department. Socially his interests were profound and varied. In his undergraduate days at Oxford he became a resident at the Mansfield House Settlement, beginning thus an active association which lasted till his death. From 1915 onwards he represented the West Ham Borough Council on the West Ham Insurance Committee, and later was a co-opted member of the maternity and child welfare committee of the council. For many years a member of the Executive Committee of the Stratford Division, he became chairman of the Division for two years, starting in 1933. His participation in local affairs of the Association was regular, persistent, and always valuable. Broad in outlook and culture, jovial yet severe and well-balanced, kindly to all whatever their standing, Paul Watkin was one of our "elder statesmen." He can receive no higher tribute than that paid by a doctor-patient of his to the writer when he heard of this death: "Well, one of the landmarks of West Ham has gone."

The Rochdale Division of the British Medical Association has sustained a great loss by the death of Dr. SAMUEL WILSON, chairman of the Division 1936–7. To the deep regret of the members illness prevented Wilson from presiding over meetings of the Division after July of last year. In September he was compelled to relinquish his work, and he died on May 29 in an ambulance while on his way home to Rochdale from his seaside bungalow in North Wales, where he had been staying for some time. Wilson was born at Maybole, Ayrshire, and was a student at Glasgow University, taking the degrees of M.A. and, in 1907, M.B., Ch.B. He held resident posts at Belvedere and Ruchill Fever Hospitals, Glasgow, and in 1908 came as house-surgeon to Rochdale Infirmary. After holding this post for about eighteen months he became assistant to Dr. Wallace of Rochdale, taking the practice over shortly afterwards on the retirement of his principal. For over a quarter of a century he carried on a very large private and panel practice single-handed, except for a period of three years from 1923, when a nephew assisted him. The numbers on his panel kept at the maximum

figure! Consequently Wilson's leisure time was scanty. When work permitted he enjoyed a game of golf, usually with his lifelong friend and colleague, the present chairman of the Division. Their encounters on the Rochdale links during the last twenty-five years have become part of the history (and legend) of the club. Wilson's other relaxation was reading—philosophy, biography, and the classics being his choice. In the enjoyment of his books he stole many hours from the night. At the funeral service at Rochdale Parish Church and the burial at Rochdale Cemetery on June 2 a large number of his patients and medical colleagues gathered to show their affection and regard. Dr. Wilson is survived by a widow, two daughters, and two sons; both the latter are medical students.

Universities and Colleges

UNIVERSITY OF OXFORD

At a congregation held on June 24 the degree of Bachelor of Medicine (B.M.) was conferred on N. H. Martin.

UNIVERSITY OF CAMBRIDGE

At a congregation held on June 22 the following medical degrees were conferred:

M.B., B.CHIR.—W. H. Phillipps, *C. N. Pulvertaft, N. T. Holden, J. A. Seymour-Jones.

M.B.—R. C. F. Catterall, G. N. St. J. Hallett, A. R. Pope, M. S. M. Rayner, C. J. F. Coombs, *H. W. Sadlier, *K. M. Mayall.

* By proxy.

The following candidates have been approved at the examinations indicated:

THIRD M.B.—*Part I (Surgery, Midwifery, and Gynaecology)*: E. W. O. Adkins, G. E. Adkins, R. F. Ashwin, T. M. Banham, C. F. Barwell, P. F. Barwood, R. D. D. Birdwood, A. W. Box, E. E. Bullock, J. F. H. Bulman, G. A. Burfield, O. J. Curl, J. K. Denham, R. C. S. Dick, H. G. Dowler, H. L. Ellis, T. J. Fairbank, A. L. Fawdry, N. Feiwel, A. Garcés, E. A. G. Goldie, A. C. F. Green, J. L. Griffith, J. E. Hardwick-Smith, S. W. G. Hargrove, N. J. P. Hewlings, J. H. S. Hopkins, R. T. Johnson, J. S. Joly, H. S. Kellett, P. Kelly, A. Leese, P. F. Malim, R. W. Mason, J. H. Moir, W. E. D. Moore, K. S. Mullard, W. A. Nicholson, A. P. Norman, W. E. Owens, G. R. C. Peatfield, P. A. T. Phibbs, E. H. D. Phillips C. G. Rob, D. Rubin, G. Sheers, J. F. Stokes, D. C. Sturdy, D. J. D. Torrens, R. L. Townsend, S. C. Truelove, W. B. Waterfall, P. H. Willcox, J. M. G. Wilson, P. R. Wilson, D. E. Yarrow, M. D. Young. *Women:* V. E. A. Sykes. *Part II (Principles and Practice of Physic, Pathology, and Pharmacology)*: C. D. Anderson, R. A. Andrews, R. F. Ashwin, E. F. Aubert, J. L. W. Ball, T. M. Banham, R. C. B. Barbor, P. F. Barwood, I. G. Braddon, H. A. Brook, J. F. H. Bulman, C. T. A. Burgess, L. H. Cane, N. F. Coghill, J. O. Collin, F. S. Cosh, F. M. Crawshaw, A. C. Cunliffe, R. C. S. Dick, C. M. Dickins, H. G. Dowler, R. Edwards, W. H. Ekin, E. A. Evans, E. M. Evans, N. Feiwel, J. N. Fell, C. H. C. Ferguson, G. M. Fleming, E. B. French, J. C. Gilson, C. E. D. H. Goodhart, I. C. A. D. P. Graham, I. A. Guest, H. Haigh, S. G. Hamilton, J. N. Horne, W. H. R. Jeremy, J. S. Joly, P. Kidd, A. B. Lintott, T. P. H. McKelvey, R. W. Markham, J. H. Moir, M. D. Molesworth, C. R. Morison, W. G. Murray-Browne, T. P. Myles, R. C. Neville, L. B. Paling, A. K. Pardhy, M. T. Parker, E. A. Pask, J. P. Reidy, G. O. Richardson, C. G. Scorer, C. J. S. Sergel, K. M. M. Sheldon, J. P. Singer, R. M. Solomon, R. S. Stevens, A. W. Stewart, J. F. Stokes, R. F. Tredgold, W. B. Waterfall, R. W. Watts, D. O. Wharton, B. D. Whitworth, E. H. L. Wigram, L. A. C. Wood, H. R. Wynne, G. E. Yardley. *Women:* M. B. Billington, G. M. S. Caldwell, A. C. Clark, C. E. Peaker.

UNIVERSITY OF LONDON

At a meeting of the Senate held on June 23, with the Vice-Chancellor, Mr. H. L. Eason, M.D., M.S., in the chair, Sir Robert Pickard, D.Sc., F.R.S., was elected Vice-Chancellor for the remainder of the year 1936-7 and for 1937-8. A cordial vote of thanks was passed to Mr. Eason for the great services he has rendered to the University during his tenure of the office of Vice-Chancellor. Mr. Eason took up his duties as Principal of the University on July 1.

Professor L. S. Dudgeon, F.R.C.P., has been appointed as from July 1 a representative of the General Medical Schools on the Senate for the remainder of the period 1934-8.

Sir Ernest Graham-Little, M.P., M.D., has been re-elected a member of the University Court for a further term of five years from October, 1937.

UNIVERSITY OF MANCHESTER

The Vice-Chancellor, Professor J. S. B. Stopford, M.D., F.R.S., has intimated to Senate and Council his desire to be relieved of the duties of the chair of anatomy, in view of the increasing responsibilities of his administrative work, and Mr. Frederic Wood Jones, D.Sc., F.R.C.S., F.R.S., at present professor of anatomy in the University of Melbourne, has accepted an invitation to the chair in succession to Professor Stopford, and will take up his duties in January, 1938.

UNIVERSITY OF WALES

WELSH NATIONAL SCHOOL OF MEDICINE

The following candidates for the degrees of M.B., Ch.B. have satisfied the examiners in the subjects indicated:

OBSTETRICS AND GYNAECOLOGY.—D. W. Abse, S. W. Beswick, Alice Davies, Miriam E. Davies, D. G. Evans, W. G. Miles, A. H. Millard, Mary D. Owen, W. L. Ll. Rees, R. Tipple, Emily K. Williams, Mary Williams.

UNIVERSITY OF GLASGOW

At a ceremony of graduation held on June 25 the following degrees were conferred:

M.D.—E. D. Cooper (with honours), S. Lazurus (with high commendation), A. Dick.

PH.D.—D. Matta, M.B., Ch.B. (*in absentia*).

M.B., CH.B.—A. M. Thomson.

The Asher Asher Gold Medal in Laryngology and Rhinology was awarded to D. Christison.

The Services

HONORARY PHYSICIAN TO THE KING

Lieutenant-Colonel A. G. Biggam, O.B.E., R.A.M.C., has been appointed Honorary Physician to the King and promoted to Brevet Colonel, vice Colonel J. Heatly-Spencer, C.B.E., late R.A.M.C., who has retired.

VOLUNTARY AID DETACHMENTS

The latest official returns of the progress made in the organization of Voluntary Aid Detachments show that 154 men's and 1,060 women's detachments, comprising a total membership of 30,942, have received recognition by the War Office. During the past year there has been an increase of 39 detachments and 1,673 members. Of the present membership 6,832 have undertaken the "mobile" obligation.

The county areas in England which have a total membership of 500 or over are: County of London, 1,785; East Lancashire, 1,761; Norfolk, 1,489; Hampshire, 1,278; Yorkshire (West Riding), 1,155; Surrey, 1,110; Devonshire, 1,030; Sussex, 1,005; Somerset, 982; West Lancashire, 976; Cheshire, 974; Essex, 865; Kent, 759; Yorkshire (North Riding), 713; Gloucestershire, 551; Nottinghamshire, 525; Lincolnshire, 519; Staffordshire, 500.

In Scotland there are 160 detachments, with a total membership of 4,132, of whom 1,091 are "mobile" members. There are 75 detachments in Wales, the total membership being 1,704, of whom 340 are "mobile" members.

The present scheme for Voluntary Aid Detachments was inaugurated in 1923, and is designed to supplement the medical services of the Naval, Military, and Air Forces in time of war. "Mobile" members are required to give an undertaking that, in the event of the embodiment of the Territorial Army, they are prepared to serve with the medical services either at home or abroad. "Immobile" members undertake to serve within reach of their own homes.

Medical Notes in Parliament

In the House of Lords on June 28 the Methylated Spirits (Scotland) Bill was read the third time, and the Factories Bill, which has had a first reading on June 22, was read a second time. On June 29 the Physical Training and Recreation Bill was read a second time after a discussion in which Viscount Dawson of Penn joined.

The House of Commons this week considered the Finance Bill and the proposed increase in the Exchange Equalization Fund. On June 22 it gave a third reading to the Factories Bill. The Children and Young Persons (Scotland) Bill passed through the committee of the House without amendment on June 23 and was read a third time. It had already passed the House of Lords. On June 28 the Hydrogen Cyanide (Fumigation) Bill was read a second time.

In the Commons on June 29 a financial resolution, upon which the Bill containing the Government's agricultural proposals will be founded, was agreed to in committee. Mr. W. S. Morrison, in explaining the proposals, dealt with the attack to be made on disease in animals and poultry, and said that a centralized veterinary service for the whole of Great Britain would be created.

A meeting of the Parliamentary Medical Committee was summoned for July 1.

Drainage of Trade Premises

A Standing Committee of the House of Commons considered on two nights the Public Health (Drainage) of Trade Premises Bill. Mr. BERNAYS (Parliamentary Secretary to the Ministry of Health) moved to insert a provision in Clause 1 to maintain that part of the existing law which prohibits the discharge of petroleum spirit and calcium carbide into a public sewer. The committee agreed to the amendment.

On Clause 2 (Special Restriction on Discharge of Trade Effluent) Mr. ARTHUR REED moved that the word "stating" be used instead of the word "specifying" in the obligation on all factories to give to the local authority information on their effluents. Sir KINGSLEY WOOD said he appreciated that in some cases it might be difficult to specify the exact chemical composition of a trade effluent. As long as the local authorities had a general indication they would be able to carry out their duties under the Act. He was prepared to accept the amendment, which was then agreed to.

Mr. QUIBELL said the Bill empowered local authorities to prevent certain trade effluents from going into the sewers. He wished to know what a trade should do with such an effluent. Some local authorities would not allow a pit into which oil or petrol had been emptied to be connected with the sewer. In such a case the trader tipped the liquid out of a pit and it finally found its way into a gulley and thence into the sewer. Sir KINGSLEY WOOD said machinery would be provided under the Bill which would enable the local authority to require that before a trade effluent entered the sewer there should be eliminated any such constituent thereof as might be specified in the by-laws. A general code would be secured which would apply all over the country.

On Clause 4 (Exemption) Mr. H. G. WILLIAMS moved a long amendment dealing with premises where a drain or sewer communicating with the public sewer or cesspool had been provided with a new drain or sewer in lieu thereof. Mr. Williams said the amendment would provide that the rights that the trader possessed in the old drain should be given him in the new one. The amendment would deal with the quantity of effluent which the trader might wish to carry to his treatment plant. Sir KINGSLEY WOOD said he had no criticism to make of the amendment, and the committee agreed to it.

Sir KINGSLEY WOOD moved to provide that the consent of a local authority to the discharge into a sewer of any liquid produced solely in the course of laundering articles should not be necessary for the purpose of the Act. He said this did not exempt liquids produced in the course of cleaning or dyeing. The committee agreed to the amendment. Sir Kingsley refused, however, to accept an amendment moved by Mr. Morgan which proposed to exempt the discharge into a sewer of any liquid produced in the course of washing down a slaughterhouse, and Mr. Morgan withdrew the amendment.

Consideration of the Bill was completed and it was reported to the House.

Factories Bill

The report stage of the Factories Bill began in the House of Commons on June 15 with consideration of new clauses. Sir SAMUEL HOARE moved a new clause dealing with washing facilities. He said that under the present Factory Act facilities were provided only in trades and industries which were liable to special dangers. The Bill, as introduced, had proposed to extend these requirements to trades in which there might be a large amount of dirt and dust. In committee on the Bill members of all parties thought the scope was too narrow and the Government gave an undertaking that a new clause would be introduced. The House would see that under the clause which he now moved facilities would be provided where they were needed and could be reasonably supplied.

Mr. RHYS DAVIES pointed out that these facilities under the new clause were to be provided "in any factory where any employed persons are accustomed to take their meals at the factories." He wished the Government was not so timid. After further discussion and an appeal by several members that the new clause should be withdrawn for reconsideration, Mr. MESSER spoke of the dirty hands of French polishers, which could not be washed clean with soap and water. In that industry dermatitis resulted from the use of turpentine, etc., and a man who had dermatitis might wash in the same bowl as other men, and possibly spread the disease. In some places the workers washed their hands in methylated spirit to get rid of the polish, which was not a good thing. Sir SAMUEL HOARE said he would consider that point, and undertook to redraft the clause on more general lines. The clause was withdrawn.

A new clause, dealing with accommodation for clothing not worn during working hours and the provision of arrangements for drying such clothing was read a second time.

PROTECTION OF THE EYES

Mr. GEOFFREY LLOYD moved a new clause (Protection of eyes in certain processes), which ran:

"In the case of any such process as may be specified by regulations of the Secretary of State, being a process which involves a special risk of injury to the eyes from particles or fragments thrown off in the course of the process, suitable goggles or effective screens shall be provided to protect the eyes of the persons employed in the process."

Mr. SHORT hoped the Home Secretary would ensure that employers saw their workmen used these necessary defences. Mr. MCLAREN said that in industries where men sweated the goggles became corroded, and when these goggles fitted badly across the bridge of the nose serious inflammation might occur. It was not enough to provide suitable goggles; the individual must be suited. Mr. LLOYD replied that the fitting of goggles was important, but screens would be prescribed wherever possible. The clause was read a second time.

Mr. BANFIELD moved a new clause to prohibit night work in bakehouses. He said Great Britain was the only country which had not abolished night baking. Sir SAMUEL HOARE said the Committee on Night Baking had not issued its report and he was not in a position to make a statement for or against the case which Mr. Banfield had put. When the report was received the Government would at once give attention to it and decide what action, if any, it should take. The proposed new clause was defeated by 228 to 125.

Colonel SANDEMAN ALLEN moved a new clause authorizing a variation of the hours to be worked in laundries. The clause was carried by 200 to 117 and was added to the Bill.

OVERCROWDING AND VENTILATION

The House then proceeded to consider the clauses of the Bill as received from standing committee. On Clause 1 (Cleanliness) Mr. RHYS DAVIES moved to provide that the weekly cleaning of the floor of every workroom should be done at a time (if any) when work was not going on in the workroom. Mr. GARRO JONES said that unless sweeping was done hygienically it was more menacing to the health of the workers than neglect of any sweeping at all. The amendment was withdrawn and a technical amendment dealing with Clause 2 (Overcrowding) was added to the Bill.

The House agreed to an amendment proposed by Sir SAMUEL HOARE, who explained that in the Bill as amended by it inspectors were authorized to insist on mechanical ventilation at once in cases where that was needed; secondly, after a period of five years mechanical ventilation would be generally compulsory; and, thirdly, the concessions allowed for existing factories in the same occupation were to be subject to a definite time limit of ten years. Mr. LLOYD put forward an amendment authorizing the chief inspector to accept in the subsection any workroom in which explosive materials were manufactured or handled. The amendment was carried after discussion by 228 to 112 and the House adjourned.

On resumption of the debate on June 16 the House accepted an amendment moved by Colonel SANDEMAN ALLEN to Clause 2 (Overcrowding). This amendment provided that where a room contained a gallery, the gallery should be treated for the purposes of this section as if it were partitioned off from the remainder and formed a separate room. An amendment by Mr. RIDLEY was also accepted, which provided that unless the inspector for the district otherwise allowed it should be the duty of the employer to post a notice in the workroom stating the number of employees who might be engaged there at one time.

POWERS OF SANITARY INSPECTORS

On Clause 8 (Enforcement by district councils of certain provisions of Part 1) Major MILNER moved an amendment. He said the clause provided that in any of the succeeding provisions of the Bill there should be substituted for reference to the inspector a reference to the medical officer of health. The purpose of his amendment was to add the words "or sanitary inspector." The clauses related to cleanliness, overcrowding, temperature, ventilation, drainage, and sanitary conveniences. These things were peculiarly the functions of the sanitary inspector. If the clause went through as it stood, the House would take away from sanitary inspectors the power they at present had under the Factory and Workshops Act of 1901. Without this amendment, when the sanitary inspector came along, even under the direction of a medical officer of health, a factory owner could tell him that he had no authority to come into the factory.

Mr. T. M. COOPER said the clause was not to determine which officer of a local authority was to perform certain duties relating to inspection. Its purpose was to transfer to a named officer of a local authority certain powers which, under the scheme of factory legislation, were specifically conferred on the inspector. The amendment would extend the powers of sanitary inspectors beyond those they now enjoyed. It would be out of harmony with the system of local government to suggest that the medical officer of health should act on a report of a sanitary inspector. The Sanitary Officers Order of 1926 was among the administrative regulations and controlled the relations of the medical officers of health to the sanitary inspectors. The sanitary inspector worked under the supervision and direction of the medical officer of health and was a subordinate person. The amendment was negatived. On a motion of Mr. LLOYD amendments were made on Clause 14 (Other machinery).

On Clause 21 (Training and supervision of young persons working at dangerous machines) Mr. BURKE moved an amendment. He said the clause empowered the Minister to prescribe certain machines to which the clause should apply. The Labour Opposition contended modern factories were of such a character that the whole place was dangerous; the machines to be described would in the main be those which had been involved in accidents. If the amendment was accepted, safety-first instructions would be part of the terms of employment of every young person. The rate of accidents among boys was 38 per cent. above the rate for older persons and 65 per cent. above in the case of girls. Mr. LLOYD said the Home Secretary intended to make full use of the power given in the clause, and after the Bill was passed the Home Office would issue lists of machines which came under the terms of the clause. The amendment was withdrawn.

Amendments were made on a motion of Mr. LLOYD in Clause 22 (Hoists and lifts) and on the motion of Mr. GRAHAM WHITE in Clause 23 (Chains, ropes, and lifting tackle).

On Clause 25 (Construction and maintenance of floors, passages, stairs, and ladders) Mr. MARSHALL moved to provide that where the floor of any workroom was apt to become slippery effective steps should be taken to prevent accidents. Mr. LLOYD said it would be unwise to insert in a statute of criminal offences a requirement which gave occupiers of factories only a vague indication of what they were to do. It would be better to leave it to the Secretary of State under Clause 59 when making regulations for dangerous trades to insert provisions dealing with slipperiness of floors. The amendment was withdrawn.

On Clause 27 (Precautions in places where dangerous fumes are liable to be present) drafting amendments were made, and Mr. WHITE moved an amendment prescribing that the manhole in tank waggons and other mobile plant should be not less than 16 in. long and 14 in. wide. The amendment was accepted.

FIRST-AID TRAINING

On Clause 45 (First-aid) Sir SAMUEL HOARE moved to leave out the restriction to factories using mechanical power of the obligation to provide first-aid equipment. This was accepted, as was also an amendment providing that in factories employing fifty persons or upwards the person in charge of the first-aid equipment should be trained in first-aid treatment.

On Clause 52 (Underground rooms) Mr. SHORT moved to provide that work should not be carried on in any underground room "unless it is certified by the inspector for the district to be suitable for the purpose on hygienic grounds and in particular as regards construction, light, ventilation, and adequate means of escape in case of fire." Sir SAMUEL HOARE said if inspectors had to certify every one of these underground rooms, although they knew that many reached a comparatively high standard of accommodation, they would not have time to do more urgent work. He asked the House not to accept the amendment. The amendment was defeated by 209 to 134. A further amendment by Mr. SILVERMAN to insist upon a height of 8 ft. 6 in. from the floor to the ceiling of underground workrooms was also negatived.

Mr. LLOYD moved to provide that in the case of any underground room which at the commencement of the Act did not form part of a factory or was not used as a workroom in a factory other than for storage the occupier should, before the room was used as a workroom, give notice in the prescribed form to the inspector for the district, and should not use the room for any process of a hot, wet, or dusty nature or which was liable to give off any fume without the consent in writing of the inspector of the district. The amendment was agreed to.

On Clause 53 (Basement bakehouses) Mr. BANFIELD moved to provide that no such bakehouse should be used after five years from the passing of the Act. He said there had been no new underground bakehouses since 1901, and in that year the majority of the existing underground bakehouses were already old. The amendment was defeated by 187 to 125, and a further amendment was inserted to provide for the examination in the year of commencement of the Act and in every fifth year succeeding that, by every district council, of each basement bakehouse in respect of which a certificate of suitability had been issued. If the council is not satisfied with the result of the examination, they shall give notice that the certificate

shall cease to have effect after the expiration of not less than one month and that the basement bakehouse shall not thereafter be used as a bakehouse.

The discussion of the Bill was adjourned.

EMPLOYMENT OF YOUNG PERSONS

When consideration of the Bill was resumed on June 17, Mr. RHYS DAVIES, on Clause 69 (General conditions as to hours of employment of women and young persons), moved to insert a provision that it should not be lawful to employ a young person under the age of 15 in a factory. Sir SAMUEL HOARE said we were reaching a time when the school-leaving age would go up. Mr. Rhys Davies did not believe in the possibility of beneficial employment for those under 15, but that was not the view of the House when it passed the Education Act under which it was possible, with rigid safeguards, to make exemptions for beneficial employment. Lord EUSTACE PERCY said that, broadly speaking, factory employment was incompatible with education during the years up to 15. Mr. GEOFFREY LLOYD quoted a report from an industrial district which declared that the great majority of the girls and more than half of the boys leaving school requested factory work. He reminded the House that under the Education Act the education authority in granting leave to take up such work would have to consider the health and physical condition of the child. The amendment was defeated by 207 to 137.

Mr. SHORT moved to make the conditions of hours of employment general by leaving out the reference to women and young persons in Clause 69. The amendment was defeated by 193 to 125. Mr. DOBBIE moved to reduce the maximum hours of weekly work for women and young persons from 48 to 40. Mr. LESLIE said the report of the chief inspector showed that accidents to young persons had risen from 3 per cent. in 1928 to 22 per cent. in 1935 owing in the main to the long hours which these young people had to work. Sir SAMUEL HOARE said if the House reduced the hours of 1,500,000 women and 1,000,000 young persons under 18 from 48 to 40, it would dislocate industrial life. So far as women were concerned, the Government did not feel justified on grounds of health and safety in reducing their hours of labour to 40. The amendment was defeated by 195 to 128.

The House adopted an amendment proposed by Mr. LLOYD to ensure that in the case of young persons under 16 the period of employment should not end later than 6 p.m. He said it might necessitate a reorganization in some London workshops.

Technical amendments were made dealing with overtime in trades where there is exceptional pressure for a short time in the year and also with hours of work in factories where milk is treated and in tenement factories.

DUTIES OF EXAMINING SURGEONS

On Clause 124 (Appointment and duties of examining surgeons) Mr. RHYS DAVIES moved to provide that, subject to the consent of the employed person concerned, the examining surgeon should have the right to inspect the medical records of the medical practitioner employed by the occupier of the factory. He said a point of etiquette might arise on that inspection, and the Labour Opposition proposed that the examining surgeon for this purpose should be paramount over the medical officer employed by the firm. Mr. LLOYD said this proposal depended on the doctor employed by the firm having kept his records at the factory in a form in which they could be read by other people. A more serious objection was that the examining surgeon should have the right to a roving inquiry into the records of another practitioner irrespective of the precise scope of his duties under the Act. It would be more practicable to leave the matter to be settled between the two doctors. The Home Secretary would bear the point in mind under subsection 5, which provided that he might regulate the duties of the examining surgeon. Mr. Rhys Davies withdrew his amendment.

Mr. ELLIS SMITH moved to insert in Clause 124 that where any person was liable to contract an industrial disease from any process carried on in a factory, the examining surgeon should examine such person at least once a month during working hours, and keep a record of such examinations for the inspector. He said his object was to secure that further steps would be taken by the Home Office to deal with silicosis, asbestosis, dermatitis, and other industrial diseases.

Mr. LLOYD said the term "industrial disease" was too vague. It would mean that a vast number of examinations would have to be made. A month was too rigid a period for the examination. In the lead poisoning regulations the time between the periodical examinations varied according to the process. Monthly examinations would not be appropriate for silicosis, which developed slowly. Under the silicosis provisions of the Workmen's Compensation Act periodical examinations were made, but the intervals varied according to the process and the concentration of silica dust in a particular process. For silicosis a technical and skilled diagnosis was required which the ordinary doctor was not capable of carrying out. Mr. Ellis Smith should consider whether there was a particular case in the potteries—the industry with which he was connected—for requiring periodical examination in connexion with additional processes. The Home Office would look carefully into any further information on that matter. With regard to dermatitis a monthly examination would not be frequent enough. The workman should have his hands examined daily, perhaps as he went into the works, and the practical method of dealing with the question would be for the Home Secretary to make regulations under Clause 59—the dangerous trades clause. He reminded Mr. Ellis Smith that under Clause 11 the Home Secretary had for the first time power to require the medical supervision of workers in all factories in certain circumstances. Mr. Ellis Smith then withdrew his amendment and the report stage was completed.

The Bill was read a third time in the House on June 22, Sir Francis Fremantle being among those who took part in the debate.

Methylated Spirits Bill

The Methylated Spirits (Scotland) Bill, which had passed the House of Commons and secured a second reading in the House of Lords, was taken in committee of that House on June 17. Lord ASKWITH moved a series of amendments, which, he said, had been redrafted in the Scottish Office, and he understood that the Government and the promoters of the Bill were prepared to accept them. The object was to avoid double listing and dual authority. The chemists in Great Britain were, by an Act passed in 1933, placed under the Lord President of the Council and under the Statutory Committee. Certain provisions in the Bill would be applied by this Committee. The proposal embodied in the amendments was that while local authorities and the resellers of surgical spirit or methylated spirits would be controlled by the Bill, doctors or chemists, who were already under stringent regulations, should be treated by authorities whose powers should continue to exist.

The House then agreed without discussion to the amendment proposed by Lord Askwith, including one to add to Clause 1 the following proviso:

"Nothing in the foregoing provisions of this section shall apply to surgical spirit sold by an authorized seller of poisons on registered premises or supplied by a duly qualified medical practitioner, registered dentist, or registered veterinary surgeon for the purposes respectively specified in subsection (1) of Section 19 of the Pharmacy and Poisons Act, 1933, if the requirements of subsections (2) and (3) of the said section are complied with in relation to such sale or supply of surgical spirit in like manner as if it were a medicine."

The committee stage was concluded.

On June 22 the Bill passed the report stage in the House of Lords.

Health Services Debate

In the House of Commons on June 18 the estimates for the Ministry of Health were further discussed, and on this occasion the votes put down included that for the Board of Control. Mr. ARTHUR GREENWOOD opened the debate by discussing housing and the working of the Overcrowding Act.

MENTAL TREATMENT CRITICIZED

Mrs. TATE raised the question of the treatment of mental disease. A few days previously, she said, the Minister of Health opened a new mental hospital at Runwell which cost £650,000 to build and would hold about 1,000 people. It was a very fine place, and people who went there would receive care and attention according to the present ideas of what the mentally afflicted should receive. The problem, however, was whether such enormous expenditure was necessary. Taking the average of the country the cost of a mentally treated person was about 28s. each weekly after buildings, land, staff, and so forth were paid for. Yet a newspaper had said that for £75,000 this country could have the finest mental research laboratory in the world. What was needed was a realization of the enormous proportion of cases of mental disease of wholly physical origin which would never have required mental treatment if proper treatment had been given in the early stages. She herself did a certain amount of certifying, and the people she had to see fell into two categories. In the first were those for whom nothing could be done beyond keeping them in comfortable conditions and seeing that for the rest of their lives they did as little harm as possible. In the other category were those human beings who, until the present or some previous attack, were often intelligent, valuable members of the community, not even old, sometimes in early life. They had to be certified, and if they went to Shenley or Runwell doubtless were examined and had proper treatment. But why were they not examined and treated long before they reached the stage of having an attack? Almost nothing was being done in this country to treat mental diseases in their early stages. Many affected persons went to an asylum where they would be lucky if they had any medical attention worthy of the name and if any real examination into the physical side of the illness was ever made.

"APPALLING" MENTAL HOSPITALS

Part 2 of the report of the Board of Control was an unsatisfactory document. It pointed out little real difference between the good hospitals and the bad, and the bad were almost too appalling to be believed. It showed that in many mental hospitals there were between 300 and 400 patients to each doctor. In many of them there was practically no dental treatment whatever, and the sanitary conveniences would not be allowed in any other building. Of one hospital the report said it was rather a pity that the washing arrangements were such that it was only possible for patients to be washed once

tnight. There were recommendations that the scrubbing-
ies used for the kitchen tables and the lavatory pans
d be better if they were not identical, and for patients
ave individual toothbrushes. Money spent on such cons
ns was money poured down the drain. There must be
: accommodation in many parts of the country, but were
to build gigantic colonies such as Shenley and Runwell at
lling expense or set up clinics for the treatment of disease
s early stages? If these hospitals had to be enlarged
d it not be done with greater effect at a smaller cost?
ll the counties of England country houses were for sale
h nobody was likely to take. Surely they could take
: of these houses of moderate size, modernize them, put
rtain class of mental patient into them, and have a panel
siting doctors.

"NERVE CLINICS"

rs. Tate asked the Minister to suggest to local authorities
der extension of the work which was being done at Park
al, Middlesex, where there was a clinic for treatment of
ous patients. A stigma attached to the name "mental
ise." Therefore call these centres "nerve clinics," do
ything to see that anyone suffering from nervous disease
ided a nerve clinic, and ensure that when they went there
whole physical condition would be properly investigated.
ple who had been discharged after receiving mental treat-
t complained to her of lack of human understanding. It
not always the fault of the staff. In many hospitals it
almost impossible to get any staff, and the first improve-
t to be made in mental hospitals where conditions were
should be an improvement in the conditions under which the staff lived and worked. Mrs. Tate begged the Minister, when the head of a hospital which had been a bad hospital left, not to let the second in command be promoted just because he had been there a long time. The country welcomed the fact that St. George's Hospital was attempting to undertake treatment of mental and nervous disorders in the early stage. That should be compulsory in every State hospital and should be urged on every voluntary hospital.

MATERNAL AND TUBERCULOSIS MORTALITY IN WALES

Mr. JAMES GRIFFITHS said he found alarming facts in the reports upon the health of the people in Wales. He appealed to the Minister to assist Wales more generously to develop her social services. Of the ten worst administrative counties for maternal mortality eight were Welsh; of the ten worst in respect of mortality from tuberculosis six were Welsh; of the thirty worst for overcrowding eleven were Welsh. These were not separate problems but really one problem. In 1924-33 maternal mortality in Wales exceeded the maternal mortality in England by 35 per cent. The rate in the special areas had been substantially increasing, and South Wales generally had had 10 years of poverty and unemployment. Of 665 mothers examined at infant welfare centres in Wales 30 per cent. were anaemic and in an emaciated condition. Out of thirteen administrative counties in Wales eight had no ante-natal clinic, yet they were among the counties which showed the worst maternity rate. The best services in the world would be inadequate to offset the general poverty and overcrowding, the low incomes, and the low standard of life.

Mr. LOVAT FRASER said children were living in workhouses to-day contrary to the regulation which provided that no child over the age of 3 should live in a workhouse for longer than six weeks. There was still need for vigilance to prevent cruelty in children's homes.

Captain ELLISTON regretted that Sir Kingsley Wood gave the House no assurance about the promised long-term milk policy. Outbreaks during recent years of typhoid, paratyphoid, scarlet fever, and septic throats had been recognized by the Ministry as directly due to milk-borne infection. The case for the pasteurization of milk was scientifically irrefutable. The real opposition to the protection of the public against milk-borne disease was dictated by economic considerations because pasteurization would involve some producer-retailers in extra costs. He had recently brought to the notice of the Ministry the fact that large quantities of boned beef were imported in unrecognizable cuts with lesions removed that might indicate disease. Large consignments of this beef were brought to the City of London market, but a proper inspection was impossible. The Ministry had given assurance that the system of inspection at the port of origin was absolutely reliable, but he had a report in his hand by Mr. Ross Grant, the Australian veterinary officer, which seemed an admission that boned beef enjoyed no respect in Australia. Nearly 2,000 tons of that beef came to England each month, more than half of it from Australia. Was it too late for the amendment of the Public Health (Imported Foods) Regulations which were to come into force on January 1, 1938?

VOLUNTARY HEALTH ORGANIZATIONS

Capt. Elliston wondered how far the Ministry was wise in delegating its responsibilities to voluntary bodies. An example of this practice was found in relation to rheumatic disease, a malady which accounted for one-sixth of the expenditure on national health insurance and caused 50 per cent. of heart disease. The Empire Rheumatic Council, a voluntary organization, was spending its time endeavouring to raise funds to carry on its work. The Minister ought to help this organization by finding funds and by stimulating local authorities to establish clinics in connexion with public baths. He should also induce those authorities to provide wards and research units in Poor Law hospitals which they had taken over. The Population Investigation Committee was another voluntary organization which had no staff and no funds. A matter so urgent for the future of the race really called for immediate appointment of a Royal Commission backed up by the resources of every Government Department concerned.

SIR KINGSLEY WOOD'S REPLY

Sir KINGSLEY WOOD, dealing with the anticipated decline in population in reply to the debate, said what was first needed was research of a scientific kind—more facts and a more satisfactory and informatory method of getting population statistics. Complete information could only be obtained by the census or by the registration system. The next census would not be taken until 1941, and it was better to build up annually a continuous volume of statistics. Therefore the registration system was best for the purpose, but existing powers only permitted information relating to births to be obtained for entry in the birth register, and full copies could be obtained by the public. A proposal to enter up in the register information of the duration of the marriage and the number of children previously born of it was open to objection. The objection would be met if it were arranged for the necessary particulars to be given to the registrar confidentially not for entry in the public register but for statistical purposes only. He would examine this matter. If it were adopted legislation would be required.

VENEREAL DISEASE: VISIT TO SCANDINAVIA

Sir Francis Fremantle and Mr. Grenfell had referred (in the earlier debate) to the measures taken in relation to venereal disease in certain Scandinavian countries. The scheme for prevention and treatment of venereal diseases in this country was based on the recommendations of the Royal Commission which reported in 1916. The Commission reported against any system of compulsory notification or treatment on the ground that the element of compulsion would deter some people from consulting a doctor or attending at a centre. They had built up about 180 centres in England and Wales, and the total number of attendancies by patients each year was well in excess of 3,000,000. In 1935 the total number of persons dealt with for the first time at the centres was 98,000, and of those as many as 36,230 were found not to be suffering from venereal disease. That showed that the centres were readily used by persons apprehensive of having contracted the disease. The number of fresh cases of syphilis attending the centres had steadily fallen from some 23,000 in 1930 to 19,000 in 1935. In 1920 the number of these cases was about 42,800. That striking evidence was confirmed by the death rate for infants under 1 year of age certified as due to syphilis. The number of cases of gonorrhoea attending the centres had not varied very much in recent years, and it was commonly supposed that many sufferers from this disease, especially women, did not receive proper treatment either at a centre or from a private doctor. The present policy and belief was that the use of these centres by persons suffering in this way could best be secured by judicious education and propaganda on the importance of seeking early and skilled treatment for this disease. The anti-venereal disease measures in Scandinavian countries differed essentially in having notification and compulsory treatment. In this country there had been a decline of 36 per cent. in the figures of fresh syphilitic infections since 1931. Between 1924 and 1929 there was apparently little or no decline, but since then the decline had been remarkable, and the rate of fresh infection with syphilis, now in the region of 160 per million of the population, compared favourably with the rate of 220 per million in Denmark. The Minister felt, however, that a further special study of one or more of the Scandinavian systems might yield useful results. The Secretary for Scotland and he were arranging for one medical officer from each of the two departments, together with an administrative officer experienced in venereal diseases, to visit Scandinavia at an early date and report. They would consider the extension of that inquiry to Holland where there was voluntary treatment.

MENTAL DISORDER AND DEFECT

Sir Kingsley claimed that good progress was being made in human progressive treatment of the mentally disordered and mentally defective people of the country. Mrs. Tate had read extracts from the report of the Board of Control regarding bad cases, but that report recorded a far greater number of good cases, and in no other country was there so frank a statement of the position in mental institutions. Directly officers of the Department ascertained these cases they wrote to the authorities concerned, called upon them to remedy the conditions complained of, and later saw what steps had been taken. Three things were required in the mental services of the country. First there must be constant vigilance in the conduct and control of these institutions. Secondly, he attached great importance to efforts to secure the right type of nurse. Thirdly, it was essential to investigate vigorously any instance of ill usage or bad treatment. He thought there was need for further research into causes of mental affliction, and he had recently appointed a committee under Lord Radnor to see what could be done to advance research. The need for providing more accommodation was fully realized and schemes were in hand or in contemplation. Loans sanctioned last year for purposes of the Lunacy and Mental Treatment Acts were over £2,000,000 as compared with £1,700,000 in 1935-6. One of the best signs in connexion with the treatment of mental disease was a steady increase in the flow of voluntary patients. More than 25,000 patients were admitted last year to public mental hospitals, and of these nearly 27 per cent. were voluntary admissions. A larger number of people were seeking early treatment and had confidence in the institution. Out-patient clinics now totalled 165. To take over country houses for mental treatment purposes as suggested by Mrs. Tate would not be economic. It had been tried and found expensive. The importance of physical illness as a causal factor in mental disorder was widely recognized. Under the mental treatment rules the medical superintendent of an institution was required to send to the Board of Control a statement of the mental and bodily health and condition of the patient within seven days of the patient's admission.

The discussion was adjourned.

Pensions of Local Government Officers

The Local Government Superannuation Bill came before a standing committee of the House of Commons on June 22.

On Clause 5 (Power to admit employees to statutory undertakings) Captain ELLISTON moved to add a proviso which enabled a local authority operating the Midwives Act, in arrangement with a voluntary organization employing whole-time midwives, to admit such midwives to the benefits of the authority's superannuation scheme by agreement in the same way as employees of statutory undertakings could be admitted. Under such an agreement the employing organization would be required to make contributions to the funds in addition to the midwife's own contribution, and this would be taken into account in fixing the financial assistance given by the authority to the voluntary organization. The justification for the amendment was that midwives did on behalf of the local authority the same work that was done in other cases by municipal midwives. The committee agreed to the amendment, and Clause 5 was added to the Bill.

On Clause 6 (Contributions) Sir TERENCE O'CONNOR moved an amendment to provide that persons unable to discharge their duties in consequence of incapacity, whether transferred to another post or not, should be enabled to make their old contributions at their own expense in order to maintain the pensionable position as though they had not suffered a decline in health. He said that as the clause stood that right was restricted to people who were transferred from one post to another. The amendment was accepted, and the clause as amended was approved.

QUALIFYING PERIOD OF SERVICE

On Clause 8 (Eligibility for superannuation allowance and scale of allowances) Mr. GRANT-FERRIS moved to leave out "40" and to insert "30." He said his object was to press the advisability of altering the retiring age from 65 to 60. The non-professional employee started work under the local authority at the age of 20 or even younger, and thus was able to complete forty years of service and retire at the age of 60. The professional man could not start before he was 25, and thus was unable to retire until 65. A man should have the chance of getting out at 60 and securing some other congenial employment. In justice to doctors, engineers, veterinary

surgeons, and so forth, this opportunity of retiring at the age of 60 with pensions commensurate with their years of service ought to be allowed.

Sir KINGSLEY WOOD said Mr. Grant-Ferris wished to replace the period of forty years' service by one of thirty years. The committee that considered this matter made no such recommendation, and forty years was the limit for the purpose of the Poor Law Officers Act. In one or two cases, for which there was good reason, the qualifying limit was twenty years. There was an earlier retiring age under the Asylum Officers Act because of the arduous character of the work which male nurses in a mental hospital service were called upon to perform, and midwives and health visitors could qualify for pension after thirty years, again owing to the arduous character of their duties. No such conditions applied to the ordinary work of the ordinary local government employee. Forty years was the limit for the Civil Service. Sir Kingsley added that he could not accept the suggestion, as it would affect the stability and security of the superannuation funds. Mr. Grant-Ferris withdrew his amendment.

On Clause 12 (Reckoning of contributory and non-contributory service, and service of persons indirectly employed) Captain ELLISTON moved to insert the following:

> "In computing the amount of superannuation allowance payable under this Act, a local authority may, in consideration of peculiar professional qualifications or of special circumstances, with the consent of the Ministry of Health, add a number of years not exceeding ten to the number of years which the officer to receive the allowance has actually served in the aggregate.

He said the amendment expressed the feeling that added years should be allowable by a local authority in the case of its professional officers. These professional officers entered the service at a comparatively late age, and were commonly unable to achieve their full pensions. They entered at a salary level higher than that of non-professional officers, and one which climbed less speedily towards the maximum. Their contributions in proportion to the pension finally achieved were much higher than those of the non-professional workers. This applied especially to doctors.

Sir TERENCE O'CONNOR said he could not recommend the committee to adopt the amendment or to permit the principle to be established in the Bill The principle of added years had been condemned by the Royal Commission on the Civil Service, and had been abolished in the Civil Service since 1914. The amendment was withdrawn and the clause ordered to stand as part of the Bill.

Sir Terence O'Connor moved an amendment to Clause 16 (Midwives and health visitors). He said the clause as it stood gave effectual recommendation that the retiring age for female workers, midwives, and health visitors should be 65. Under this arrangement these women who had to go through a period of training beforehand could not complete forty years' service and earn the maximum pension if they had to retire at 60. The amendment would enable local authorities to grant compensatory allowances to nurses, midwives, and health visitors in their service as contributory employees even if they had not completed forty years' service on reaching the age of 60. These allowances would be on a scale to bring the pension at an earlier age up to that received if the women had been permitted to serve to the full age of 65. Any such addition to the pension earned would not be made from the pension fund, but would be voted out of the rates of the local authority. The amendment was approved, and Clause 16 as amended ordered to stand part of the Bill.

When discussion of the Bill was resumed on June 24 Sir KINGSLEY WOOD explained that the object of a proposed new subsection to Clause 26 was to empower local authorities to include in the scheme which they had to submit under that clause a provision whereby they could, if they wished, continue to require employees or prospective employees to pass a medical examination before coming into the superannuation scheme. The amendment was accepted and the clause approved.

"TEMPORARY" SERVICE

The Minister also brought forward a new clause dealing with whole-time officers appointed in a temporary capacity. He said he must have regard to the position of people who entered the local government service in a temporary capacity but remained for several years, and at the end of that time were in a position difficult to distinguish from those who had been placed on the permanent staff. The effect of the clause was that a local authority might in the case of any officer expressly engaged in a temporary capacity for the period of not more than two years determine that he should not be a contributory employee. At the end of two years' local government service, continuous or not, such an officer would automatically become a contributory employee whether he remained with the same authority or transferred within twelve months to another. In the latter case the authority by whom he was originally employed had to pay to the authority to which he went a prescribed transfer value. The clause was read a second time and added to the Bill.

Captain ELLISTON appealed to the Minister to provide interchangeability between the Federated Superannuation Scheme of the voluntary hospitals and the superannuation scheme under the Bill. Such a provision would promote interchange of personnel between the voluntary and the municipal hospitals, and would enhance the quality of hospital work all over the country. The matter was of special importance to nurses. Sir KINGSLEY WOOD regretted that there were almost insuperable difficulties of a financial and actuarial character which prevented reciprocal arrangements of the kind indicated.

The Bill as amended was reported to the House.

Public Exhibition of Animal Experiment Films

A Standing Committee of the House of Commons on June 23 considered the Cinematograph Films (Animals) Bill. The object of the Bill is to prohibit the public exhibition of films in the production of which suffering is caused to animals, or any films which depict the suffering of animals brought about by any means, either natural or artificial.

Sir ROBERT GOWLER moved an amendment providing that a cinematograph film shall be deemed to be exhibited to the public when, and only when, it is exhibited in a place to which for the time being members of the general public have access, whether on payment of money or otherwise, and the expression "public exhibition" to be construed accordingly. He said that the Bill would only affect the public exhibition of films, and it had been amended for that reason. It was represented to him and to the other promoters of the Bill by members of the medical profession that to-day a number of films showing demonstrations—he would not say experiments—on animals were taken and were used for the purpose of exhibitions to medical students and also to students in universities. Whatever the views of members of the committee might be on vivisection they would all agree that it was much better that use should be made of cinematograph films for this purpose than that the actual animals should be used for demonstrating. For that reason principally the promoters accepted the suggestion put forward by members of the medical and scholastic professions in this country that the Bill should be limited to public exhibitions of films. From inquiries he was satisfied that very few films were exhibited privately in this country. The great desire in passing this legislation was to discourage people abroad from making films by means which involved cruelty to animals.

Mr. RADFORD said that as one who did not like experiments on animals he thought that the amendment would tend to reduce the number of such experiments. If they could be reproduced on the film for the benefit of students there would not be the necessity for performing so many of them.

The amendment was agreed to and the Bill passed through committee.

Health Insurance of Juveniles

The text of the National Health Insurance (Juvenile Contributors and Young Persons) Bill, introduced by Sir Kingsley Wood, has been issued. An explanatory memorandum says the purpose of the Bill is to provide medical benefit under the National Health Insurance Act to boys and girls who, on

leaving school, become employed before reaching the age of 16, and thus to bridge the gap in medical supervision which at present exists between the school medical service and the commencement of full insurance under the National Health Insurance Act. The Bill accordingly provides that any boy or girl who, after reaching school-leaving age but before the age of 16, becomes employed within the meaning of the National Health Insurance Act, shall immediately become entitled as a "juvenile contributor" to medical benefit as though he were an insured person, and that whether or not he remains continuously employed he shall continue to be so entitled until the end of the half-year in which he attains the age of 16½, or until he becomes entitled to the benefit as a fully insured person by reason of employment after the age of 16, whichever first occurs.

FINANCIAL PROVISIONS

The contributions to be paid are 4d. a week, divided equally between the juvenile contributor and the employer. The cost of medical benefit and the cost of adminstration will be defrayed in the same manner as benefits under the principal Act—that is, as to six-sevenths (boys) and four-fifths (girls) out of the contributions, and as to the balance out of moneys provided by Parliament. The charge for medical benefit, including the supply of medicines and administration by insurance committees, will be on the same basis as for ordinary insured persons—namely, a sum not exceeding 13s. per head per annum—and provision will also be made for an allowance to approved societies for their work in the issue and collection of contribution cards, etc.

It is estimated that the number of juvenile contributors at the outset of the scheme will be about a million. Owing to the increase in the number of children remaining at school until the age of 15 after September, 1939, and the decrease in the number of births in the last fifteen years, the number of juvenile contributors will diminish in the next few years, and it is probable that by 1943 the number will not exceed 750,000.

SCHOOL MEDICAL RECORDS

The Bill provides that it shall be the duty of education authorities to make arrangements for their officers to furnish in confidence, on the application of an insurance medical practitioner, such particulars of the school medical record, either of a juvenile contributor or of any insured person under the age of 18, as the practitioner may require to assist him in the treatment and medical supervision of the young person.

In the Schedule to the Bill the appropriate provisions of the principal Act are applied, with or without modification, to juvenile contributors in order that the machinery and procedure of the main scheme may be utilized for this new class of contributor. Clause 7 provides in the usual form for the application of the provisions of the Bill to Northern Ireland under parallel legislation passed by the Parliament of that country. The Act is to come into operation from January 1, 1938, but contributions are only to be payable from the following Monday (January 3).

National Defence Contribution.—On June 21 the House of Commons approved a resolution authorizing a National Defence Contribution for five years at an annual rate of 5 per cent. on the profits for any trade or business. Sir JOHN SIMON, explaining why professions would be excluded, said: "Take two highly skilled medical men. One is a medical officer of health and the other is carrying on the private practice of a doctor—he is a doctor in the West End. He is taxed no doubt on his profession. His colleague in medicine who holds a public office is not taxed on the grounds of his profession at all, but is taxed as the holder of an office or as one engaged in an employment. If indeed we were to widen the scope of the tax in the way sometimes suggested we should find it extremely difficult to know where to stop. Why should you apply it to a West End doctor and not apply it to a medical officer of health?

MR. R. C. MORRISON: Does the right hon. Gentleman know a medical officer of health receiving over £2,000 a year?

SIR J. SIMON: It is easy to give an example of men who are professional but none the less are employed at high salaries.

Medical News

The ninety-sixth annual meeting of the Royal Medico-Psychological Association will be held at the County Buildings, Ayr, on July 7, 8, and 9. The in-coming president, Dr. Douglas McRae, will deliver his presidential address entitled "Some Observations on the Care of the Insane" at 2 p.m. on Wednesday, July 7, and the annual dinner will be held in the County Hall at 8 p.m. the same day. The subject for discussion at the meeting is "The Circulatory System and the Psychoses."

A meeting of the Society for the Study of Inebriety will be held at 11, Chandos Street, Cavendish Square, W., on Tuesday, July 13, at 4 p.m., when Mrs. Lilias M. Blackett Jeffries, M.D., will open a discussion on "Marriage in Relation to Alcohol and Drug Addiction."

The eleventh International Congress of Psychology, which was to have taken place at Madrid last September, will be held at the Sorbonne, Paris, from July 25 to 28, immediately before the ninth Congress of Philosophy. Further information can be obtained from M. I. Meyerson, Laboratoire de Psychologie, La Sorbonne, Paris, 5e.

The first International Congress of Infantile Psychiatry will be held in Paris from July 27 to August 1. Further information can be obtained from the treasurer, M. Gimbert, 11, Rue Duroc, Paris 7e.

The Royal Society of Tropical Medicine and Hygiene has awarded the Chalmers memorial gold medal for tropical research to Professor R. M. Gordon of Sierra Leone, and the presentation was made at the annual general meeting on June 17. The medal was founded by Mrs. Chalmers in memory of her husband, the late Dr. Albert J. Chalmers. It is awarded every two years in recognition of research of outstanding merit contributing to the knowledge of tropical medicine or tropical hygiene. The recipient must be under 45 years of age at the time of the award.

The trustees of the Lady Tata Memorial Fund announce that, on the recommendation of the Scientific Advisory Committee, they have made the following awards of grants and scholarships for research in blood diseases, with special reference to leukaemia, in the academic year beginning on October 1. Grants for research expenses or for scientific assistance: Dr. Julius Engelbreth-Holm (Copenhagen), Professor Dr. Karl Jármai (Budapest), Professor James McIntosh (London), Professor agrégé Dr. Charles Oberling (Paris), Professor Eugene Opie and Dr. Jacob Furth (New York), Dr. Georg Weitzmann (Leipzig), Dr. Lucy Wills (London). Scholarships: Dr. Jörgen Bichel (Aarhus, Denmark), Dr. Edoardo Storti (Pavia, Italy).

Lieut.-Colonel J. H. Yolland, C.B.E., has been appointed a vice-president of the Kent Branch of the British Red Cross Society.

Sir Harry Lindsay, K.C.I.E., Director of the Imperial Institute, has accepted nomination as President of the Association of Special Libraries and Information Bureaux (ASLIB) for the year 1937–8. The Association will hold its fourteenth annual conference at Gonville and Caius College, Cambridge, during the week-end beginning September 24. Particulars may be obtained from the Secretary of the Association, 31, Museum Street, W.C.1.

Miss Ethel Benwell has retired from the service of the British Medical Association after completing thirty-seven years' work in the Editorial Department. Miss Benwell joined the staff of the *British Medical Journal* on May 28, 1900, and on June 30, 1937, presentations were made to her by the Editor and his immediate colleagues, and by other fellow workers at Tavistock Square.

The fourth Congress of the Medical Women's International Association—of which the Queen is Patron—takes place in Edinburgh from July 13 to 18. The inaugural meeting will be held at 2.30 on Wednesday, July 14, in the McEwan Hall, University of Edinburgh. The speakers include Dr. Sundquist (president of the M.W.I.A.), Sir Thomas Holland (Vice-Chancellor of the University of Edinburgh), Sir Norman Walker, Sir William McKechnie, and representative medical women from different countries. Intending members who have not yet enrolled should apply to the local congress secretary, 2, Chester Street, Edinburgh, for any information.

July 7 marks the centenary of the birth of Sir Morell Mackenzie, the eminent Victorian laryngologist whose textbook on diseases of the throat and nose was for a long time a standard work on the subject. His obituary notice was published in the *British Medical Journal*, 1892, **1**, 363.

Two cases of yellow fever, which has hitherto been unknown in Asia, have recently been reported in Hong Kong.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

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The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

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The address of the B.M.A. Scottish Office is 7, Drumsheugh Garden[illegible]grams: *Associate, Edinburgh*; telephone [illegible] and of the Office of the Irish Free State [illegible].A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone 62550 Dublin).

QUERIES AND ANSWERS

Sun Sensitivity

"F. L." would be glad of suggestions for treating a case of sensitivity to sunlight. The lady concerned has only to go out in the sun for a short time to occasion a blotchy, erythematous, irritable rash of the parts exposed, which lasts for days. Once, when she had an exposure to "artificial sunlight," she had a reaction sufficient to blister. The persistent rash responded immediately to injections of Martindale's "peptone," but exposure to sun still causes some recurrence, although less severe.

Cancrum Oris

Dr. HOPE TRANT (N. Rhodesia) writes: Medical practitioners in Africa must see many cases of cancrum oris amongst native children. I should be glad to have their opinion on how best to treat it. Curettage, in my experience, is of no value.

Splitting Finger-nails

"E. P.," in reply to "Stumped" (*Journal*, May 29, p. 1144), writes: I find that splitting of the finger-nails is often due to the use of liquid nail polish and polish remover. It can be alleviated by rubbing a little oil of almonds on the nails and cuticle at bed-time.

The Aftermath of Sympathectomy

Mr. J. B. OLDHAM, F.R.C.S. (Liverpool), in reply to "Perturbed" (*Journal*, June 19, p. 1295), writes: I feel sure that the reason why "Perturbed" has seen no allusion in the literature to derangement of the bowels or bladder is that lumbar sympathectomy never has any such ill effects. My own experience extends over ten years and covers nearly a hundred cases, all of which have been carefully followed up. No patient has ever had any bladder complications. Those whose bowel function was normal before operation have noticed no change afterwards, while those who were constipated beforehand found that their constipation was either cured or greatly improved. Two of my patients operated on nine years ago have since borne children, so that there can be no fear of the operation interfering with conception or labour. On the other hand, in the male lumbar sympathectomy results in sterility, as the power of ejaculation is lost. I have found that only in a very few cases of Raynaud's disease are the feet affected severely enough to justify operation, but in those few cases in which operation was done the patients have considered the result a complete and lasting cure. Like all other surgeons, however, I have been disappointed with post-ganglionic sympathectomy in the upper limbs. I am convinced that the extraperitoneal approach to the sympathetic chain is preferable to Adson's transperitoneal method, even when both sides have to be operated on. The operation can be done by a simple muscle-splitting incision in under twenty minutes, and affects the patient so little that he can be up and walking in less than a week.

Professor E. D. TELFORD (Manchester) writes: I have during the last six years performed lumbar sympathectomy in more than 200 patients. The operation is a cord ganglionectomy in which the lumbar sympathetic chain is excised over a length corresponding to the bodies of the second, third, and fourth lumbar vertebrae. These patients have been examined repeatedly since the operation and in no single case, male or female, has any bladder, bowel, or sexual disability been evident. It is true that certain disabilities, mainly sexual, are likely to follow resection of the presacral nerve, but this nerve would never be divided in the treatment of vascular disorders of the lower limb. In cases of Raynaud's phenomenon in the lower extremity my experience is that lumbar-cord ganglionectomy results in a cure which is complete, and, I believe, permanent. It is otherwise with the upper limb. My present view is that excision of the stellate ganglion should not be done: the operation is followed by relapse. The pre-ganglionic section which I designed in February, 1935, and have since carried out in some twenty patients has given excellent results in all cases, but further time must elapse before one can say with confidence that these results will last.

Income Tax

Structural Expenditure

"X. Y. Z." recently enlarged his house, including parts used professionally, and had central heating installed. Can he deduct a proportion of such expenditure in computing his income tax liability?

*** No—the expenditure represented capital outlay and not current professional costs. It might, however, be possible to obtain some allowance by way of depreciation, say, at 5 per cent. per annum, for that part of the outlay which relates to the heating of the professional rooms.

LETTERS, NOTES, ETC.

Medical Golf

The summer meeting of the Medical Golfing Society was held at Sunningdale on June 24, when some seventy members competed over a course which was in perfect condition. Several competitions took place, and the following are the results. *Lancet* Cup: T. P. Kolesar. Henry Morris Cup: H. L. Glyn-Hughes. Gordon Watson Cup: J. Grace. Class I: first, H. Lamplough; second, T. P. Kolesar; last nine, V. E. Negus. Class II: first, H. L. Glyn Hughes; second, L. Hartley; last nine, R. Lindsay Rea. Foursomes: (1) Michael Smyth and J. McGrath; (2) Jocelyn Swan and S. Wyard. Knock-out Tournament: winner, N. L. Eckhoff.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

1 Physiological and Pathological Sleep

L. HESS (*Klin. Wschr.*, May 1, 1937, p. 625) draws attention to the fact that it is not always possible to differentiate between natural sleep and pathological states resembling sleep—for example, *hypnosis, narcolepsy, coma* following poisoning, diabetic coma, uraemia, or shock. During physiological sleep the eyelids are completely closed, the cornea is reddened, the pupils are miotic, and the eyeball is turned upward and usually inward. On awakening there is temporary incoordination of movement of the eyes. In pathological states resembling sleep there is no miosis of the pupil, *except in morphine poisoning*, and the eyeballs are not turned upward and inward. In physiological sleep the face is slightly reddened, breathing is fairly regular but slow, the pulse rate is slow, and the blood pressure lowered; there is complete muscular relaxation, but anaesthesia is incomplete. On awakening dreams may be remembered, but the individual feels refreshed, and in many cases sleep may be terminated voluntarily. In pathological states resembling sleep the face remains pale, the breathing is irregular, muscular relaxation is incomplete and may be interrupted by a clonic spasm of individual muscles, and it may be impossible to awaken the patient. On being roused he feels depressed and unrefreshed and may complain of headache. There is amnesia of the coma and the period immediately prior to it. Pathological states last longer than physiological sleep, and cannot be terminated voluntarily. Hess believes that a sleep centre exists in the mesencephalon in front of the nucleus of the oculomotor nerve. Inhibition of this centre and of nerve paths to the cortex and optic thalamus results in physiological sleep. Pathological inhibition in this area results in states similar to sleep, but whereas in physiological sleep inhibition is reversible, it is not so in pathological conditions.

2 Ascorbic Acid

K. U. TOVERUD (*Norsk Mag. Laegevidensk.*, May, 1937, p. 441) has investigated the conditions under which ascorbic acid, vitamin C, is excreted and retained in the human body. This research was stimulated by the observations of Harris and Ray, who found that the daily excretion of ascorbic acid is comparatively low in persons whose intake of vitamin C has been short for some time. They also found that such persons did not show a marked increase of this vitamin in the urine after a large test dose of it. They therefore suggested that the actual amount found in the urine might be an index to the degree of vitamin C deficiency from which the tested person was suffering. Toverud's two main objects were to ascertain the amount of daily excretion of ascorbic acid under normal conditions, and the way in which the normal organism on a good dietary reacted to a large single dose. The author gave orange juice as a source of vitamin C. He found that eight normal women living on a diet containing a little fresh fruit and vegetables, at least half a litre of milk, an egg, bread, and meat or fish excreted on the average 35 mg. of ascorbic acid daily. When half a litre of orange juice, containing 250 mg. of ascorbic acid, was added to the diet 50 per cent. or more of this acid was excreted in the urine during the first twenty-four hours. When ten normal children living on an ordinary mixed diet were tested with 200 to 300 c.cm. of orange juice, not more than 30 per cent. of the ascorbic acid thus given was excreted in the urine. Twelve pregnant women and a certain number of lactating women were tested in the same way, and it was found that their excretion after a test dose was remarkably low. It would appear, therefore, that the requirements of ascorbic acid are greater in childhood than in adult life, still greater in pregnancy, and greatest of all in lactating women.

3 Tuberculin Reactions and Radiographs

O. SCHEEL (*Nord. med. Tidskr.*, May 15, 1937, p. 761) draws attention to the difficulty of classifying the reactions to the Pirquet and Mantoux tests when they are neither definitely positive nor negative, and he admits that the decision is apt to be arbitrary. He has compared tuberculin tests and radiological findings in a series of 1,697 students, with no previous record of tuberculosis, and who had not been vaccinated with B.C.G. They were classified as tuberculin-negative or positive, but among the 851 tuberculin-negative as well as among the 846 tuberculin-positive were several cases in which the reaction was doubtful. In each of the two main groups there were therefore several subgroups. The radiological findings were classified according to whether (1) the abnormalities were confined to the pleurae, (2) they consisted of non-calcified shadows in the lungs with or without pleural changes, or (3) of calcified patches in lungs or glands with or without pleural changes and other shadows. It was found that changes limited to the pleura were as frequent among the tuberculin-negative as among the tuberculin-positive students, the incidence of such changes ranging from 3.1 to 6.5 per cent. in the different subgroups. The author interprets this as indicative of the non-tuberculous character of such pleural changes when unaccompanied by other radiological findings. Non-calcified lung shadows were much more frequent among the tuberculin-positive than among the tuberculin-negative, and were found in from 0 to 6.9 per cent. in the different subgroups of the tuberculin-positive group, but only in from 0 to 1.6 per cent. in the different subgroups of the tuberculin-negative group. The radiological changes, which included calcification, were about twenty times as frequent among the positive as they were among the negative reactors. The author proposes that a border-zone reaction between a positive and a negative Pirquet test should be regarded as one in which an induration between 2 and 3 mm. wide appears forty-eight hours after the first injection. This refers only to infection with the human type of tubercle bacillus.

Surgery

4 Non-specific Chronic Synovitis of the Knee

C. BARTHELS and H. BERNAU (*Zbl. Chir.*, April 3, 1937, p. 778) find few references in the literature to the late stages of simple chronic synovitis of the knee. The condition tends to affect young persons, and to occur ultimately in both knees. There is usually a slight rise of temperature. Pain is slight and depends on the amount of exudate. The authors were able to examine thirty-two cases two to twenty years after the occurrence of the condition. In all cases the diagnosis was certain, as it had been made by biopsy and culture of synovial fluid. In twenty-eight cases only one knee was affected; in eighteen the temperature was slightly raised; and the effusion persisted usually for from ten to twenty weeks. Some form of treatment had been carried out in all the cases, including puncture of the joint, injection of iodoform and glycerin, immobilization with plaster-of-Paris, and *x*-ray and short-wave therapy. One-third of the

patients complained of pain on movement to a greater or lesser extent. *X* rays showed complete cure in one-third of the cases; in another one-third there were signs of early arthritis deformans; and in the others there were grave changes in the knee-joint. The condition began in three cases from the ages of 1 to 10, in nineteen from 10 to 20, in seven from 20 to 30, and in three from 30 to 40. The authors found that as a rule when the condition occurred before puberty complete cure resulted. Even in these cases, however, when the effusion remained over a long period or recurred frequently, changes of the arthritis deformans type were seen. In nineteen cases arising after the age of 16 only four were completely cured. The authors believe that the prognosis depends chiefly on the time for which the inflammatory process persists and on the number of recurrences. In cured cases the effusion lasted usually from three to ten weeks, and in only one case was there a recurrence; in the worst cases the effusion had been present for one year, and in two-thirds there were recurrences. In view of these facts they advocate the making of a small window in the capsule to lessen the duration of the effusion.

5 Cryptorchism

H. BJERRE (*Ugeskr. Laeg.*, May 13, 1937, p. 513) has collected 196 cases of undescended testicle, operated on in Copenhagen between 1900 and 1930, and has found that in 58 per cent. good results were achieved, whereas in 32 per cent. the results were disappointing, and in 10 per cent. the operations were followed by atrophy of the testicles. His control material consisted of 188 cases, in which no operative treatment was attempted. In 63 per cent. the testicles descended into the scrotum unaided, and in almost every case in which this happened the patients had not reached the age of 15. The similarity of the results in these two groups suggests that the operative successes in the former group are precisely those which could have been achieved by a policy of masterly inactivity. These observations contraindicate operative treatment in childhood unless the surgeon has to treat a hernia, or there are bouts of pain indicative of torsion or incarceration of the testicle. If, however, the cryptorchism persists until puberty an operation is indicated, for it will probably have to be undertaken sooner or later on account of complications which grow more frequent with advancing age. At the beginning of puberty the lodging of the testicle in the scrotum offers the only possibility of developing a functionally normal organ, and as its atrophy, if still undescended, begins about the age of 16 it is as well to operate before then. A classification of the patients by age at the time of operation showed that between 0 and 15 the prognosis was identical, whereas after puberty the proportion of successes was halved. The hormone treatment of undescended testicle is, in the author's opinion, in too early and experimental a stage to warrant a considered opinion on its merits.

6 Localized Osteitis Fibrosa

S. KOIDE (*Jap. J. med. Sci. IX Surg.*, March, 1937, p. 27) found a history of early and appreciable trauma in 30 per cent. of cases of localized osteitis fibrosa. In no case was there evidence of a parathyroid tumour, and the calcium content of the blood was approximately normal. The radiographs showed a localized well-delimited bone destruction. Occasionally the tumour formed a localized cystic swelling. Small foci usually destroyed the inner surface of the cortical bone only; larger foci might cause excessive thinning of cortical bone, though the outer surface usually remained smooth. There were no changes in the surrounding soft tissues. There was occasionally spontaneous fracture, but never bony deformity. It was impossible to decide whether the tumour originated in the epiphysis or diaphysis. In no case was there sarcomatous degeneration or metastatic dissemination of the tumour. Infiltration with xanthomatous froth cells was observed in 70 per cent. of cases. These xanthomatous cells belonged to the macrophages and were intimately connected with the cholesterin esters. The neoplastic tissues were generally rich in lipoids, and the tumour cells as well as the giant cells took part in the phagocytosis of the lipoids. The giant cells did not contain any ferrous blood pigments, which pigments as well as lipoids were mainly found in the fusiform histocytes. The author advises conservative surgical treatment even in advanced cases. The tumours should be curetted and filled with paraffin, and resection should only be done as a last resort.

Therapeutics

7 Mandelic Acid in Urinary Infections

E. SCHNOHR and C. JOHANSEN (*Hospitalstidende*, April 27, 1937, p. 453) have treated in the course of a year thirty cases of pyelitis and cystitis with mandelic acid. In all but four cases the diagnosis of pyelitis was verified by cystoscopy and catheterization of the ureters. The mandelic acid was given in the form of sodium amygdalate six times a day. In twenty-three cases the urine was rendered sterile in from three to thirty days. Among the seven failures in this respect were two patients who could not take the mandelic acid for more than a day because it made one of them vomit and increased the dysuria of the other. In a third case the patient left hospital after six days for private reasons. During the treatment there was in most cases a rapid and striking clinical improvement. The author does not recommend this treatment until a few days in bed have reduced the toxic phenomena and lowered the temperature, for he believes that during the acute stage of pyelitis the renal parenchyma is involved, and might suffer if it had to excrete a highly acid urine. While several other observers have found casts and albumin in the urine under mandelic acid and ammonium chloride treatment, the author never has, and he traces this immunity to the precaution of keeping the patient in bed for a few days. He considers this treatment superior to all others in dealing with infections of the urinary tract, and in a postscript to his paper he states that in eight cases he has achieved the same therapeutic successes with a new preparation of mandelic acid combined with a calcium salt, which is tasteless and gives rise only to insignificant digestive disturbances.

8 Transcerebral Bee-venom Ionophoresis

P. CERANKE, G. SCHEID, and A. STERN (*Med. Klinik*, April 30, 1937, p. 609) have obtained encouraging results with transcerebral bee-venom ionophoresis in cases of high blood pressure. The bee venom is rubbed into the skin of the forehead. The positive electrode, made of a sheet of lead measuring 14 by 6 cm. and padded with a folded towel about 5 cm. thick, is applied to the forehead. A similar electrode is applied to the nape of the neck and is connected to the negative pole. A galvanic current of 2 to 5 milliamperes is applied for fifteen minutes, and the treatment is given daily. The skin under the electrode reddens and may even blister. The treatment proved quite harmless and the therapeutic results were consistently good.

9 Novalgin in Biliary Colic

G. V. BEIN (*Münch. med. Wschr.*, April 23, 1937, p. 651) recommends intravenous injections of novalgin for the relief of biliary colic. He injects 4 to 5 c.cm. of a 50 per cent. solution of novalgin even in debilitated patients. The pain disappears usually after about five minutes. Of the 124 cases treated only 7 per cent. failed

to respond to this medication. In very severe attacks the author recommends a simultaneous injection of 2 c.cm. of novatropin. According to him this medication is preferable to morphine, as it does not daze the patient and there is no danger of drug addiction in chronic cases.

Anaesthesia

10 High Lumbar Anaesthesia

R. FINALY (*Nederl. Tijdschr. Geneesk.*, April 24, 1937, p. 1815) states that until recently lumbar anaesthesia was used only in operations below the umbilicus. Within the last few years, however, Howard Jones's solution of hypobarium and percaine has been employed according to Sebrechts's fractional method for supra-umbilical operations. Since 1934 Finaly has used this method in 103 cases. In 68 per cent. of these cases the anaesthesia reached above the umbilicus in operations involving the stomach, colon, liver, and gall-bladder, and the same applied to 29 per cent. of gynaecological cases. Finaly comes to the conclusion that Sebrechts's method should not be confined to operations in the epigastric region, and that it is superior to all other methods in its safety and in the duration of the anaesthesia.

11 General Spinal Anaesthesia

E. G. JAUREGUI (*Cirurg. Ciruj.*, March, 1937, p. 135) gives a detailed description of Koster's method of general spinal anaesthesia, laying special emphasis on the size of the needle and the rate of intrathecal injection of the fluid. After dealing with the prevention of complications caused by the anaesthetic, such as headache and paralysis of the bladder, he dismisses the view that anaesthetic can be conveyed to the bulbar centres. He alludes to the experiments of Koster, showing that strong solutions of novocain applied to the upper part of the spinal cord, while producing complete anaesthesia, do not affect the cardiac or respiratory rhythm. Nervous conductivity under the influence of the anaesthesia is at first preserved, but afterwards disappears suddenly without any period of excitability.

12 Analgesia in Labour

A. D. GLADISH and R. O. ELDER (*Sem. méd.*, B. Aires., April 1, 1937, p. 932), who record ten illustrative cases in women aged from 20 to 29, employed nitrous oxide, ethylene, and cyclopropane as analgesics in labour, and have come to the conclusion that these agents, unlike chloroform and ether, have no influence on the uterine contractions. In some of the cases the uterine relaxation between the contractions was greater with the analgesic than without it. In two of the cases treated with cyclopropane uterine inertia occurred accompanied by haemorrhage. The authors propose to study further this rare condition in order to determine whether or not their results agree with those of American writers who have not observed this complication.

13 General Anaesthesia in Tonsillectomy

T. BETSHOLTZ (*Hygiea*, Stockh., May 15, 1937, p. 319) reports from a hospital in Lund, Sweden, follow-up studies of 1,405 persons on whom tonsillectomy had been performed in the five-year period 1930–5. These studies were prompted by the case of a woman, aged 38, on whom tonsillectomy had been performed under intratracheal nitrous oxide anaesthesia for the relief of recurrent attacks of sore throat. Shortly after the operation she developed a pulmonary abscess from which she ultimately recovered under conservative treatment. Wondering if similar or other ill effects had escaped his notice among the 1,726 patients operated on, the author addressed a questionary to them, and in 1,405 cases he received answers. Though no other case of pulmonary abscess had to be recorded, there were three cases in which pleurisy and two cases in which bronchitis occurred after the tonsillectomy under nitrous oxide anaesthesia. As bronchitis is no uncommon event in the highly infectious atmosphere of a throat and ear hospital, these two cases cannot necessarily be regarded as due to the operation or anaesthetic; and there remain the one case of lung abscess and the three cases of pleurisy for which the operation or the anaesthetic, or both, might be held responsible. This represents a risk of 0.3 per cent., and as it is only possibly, not certainly, connected with the general anaesthetic given, the author does not propose to abandon the nitrous oxide anaesthesia, which he has employed for tonsillectomy during the five-year period under review. He is confirmed in this decision by the reflection that the risks of the above-mentioned complications cannot with certainty be eliminated by performing tonsillectomy under local anaesthesia.

14 Cyclopropane Anaesthesia

H. R. GRIFFITH (*Canad. med. Ass. J.*, May, 1937, p. 496) has personally administered cyclopropane more than 2,500 times since 1933 with increasing satisfaction. He considers that it most nearly approaches the ideal anaesthetic agent, and that it can be used for almost every type of patient and for all kinds of operation. Its outstanding advantages are the rapid and easy induction, complete oxygenation, good relaxation, and prompt recovery with little after-effects. As his experience has increased he has used ether less frequently, and now hardly ever requires it, even for upper abdominal operations. The smoothness of the post-operative course is shown by a comparison of the last 100 cases of Caesarean section, done under cyclopropane, with the previous 100 cases, done mainly under ethylene and ether. In the latter there were twenty-four cases of severe distention, seven of which went on to paralytic ileus, whereas with cyclopropane there were only two cases of distension and none of ileus. It has also been used with success in 300 obstetrical deliveries. The author considers that the increase of capillary bleeding sometimes ascribed to cyclopropane is open to question, and that the explosion risk is no greater than when other inflammable agents, such as ether and ethylene, are used. The Waters carbon dioxide absorption technique which he adopted helps to reduce this risk.

15 Intravenous Pentothal Sodium

J. H. HUTTON and R. M. TOVELL (*Surg. Gynec. Obstet.*, May, 1937, p. 888) record 2,700 administrations of pentothal sodium for intravenous anaesthesia. They consider that it is the most effective short-acting barbiturate yet introduced, and that its rapid destruction in the body allows a degree of control by intermittent injection similar to that given by open ether. Except in minor cases they recommend preliminary sedation with 1½ grains of nembutal and 1/6 grain of morphine, to which may be added 1/150 grain of atropine if inhalation anaesthesia is to follow. The 5 per cent. solution is prepared before use, and should be clear, of greenish-yellow colour, and with a slight odour of sulphur. The average initial dose for adults is 4 c.cm. given in fifteen to twenty-five seconds, after which further injections of 1/2 to 1 c.cm. are made as required. There is seldom any tremor or movement during induction, and restlessness on recovery is rare. Since the drug is a powerful depressant the respiration must be carefully watched and the airway maintained, while the pulse rate and blood pressure should be frequently observed. It should only be used by experienced anaesthetists capable of dealing with emergencies. Pentothal may also be given for controlling convulsions caused by drugs, etc., and it may be used for prognosis in Raynaud's disease.

Obstetrics and Gynaecology

16 Length and Weight of Infants at Birth

F. A. WAHL (*Dtsch. med. Wschr.*, May 14, 1937, p. 769) reports his observations from the University Maternity Hospital in Cologne on 5,901 full-term infants born in the period 1932–5. Their average length at birth was 51.47 cm. and their average weight was 3,404 grammes. These figures are considerably in excess of those quoted as normal averages in the textbooks, and the author is inclined to associate this with an average duration of pregnancy of 284 to 285 days, an interval which is four to five days longer than that hitherto regarded as the average gestation period in Germany. Three of the authors he quotes give 50 cm. as the average length of a normal full-term infant at birth, and the average weight in grammes is 3,000, 3,200, and 3,000 to 3,300 respectively. An average, struck by fusing the figures of these three authors with those of two others, gives a length of 50 cm. and a weight of 3,250 grammes. The author puts the duration of pregnancy at 285 days after menstruation, 273 to 274 days after ovulation, and 270 days after conception. The corresponding number of days according to textbook reckonings are 280, 270, and 265 respectively. The author connects the changes in length and weight of infants at birth and in the duration of pregnancy with the improved circumstances under which the expectant mother lives in Germany at the present time, changes comparable with those in the average height and weight of adult human beings and in their expectation of life.

17 Actinic and Operative Sterilization

E. MOMIGLIANO (*Ann. Ostet. Ginec.*, March 31, 1937, p. 251) carried out investigations on rabbits which showed that sterilization by *x* rays produced a much slower and less intense involution of the uterus than did operative sterilization. In contrast to bilateral ovariotomy, irradiation of the ovaries did not interrupt the oestral phenomena, which continued for a relatively long period, although their rhythm was somewhat different from the normal. The maturation of the Graafian follicles continued even when the *x* rays had induced a general involution of the follicular apparatus, and even for some time after the ovary had become merely a mass of interstitial tissue. Momigliano concludes that the secretion of folliculin is not only due to the cells of the granulosa but also to the interstitial cells. The persistence of these cells after involution of the follicular apparatus accounts for the persistence of the internal secretion of the ovary after actinic sterilization, and thus explains the differences occurring not only locally but throughout the system after operative sterilization.

18 Expulsion of Foetus through Placenta Praevia

O. VIANA (*Rif. med.*, April 17, 1937, p. 563) records the case of a multipara, aged 41, who had previously undergone Caesarean section for placenta praevia and had come to term with her sixth pregnancy without any uterine haemorrhage. The foetus died, but was not expelled owing to adhesion of the os internum to a centrally placed placenta praevia. Labour was induced, and the foetus was delivered through the placenta without any haemorrhage. Subsequent recovery was uneventful.

19 Abnormalities of the Bony Pelvis

R. L. LIVCHINA (*Gynéc. et Obstét.*, April, 1937, p. 274) reviews 13,200 deliveries which took place at the Obstetric Clinic of the Medical Institute of Charkov. Fifteen per cent. of the women suffered from narrow pelvis, and in all these cases labour was managed on strictly conservative lines. Spontaneous delivery occurred in 91.5 per cent. with no maternal mortality, and with an infantile mortality of 2.8 per cent. In 8.5 per cent. surgical intervention was thought advisable. In these cases the maternal mortality was 0.6 per cent. and the infantile mortality 34.5 per cent. The average maternal mortality for the 13,200 cases was 0.05 per cent., the average infantile mortality 5.5 per cent. In cases of disproportion the author considers Caesarean section as the treatment of choice. Abdominal Caesarean section was carried out in only 0.25 per cent. of all cases, vaginal section in 8.25 per cent. The author concludes that spontaneous delivery should be aimed at in all these cases in preference to Caesarean section.

Pathology

20 Castration and Mammary Carcinoma

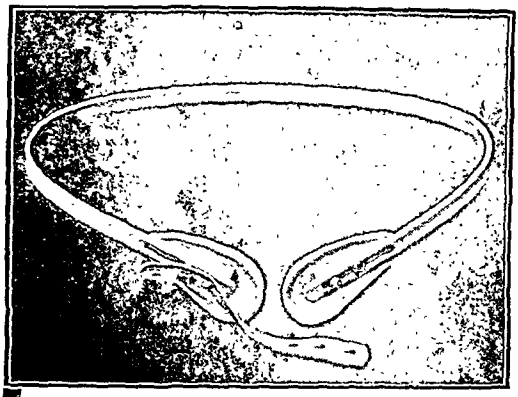
W. E. HERRELL (*Amer. J. Cancer*, April, 1937, p. 659) refers to recent animal experiments dealing with the incidence of mammary carcinoma in castrated mice. It was found that castration of female mice when under 6 months of age, in a strain in which the incidence of mammary carcinoma was high, led to a decrease in tumour formation. Castration between the fifteenth and twenty-second days of life prevented the occurrence of spontaneous adenocarcinoma of the breast altogether. Animal experiment establishes the part played by ovarian activity in the development of carcinoma. Its influence is specific, for oöphorectomy does not lead to resistance against other types of spontaneous malignant tumour. Studying the subject in the human female, Herrell reviewed 1,906 records in the Mayo Clinic of women operated on for mammary carcinoma, and 1,011 control records of women of 40 years and over without carcinoma of the breast. In all cases a history of oöphorectomy or castration by *x* rays or radium was sought for, and the time between the castrating procedure and the origin of the complaint determined. The author found that in 1,906 cases of mammary carcinoma twenty-eight patients (1.5 per cent.) had been previously castrated. In eight of these oöphorectomy had been performed within three years of the onset of the cancer. In the control series of 1,011 patients 15.4 per cent. had been oöphorectomized. Of eighty-five patients with a partial oöphorectomy fifteen required total extirpation of the ovaries at a later date. The author concludes that since the incidence of castration in the non-cancer group is ten times as great as that in the cancer group, the function of the ovaries in the production of mammary carcinoma may be as definite in human beings as it is in animals.

21 Cellular Diagnosis

F. WUHRMANN (*Münch. med. Wschr.*, May 28, 1937, p. 860) describes a special histological technique for the investigation of secretions and biopsies obtained by puncture in cases of neoplasm. The material is centrifuged and the sediment embedded in paraffin. The technique is described in detail. The diagnosis must be based on the examination of a conglomeration of cells and not of isolated ones. This applies equally to fresh specimens, however good the staining methods may be. The clusters of neoplastic cells can be distinguished from endothelial cells by their pale protoplasm after they have been stained with the usual haemalum-eosin. Endothelial cells may be found in exudates caused by neoplasm, but they are mainly typical of pleural exudates in cases of pulmonary infarcts, in peritoneal effusions, and in Laënnec's cirrhosis of the liver. They are usually absent in tuberculous effusions, but lymphocytic sediments suggest tuberculosis. The relative numbers of lymphocytes and leucocytes in the blood count vary according to the intensity of the inflammation, the leucocytes increasing as the inflammatory process becomes more pronounced.

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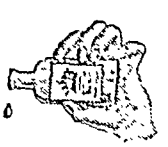
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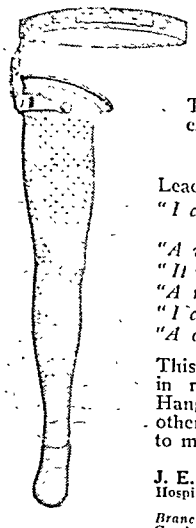




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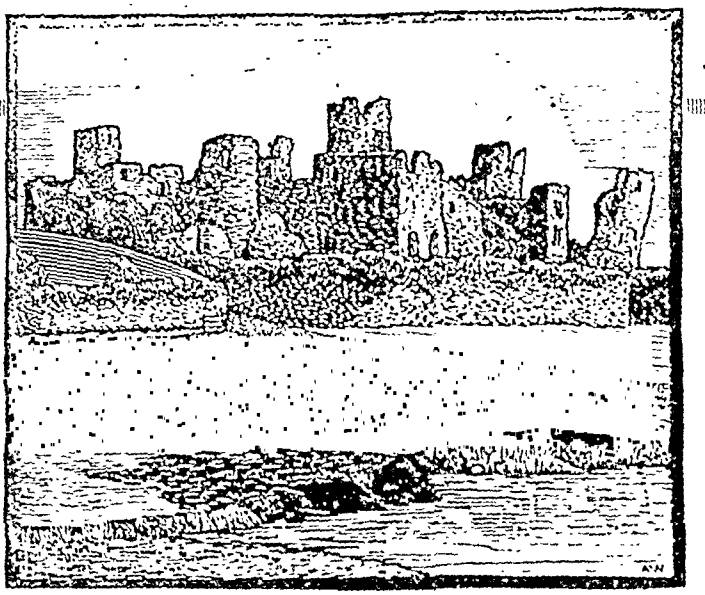
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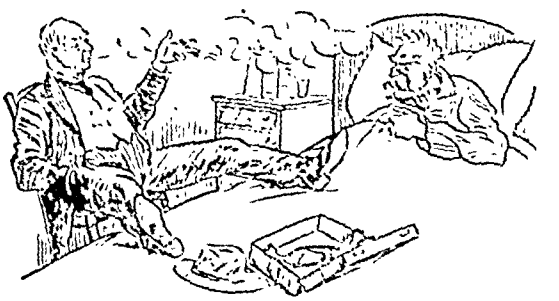
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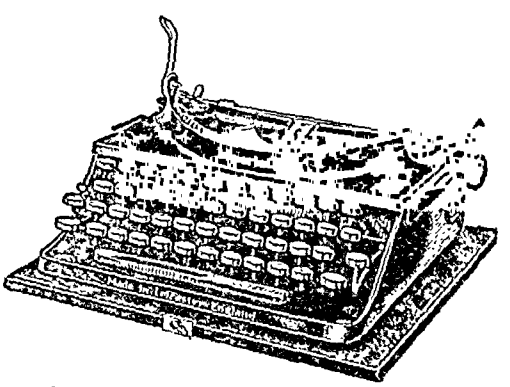
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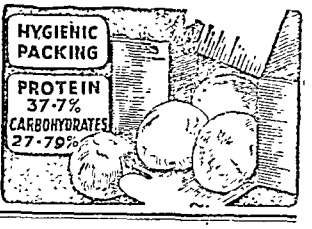
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For particulars apply to the Medical Superintendent at the Hospital, or to the Chief Officer, Mental Hospitals Department, Shell-Mex House, Strand, W.C.2.

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This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble, temporary patients, and certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms, with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

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MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation Therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

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The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate, a mile of sea coast forms the boundary. Patients may visit this Branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. *There is trout-fishing in the park.*

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For terms and further particulars apply to the Medical Superintendent (Telephone No. 2356 and 2357 Northampton), who can be seen in London by appointment.

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A PRIVATE HOSPITAL for the treatment of mental and nervous illnesses. Conveniently situated and easy of access from all parts. Six acres of ground, highly situated, facing Finsbury Park. Voluntary and Temporary Patients received without certification. Occupational Therapy, Psychotherapy, and other modern forms of treatment.

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Applications can be considered on behalf of patients of the educated classes in a presumably curable condition.
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Every facility for specialized investigation and treatment is provided in the Lord Wakefield Science and Treatment Unit. In this Unit is found *X*-Ray and Dental Departments and the Bio-Chemical, Pathological, and Psychological Laboratories.
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For forms and further particulars apply to the Physician-Superintendent at the Hospital

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The only extra charge is that for a complete alimentary *x*-ray examination, or for *x*-ray therapy.

All the usual forms of treatment are given at Ruthin Castle. The climate is mild. The annual rainfall is 30.5 inches that is, less than the average for England. There is central heating throughout.

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This REGISTERED HOSPITAL, with a SEASIDE BRANCH at Colwyn Bay, N. Wales, is for the treatment and care of those of the Upper and Middle Classes suffering from MENTAL and NERVOUS DISEASES.

The Hospital is governed by a Committee appointed by the TRUSTEES of the Manchester Royal Infirmary.

In addition to the Main Building there are separate villas. Extensive grounds. Hard and grass tennis courts, cricket and croquet grounds, and a court for badminton. There are also wireless installations. Golf may be had within easy distance. Occupational therapy.

VOLUNTARY, TEMPORARY, AND CERTIFIED PATIENTS received.

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Residential treatment of
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Including Alcoholism and other Addictions
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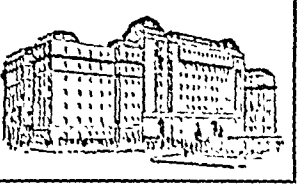
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2 Residential Medical Officers (for emergencies).
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Drugs and Dressings free (other than Proprietary Articles).
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FOR MENTAL DEFECTIVES, REDHILL, SURREY.
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PATRON: H.M. THE KING

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Terms include (with rare exceptions) all forms of treatment, for which there are exceptional facilities as there is a staff of Consultant Specialists, and the Central Laboratory of London County Mental Hospitals is attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., F.R.C.P., F.R.C.S., Medical Superintendent.

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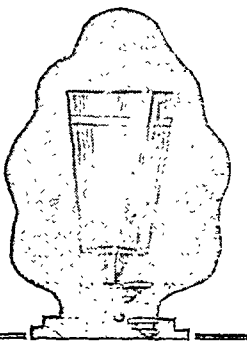
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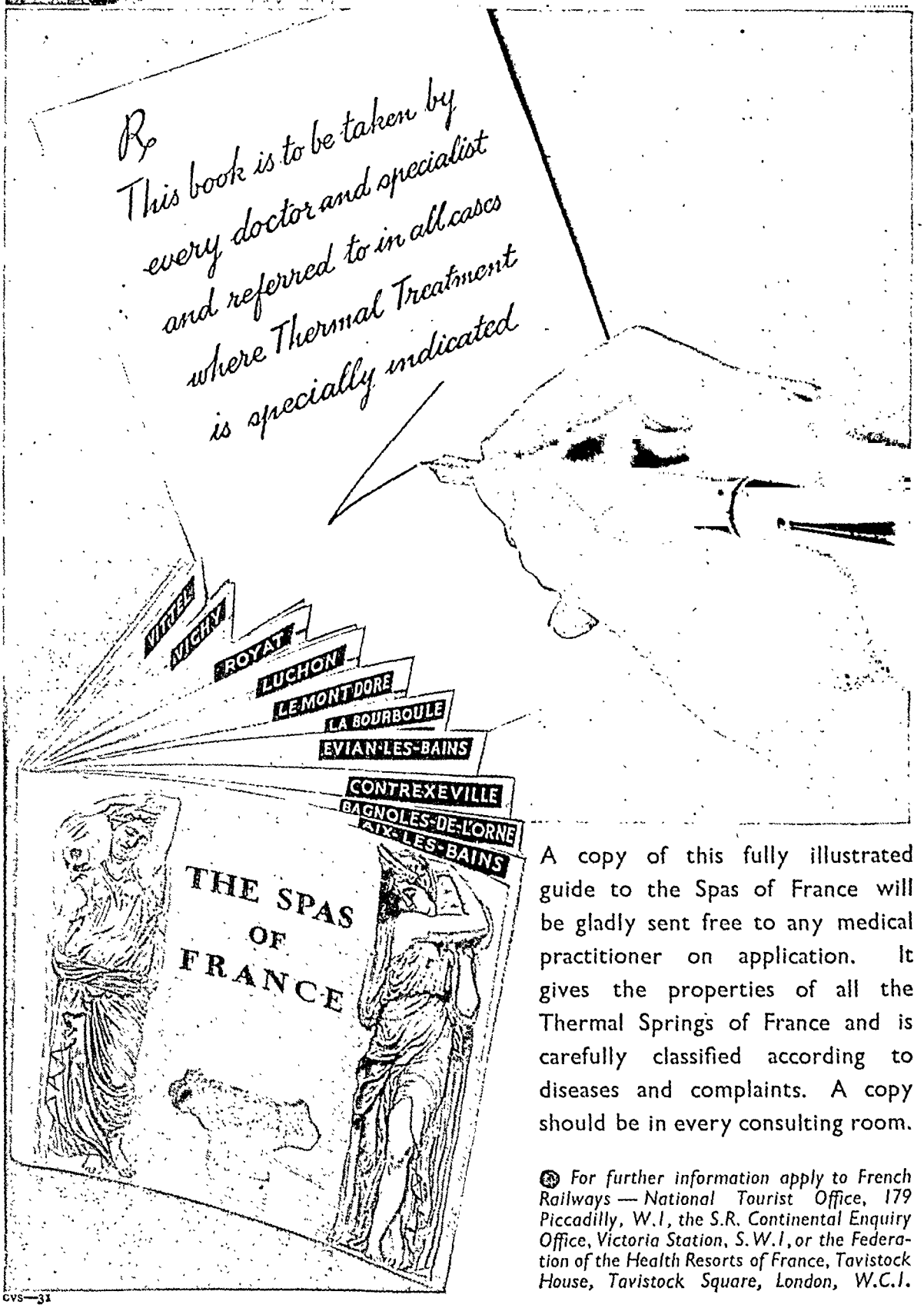
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Further particulars may be obtained from:—Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, London Hospital Medical College, Turner Street, London, E.1.

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Further particulars may be obtained from the undersigned, by whom three copies of application (which need not be printed) must be received not later than July 7th, 1937.

LOUIS S. THOMAS,
University College, Cardiff. Registrar.
June 14th, 1937.

HIS MAJESTY'S COLONIAL SERVICE

COLONIAL MEDICAL SERVICE.

A vacancy exists in TRINIDAD for a MEDICAL OFFICER OF HEALTH (VENEREAL DISEASES SERVICE).

Qualifications.—Candidates must be British subjects and possess a medical qualification registrable in the United Kingdom. They must hold the Diploma of Public Health and have had special experience in the treatment and administration of venereal diseases.

Duties.—Attendance at Venereal Diseases Clinics and the treatment and administration of venereal disease; propaganda and educational work in districts when required, and such other public health duties as may be prescribed by the Director of Medical Services. The officer appointed may be required to serve in any district in the Colony.

Salary.—£600 a year, rising by £25 to £800.

Terms of Appointment.—The appointment is pensionable, but the officer will be on probation for two years. Private practice will not be allowed.

Quarters.—A housing allowance of £100 a year is payable.

Passages.—The selected candidate, who will be required to proceed to Trinidad as soon as possible, will be provided with free first-class ocean *passages for himself and his family, not exceeding* five persons in all, on first appointment. Leave passages are not provided. Further particulars and forms of application may be obtained from the DIRECTOR OF RECRUITMENT (Colonial Service), 2, Richmond Terrace, Whitehall, London, S.W.1.

CITY OF NOTTINGHAM

ASSISTANT SURGICAL OFFICER—City Hospital.

Applications are invited from duly qualified Medical Practitioners for the post of Assistant Surgical Officer at the City Hospital (981 beds).

Salary £250 per annum, with board-residence, laundry.

Appointment will be for six months, with a prospect of renewal for a further six months.

The duties will be chiefly surgical, under the direction of a staff of visiting-surgeons, and subject to the control of the Medical Superintendent. Applicants should have had previous Hospital experience.

The appointment will not be subject to the Corporation's Superannuation Scheme.

Application forms and further particulars may be obtained from the undersigned, to whom they should be returned forthwith.

The appointed officer to commence duties at earliest opportunity.

Canvassing, directly or indirectly, is forbidden.

J. E. RICHARDS,
The Guildhall, Nottingham. Town Clerk.
June 28th, 1937.

COUNTY BOROUGH OF PRESTON.

SHAROE GREEN HOSPITAL. (250 Beds.)

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER (female). Applications are invited from fully qualified and registered practitioners for the above appointment. Salary at the rate of £100 per annum, with full board and residence. The appointment will be for a period of six months, and at the end of this period the successful applicant may, subject to satisfactory service, be promoted to the post of Senior Assistant Resident Medical Officer for a further period of not more than six months.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should reach the Medical Superintendent not later than first post on Saturday, July 24th, 1937.

THE KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION.

ASSISTANT TUBERCULOSIS MEDICAL OFFICER (Resident)

Applications are invited from duly registered medical practitioners (male, single) for the post of Assistant Tuberculosis Medical Officer (Resident) at the Sully Hospital, Sully, Glam. (300 beds for the treatment of pulmonary tuberculosis), situate between Penarth and Barry.

Salary £500 per annum, rising by annual increments of £25 to £700 per annum, less the value of emoluments amounting to £100 per annum.

Preferably candidates should have had six months' resident experience in a special Institution (hospital or sanatorium) for the treatment of pulmonary and/or non-pulmonary tuberculosis, with eighteen months' experience in general clinical work, of which six months should have been spent in a hospital not confined to the treatment of tuberculosis. Experience in anæsthetics also desirable.

The person appointed to the above post will be required to pass a medical examination and to contribute 5 per cent. of his salary to the Superannuation Fund of the Association. Applicants not already in the service of the Association must be under 45 years of age.

Applications, stating age, qualifications, experience, etc., together with copies of three recent testimonials, should reach the undersigned not later than Thursday, July 15th, 1937.

Memorial Offices, D. A. POWELL,
Westgate Street, Principal Medical Officer.
Cardiff.

COUNTY BOROUGH OF CROYDON.

PUBLIC HEALTH DEPARTMENT.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER FOR OBSTETRICS.

Applications are invited from qualified Medical Men or Women for the post of ASSISTANT MEDICAL OFFICER FOR OBSTETRICS. Candidates must have had practical hospital experience in Gynæcology and Obstetrics, and of ante-natal and post-natal clinics.

The appointment will be for twelve months, and the salary will be £300 per annum, with board, residence and laundry valued at £140. The successful candidate will have quarters at Mayday Hospital, Thornton Heath.

The Officer appointed will be on the staff of the Medical Officer of Health, and work under his administrative supervision.

Application forms may be obtained from the Medical Officer of Health, Town Hall, Croydon, on receipt of a stamped, addressed foolscap envelope, and should be returned to him not later than 11 a.m. on Monday, July 19th, 1937, together with copies of three testimonials of recent date. Canvassing in any form is prohibited.

Town Hall, JOHN M. NEWNHAM,
Croydon. Town Clerk.
June 23rd, 1937.

BRIDPORT AND LYME REGIS BOROUGHS, BRIDPORT AND BEAMINSTER RURAL DISTRICTS.

Applications are invited for the appointment of MEDICAL OFFICER OF HEALTH for the above united District, the approximate population of which is 23,409. The Officer appointed must hold the D.P.H. and will be required to reside in the District and devote his whole time to the work. He will also be required to provide duly qualified Locum Tenens while he is on holiday.

Salary £800 per annum; in addition an allowance of £50 per annum will be paid for travelling and subsistence expenses.

The appointment will be subject to the approval of the Ministry of Health and may be determined on either side at any time on three months' notice.

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should be sent to the Town Clerk, Bridport, Dorset, to whom any enquiries relating to the appointment should be addressed. Last day for receipt of applications, July 5th.

Canvassing directly or indirectly, will disqualify.

G. EDGAR HOWARD,
Town Clerk, Bridport.
Town Clerk's Office, Bridport.
Dated June 23rd, 1937.

ROYAL AIR FORCE MEDICAL SERVICE

Applications are invited from medical men for appointment to commissions in the Medical Branch of the Royal Air Force for entry in September, 1937.

Candidates must be of pure European descent. They must be British Subjects, the sons of British Subjects and registered under the Medical Acts.

Candidates must be under *28 years of age* and will be selected after interview by a selection board without competitive examination.

Hospital appointments held since qualifying will, under certain conditions, qualify candidates for antedate of commission up to a maximum of one year; the age of entry may, if necessary, be increased by a period equal to the "antedate."

Selected candidates will be appointed to short service commissions (for 3 years extendible to 5 years) followed by 4 years' service in the Reserve, and will be eligible to be considered for Permanent Commissions during their second or third year of service. Officers not selected for permanent commissions receive gratuity as follows, on transferring to the Reserve:—

On completion of 3 years—£400.
On completion of 5 years—£1,000.

Copies of the regulations for entry and conditions of service, including rates of pay and allowances, also form of application, may be obtained on application from:—

The Secretary,
Air Ministry (D.M.S.),
Adastral House,
Kingsway, W.C.2.

Completed applications from intending candidates for the vacancies in September, 1937, must be received in the Air Ministry not later than the 15th of July, 1937.

ROYAL NAVAL MEDICAL SERVICE.

Vacancies exist for Medical Officers in the Royal Navy, and applications are invited for entry in October, 1937.

Candidates below the age of 28 years are preferred, and they must be registered under the Medical Acts. No examination in professional subjects will be held, but candidates will be required to attend for interview by a Selection Board.

Selected candidates will be entered for Service for a period of three years in the first instance, which may be extended to five years at the discretion of the Admiralty.

At the end of three years' service officers may retire with a gratuity of £400, but those who serve for five years will receive £1,000.

At the end of five years' Short Service permanent commissions will be given to selected officers who wish to make the Naval Medical Service their permanent career. Officers transferred to the permanent list will receive a gratuity of £1,000 (less Income Tax).

Opportunities are available for officers on the permanent list to specialise, and ample provision is made for Post-Graduate study.

Copies of the regulations for entry and conditions of service, including rates of pay and allowances, may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1, and from the Deans of all Medical Schools.

Applications for entry from intending candidates must be received not later than August 31st, 1937.

COUNTY COUNCIL OF MIDDLESEX.

SURGEON—GRADE I., WEST MIDDLESEX COUNTY HOSPITAL, ISLEWORTH.

Applications are invited from registered Medical Practitioners for the above appointment on the pensionable staff. The appointment is a senior one in the Council's general hospital service and applicants are expected to be medical men or women of high qualification and professional attainments, who are devoting their time wholly or chiefly to the practice of general surgery. The officer appointed will work under the direction of the Medical Superintendent of the Hospital and will give his whole time to the duties of the post. He must be prepared to undertake the teaching of students if required, and to carry out such other duties as the County Council may from time to time direct.

The Hospital has some 1,350 beds, about 600 of which are devoted to the treatment of acute conditions. There is a separate maternity wing, a pathological laboratory and animal house, and departments of orthopaedics, radiology, electrotherapy and ophthalmology.

Salary £1,000 per annum, rising by annual increments of £50 to £1,500 per annum. The salary is inclusive and any fees received by the officer appointed must be paid over to the County Council.

The appointment is non-resident, but the successful candidate will be required to reside within a short distance of the Hospital. The appointment, which will be subject to medical examination, will be held during the pleasure of the Council, and is terminable by three months' notice on either side.

Applications, stating age, qualifications and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than July 10th. Relationship to any member or officer of the Council must be disclosed in the application. Application forms are not provided. Envelopes must be endorsed "Surgeon, West Middlesex County Hospital."

Canvassing, directly or indirectly, will be a disqualification.

C. W. RADCLIFFE, "Z."
Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1.
June 14th, 1937.

CITY OF PORT-OF-SPAIN.

APPOINTMENT OF A MEDICAL OFFICER OF HEALTH.

The Port-of-Spain City Council invite applications for the post of Medical Officer of Health for the City of Port-of-Spain.

The duties of the office are as set forth in the bye-laws made by the Central Board of Health and published in the Trinidad Royal Gazette of October 25th, 1917, page 1975-77.

Every applicant must be, or entitled to be, a member of the Medical Board of Trinidad and shall be the possessor of a Diploma of Public Health, Sanitary Science or State Medicine, registered or entitled to be registered in Great Britain and Ireland.

The office is a whole time one and pensionable under the provisions of the Municipal Corporations (Pensions) Ordinance, No. 29 of 1936. The salary attached to the post is £800 per annum, rising by equal annual increments of £25 to £1,000, with a travelling allowance of £75 a year.

The person appointed will be required to furnish a bond in the sum of £100 for the due performance of his duties.

Applications, stating age, qualifications and experience, should reach the undersigned at the Town Hall, Port-of-Spain, Trinidad, B.W.I., not later than July 31st, 1937.

The Town Hall, Port-of-Spain, Trinidad, B.W.I.
April 29th, 1937.

E. PRADA,
Town Clerk.

SUNDERLAND EDUCATION COMMITTEE.

APPOINTMENT OF ASSISTANT SCHOOL DENTIST (MAN).

The Committee invites applications from duly qualified Dental Surgeons, not more than 35 years of age, for the post of Assistant School Dentist

The person appointed will be responsible, under the Chief School Medical Officer, for the Dental Inspection and Treatment of school children and will be required to devote his whole time to the duties of the office.

Salary £450 per annum.

The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the selected candidate will be required to pass a medical examination.

Applications, to be made on forms which may be obtained from the undersigned, must be returned on or before Wednesday, July 14th, 1937, accompanied by copies of not more than three recent testimonials.

Canvassing will be a disqualification.

W. THOMPSON,
Director of Education.

Education Offices, 15, John Street, Sunderland.
June, 1937.

COUNTY COUNCIL OF MIDDLESEX.

SENIOR DENTAL OFFICER.

Applications are invited for the above appointment on the pensionable staff. Applicants must be fully qualified and registered dental surgeons of wide experience.

The duties of the post include the dental inspection and treatment of school children, and of women and young children under the Council's maternity and child welfare scheme, the supervision of the work of the Council's staff of assistant dental officers, and such other clinical or administrative duties as the County Council may from time to time direct.

The officer appointed will be required to commence duty on October 11th, 1937, to devote his whole time to the duties of the post, will not be allowed to engage in private practice, and will work under the supervision of the County Medical Officer.

Salary £700 per annum, rising by annual increments of £25 to £900, together with out-of-pocket travelling expenses while on duty.

The appointment, which will be subject to medical examination, will be held during the pleasure of the Council, and is terminable by three months' notice on either side.

Applications, stating age, qualifications and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than July 10th. Relationship to any member or officer of the Council must be disclosed in the application. Application forms are not provided. Envelopes must be endorsed "Senior Dental Officer."

Canvassing, directly or indirectly, will be a disqualification.

C. W. RADCLIFFE, "Z."
Clerk to the County Council.

Middlesex Guildhall, Westminster, S.W.1.
June 17th, 1937.

BOROUGH OF ILFORD.

APPOINTMENT OF
(a) ASSISTANT MEDICAL OFFICER OF HEALTH (male);
(b) ASSISTANT MEDICAL OFFICER OF HEALTH (female).

Applications are invited from legally qualified medical practitioners for the undermentioned whole-time appointments:

(a) ASSISTANT MEDICAL OFFICER OF HEALTH (male), at a commencing salary of £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum for duties in connection with the Maternity, Child Welfare and School Medical Services, and other Public Health work. Candidates must possess the Diploma of Public Health or similar qualification.

(b) ASSISTANT MEDICAL OFFICER OF HEALTH (female), at a commencing salary of £400 per annum, rising by annual increments of £25 to a maximum of £550 per annum, with free board and residence at the Corporation's Isolation Hospital, for duties in connection with Maternity and Child Welfare work, School Medical Inspection, and general Public Health work. Candidates must possess the Diploma of Public Health or similar qualification.

Both the above appointments will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and to formal agreement, and the selected applicant will be required to pass a medical examination by and to the satisfaction of the Medical Officer of Health. The appointment will also be subject to three months' notice on either side.

Applications on the prescribed form, obtainable from my office, must be received by me at the Town Hall, Ilford, not later than Tuesday, July 6th, 1937.

Canvassing, directly or indirectly, will be a disqualification.

Town Hall, Ilford.
June 22nd, 1937.

CHARLES N. ROBERTS,
Town Clerk.

COUNTY BOROUGH OF OLDHAM.
Municipal Hospital.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners for the post of Resident Assistant Medical Officer.

Salary £200 per annum, with board, residence and laundry.

Candidates should be unmarried.

The appointment will, in the first instance, be for a period of six months. The successful applicant, however, will be eligible for reappointment for a further period of six months.

The Hospital comprises 375 beds, with facilities for gaining experience in medicine, surgery, midwifery, and diseases of children.

Application forms may be obtained from the Medical Officer of Health, Town Hall, Oldham, and should be returned, endorsed "Resident Assistant Medical Officer," as soon as possible, but not later than Monday, July 12th, 1937.

JOSEPH J. WILLIAMS, LL.D.,
Town Clerk.

Town Hall, Oldham.
June 21st, 1937.

COUNTY COUNCIL OF MIDDLESEX.

ASSISTANT PATHOLOGIST.

Applications are invited for the pensionable appointment of ASSISTANT PATHOLOGIST to WEST MIDDLESEX COUNTY HOSPITAL, ISLEWORTH. Candidates must be registered Medical Practitioners, with special knowledge and experience in pathology, who are engaged wholly or chiefly in the practice of this branch of medicine.

The officer appointed must devote his whole time to the duties of his office. He will not be allowed to engage in private practice, and any fees received by him must be paid over to the Council. The appointment, which will be subject to medical examination, will be held during the pleasure of the Council, and is terminable by three months' notice on either side.

Salary £650 per annum, rising by annual increments of £25 to £800 per annum.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than July 10th. Application forms are not provided. Envelopes must be endorsed "Assistant Pathologist, West Middlesex County Hospital."

Canvassing, directly or indirectly, will be a disqualification.

C. W. RADCLIFFE "Z."
Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1.
June 17th, 1937.

COUNTY BOROUGH OF CROYDON.

PUBLIC HEALTH DEPARTMENT.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER

Applications from qualified Medical Practitioners are invited for the appointment of an Assistant Medical Officer of Health and Assistant School Medical Officer.

Applicants must be Medical Men holding a special qualification in State Medicine, or a Diploma in Public Health, and must have had three years' experience of the practice of medicine since obtaining their medical qualifications.

Preference will be given to applicants who:
(a) Have had some definite experience of School Medical work;
(b) Have enjoyed special opportunities for the study of the Diseases in Children;
(c) Have had experience in Infectious Diseases; and
(d) Have held one or more Resident Hospital appointments.

The candidate appointed will be required to produce a recent satisfactory medical certificate of health, and to devote the whole of his time to the duties of the office.

The salary will be £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum.

The post is designated under the Local Government and Other Officers' Superannuation Act, 1922, and deductions will, therefore, be made for superannuation purposes.

Application forms may be obtained by sending a stamped addressed foolscap envelope to the Medical Officer of Health, Town Hall, Croydon, to whom they should be returned, together with copies of three testimonials of recent date, not later than 11 a.m. on Monday, July 12th, 1937.

Canvassing in any form will be a disqualification.

Town Hall, Croydon.
June 16th, 1937.

JOHN M. NEWNHAM,
Town Clerk.

SOUTH MIDDLESEX AND RICHMOND JOINT HOSPITAL BOARD.

MOGDEN FEVER HOSPITAL, ISLEWORTH.

ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited from fully-qualified Medical Practitioners for the above appointment. Duties to commence on October 1st, 1937.

The appointment is for a period of one year, at a salary of £250 per annum, with board, residence and laundry. Preference will be given to candidates who have held a resident appointment in a General Hospital. Experience in anaesthetics desirable.

Forms of application, with full particulars of duties, may be obtained from the Medical Superintendent, Mogden Fever Hospital, Isleworth, Middlesex, and applications, on the prescribed forms, should be returned to him on or before Monday, July 12th, 1937.

S. C. T. LITTLEWOOD,
Clerk to the Board.

14, Church Street, Kingston-on-Thames.
June 21st, 1937.

CITY OF PORTSMOUTH MENTAL HOSPITAL.

LOCUM TENENS ASSISTANT MEDICAL OFFICER (Male) required. There is the possibility of a permanent appointment. Seven guineas a week, with board, lodging and laundry. Apply to the Medical Superintendent.

LONDON COUNTY COUNCIL.

Applications invited from Medical Practitioners of at least one year's *standing* to undermentioned positions. Candidates must have held Resident appointment in a General Hospital for at least six months. Married quarters not available.

ASSISTANT MEDICAL OFFICERS (Grade I).—Salary £350—£25—£425, with board, lodging and washing.

(a) LEWISHAM HOSPITAL, Lewisham, S.E.13.—Surgical duties. Experience in obstetrics and gynaecology essential.

*(b) ST. ANDREW'S HOSPITAL, Devons Road, Bow, E.3.—Medical duties.

*(c) ST. CHARLES' HOSPITAL, St. Charles' Square, Ladbroke Grove, W.10.—Surgical and gynaecological duties.

*(d) ST. CLEMENT'S HOSPITAL, 2a, Bow Road, E.3.—Medical duties. Experience in mental diseases essential.

*(e) ST. MARY ABBOT'S HOSPITAL, Marloes Road, Kensington, W.8.—Experience in obstetrics and gynaecology essential.

*(f) ST. MARY, ISLINGTON, HOSPITAL, Highgate Hill, N.19.—(Two positions) (1) Medical duties; (2) Surgical experience essential.

(g) ST. OLAVE'S HOSPITAL, Lower Road, Rotherhithe, S.E.16 Surgical duties, including fractures.

ASSISTANT MEDICAL OFFICERS (Grade II.)—Salary £250 a year, together with board, lodging and washing. Appointment for one year only in first instance (renewable for a second year under certain conditions).

*(h) LAMBETH HOSPITAL, Brook Street, S.E.11.—Medical duties.

*(i) ST. FRANCIS' HOSPITAL (previously Constance Road Institution), East Dulwich, S.E.22.—Medical duties.

*(j) ST. GEORGE-IN-THE-EAST HOSPITAL, Raine Street, Wapping, E.1.—Duties mainly medical, experience in anaesthetics essential.

*(k) ST. NICHOLAS' HOSPITAL, Plumstead, S.E.18 (two positions).—Duties mainly medical and experience in anaesthetics essential (both positions). Experience in midwifery desirable for one of the positions.

*(l) ST. STEPHEN'S HOSPITAL, 369, Fulham Road, S.W.10. Duties mainly medical. Experience in anaesthetics essential.

(m) ST. OLAVE'S HOSPITAL, Lower Road, Rotherhithe, S.E.16. General medical duties.

* No accommodation for a woman.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health, Staff Division, 2A, County Hall, S.E.1, returnable by July 19.

Canvassing disqualifies.

LONDON COUNTY COUNCIL.

CONSULTANT AND SPECIALIST SERVICES

Applications invited for appointment as PART-TIME CONSULTING DERMATOLOGIST for duty for one session a week (total) at Lewisham Hospital, Lewisham, S.E.13, St. Alfege's Hospital, Greenwich, S.E.10, and St. Nicholas' Hospital, Plumstead, S.E.18.

Salary £425, with additional remuneration at rate of £2 12s. 6d. a *visit for emergency visits made* in excess of routine session.

Applications forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division), County Hall, Westminster Bridge, S.E.1, returnable by July 12th Women eligible. Canvassing disqualifies.

CITY OF MANCHESTER.

BOOTH HALL HOSPITAL (760 Beds).

The Public Health Committee invites applications from registered medical practitioners for the post of RESIDENT ASSISTANT MEDICAL OFFICER at the above-named hospital.

The salary for the appointment is £200 per annum, with board, residence and laundry in addition, subject to the Manchester Corporation conditions of service.

The appointment will be *made in the first* instance for a period of six months, renewable for a further six months, but not renewable thereafter.

Full information and forms of application may be obtained from the Medical Officer of Health, Sunlight House, Quay Street, Manchester, 3, and applications for the post must be received by him not later than July 14th, 1937.

Town Hall, F. E. WARBRECK HOWELL,
Manchester, 2. Town Clerk.
June 23rd, 1937.

ST. GEORGE'S INFANT WELFARE CENTRE, SOUTHWARK.

Wanted, at the beginning of September, qualified medical woman for the position of MEDICAL OFFICER to the above Centre. Weekly sessions, Monday, 2 to 4.30, and Toddler Session the first Thursday in each month Fee, 1½ *guineas per* session. Preference to applicants holding Child Health Degree.—Address, by July 9, to No. 5028, B.M.A. House, *Tavistock Square*, W.C.1.

LONDON COUNTY COUNCIL.

Applications are invited from Medical Practitioners of at least one year's *standing for appointment* to undermentioned positions. Married quarters are not available.

SENIOR ASSISTANT MEDICAL OFFICERS (Grade II)—Salary £500—£25—£600, with board, lodging and washing Duties assigned by medical superintendent and include, if necessary, assistance at other establishments under Council's control.

(a) COLINDALE HOSPITAL, The Hyde, Hendon, N.W.9.—For male adult cases of pulmonary tuberculosis (349 beds). Preference given to candidates with experience in a chest hospital or sanatorium; knowledge of artificial pneumothorax treatment, radiology and laboratory methods and experience in administration

(b) HIGH WOOD HOSPITAL FOR CHILDREN, Brentwood, Essex.—For treatment of tuberculosis and rheumatism (482 beds) Experience in the treatment of non-surgical tuberculosis is essential, and administrative experience desirable.

ASSISTANT MEDICAL OFFICER (Grade I)—Salary £350—£25—£425, with board, lodging and washing

(c) *KING GEORGE V SANATORIUM, Godalming*, Surrey.—Experience in non-surgical tuberculosis essential and as a resident officer in a general hospital desirable.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health, Staff Division, 2A, County Hall, S.E.1, *returnable by July 12th.*

Canvassing disqualifies.

LONDON COUNTY COUNCIL.

Applications invited for appointment as RESIDENT MEDICAL SUPERINTENDENT, Eastern Hospital, Homerton Grove, E.9 (621 beds), for acute infectious cases. Person appointed will be under direction of Medical Officer of Health, and must assist at other establishments of the Council if so required

Salary £1,100—£50—£1,350, with unfurnished quarters, rate free. Candidates must have been qualified medical practitioners for at least five years, *have been house physician or house surgeon* in public general hospital and have had experience of administration of a hospital for infectious diseases. Experience in smallpox desirable, but not essential.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Clerk of the Council, County Hall, S.E.1, returnable by July 15th.

Canvassing disqualifies.

LONDON COUNTY COUNCIL.

TEMPORARY DISTRICT MEDICAL OFFICER REQUIRED FOR AREA IV, DISTRICT A (HAMPSTEAD) Provisional salary *£120.*

Will be required to carry out duties prescribed by Public Assistance Order, 1930, and to reside in or near district. Engagement until March 31st, 1938, in first instance. Remuneration and conditions subject to review

Application form obtainable (stamped addressed foolscap envelope necessary) from *Medical Officer* of Health, Staff Division 2 (A), County Hall, S.E.1, *returnable by July 12th*

Canvassing disqualifies.

GLOUCESTERSHIRE JOINT COMMITTEE FOR TUBERCULOSIS.

Standish House Sanatorium, Stonehouse, Glos.

Applications are invited from registered medical men for the post of JUNIOR ASSISTANT MEDICAL OFFICER at the above Institution. No previous professional experience is necessary.

There are at present 250 beds, including men, women and children There is an orthopaedic block.

The salary is £250 per annum, with board, furnished apartments, and laundry in addition.

The appointment is for six months (with the possibility of extension for a further period of six months), and may be terminable within that *period by one month's notice on either side.*

Applications, stating qualifications and age, and accompanied by copies of three recent testimonials, should be received not later than July 14th.

Shire Hall, RICHARD L. MOON.
Gloucester. Clerk of the Joint Committee.
June 24th, 1937.

CITY OF SALFORD

ASSISTANT RESIDENT MEDICAL OFFICER, HOPE HOSPITAL. (1,200 Beds.)

Applications are invited for the post of Assistant Resident Medical Officer (Male) at Hope Hospital, Salford. The appointment will be for a period of six months. Salary £200 per annum, plus board, residence and laundry. Further particulars and form of application may be obtained from the Medical Officer of Health, 143, Regent Road, Salford, 5, Lancs., to whom it should be returned not later than July 10th, 1937.

H. H. TOMSON,
Town Clerk.

URBAN DISTRICT AND PORT OF BARRY.

Appointment of DEPUTY MEDICAL OFFICER OF HEALTH, DEPUTY PORT MEDICAL OFFICER, and ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners (male) for the post of Deputy Medical Officer of Health to the Council (Urban Authority and Port Sanitary Authority), and Assistant School Medical Officer.

Salary £600 per annum, rising by annual increments of £25 to a maximum of £700 per annum.

Applicants, whose age must not exceed 40 years, must hold the Diploma of Public Health and have had experience in Maternity and Child Welfare work. School Medical work and refraction work.

The person appointed will be required to devote the whole of his time to the duties of the office and to act under the direction of the Medical Officer of Health.

The appointment will be subject to the approval of the Board of Education and the Minister of Health, and will be determinable by three months' notice on either side. The appointment will also be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the successful applicant will be required to pass satisfactorily a medical examination

Forms of application may be obtained from *Dr E. I. Davies, Medical Officer of Health*, Public Health Department, Barry, Glam., to whom applications, together with copies of three recent testimonials, should be sent not later than July 17th, 1937.

T. D. HOWELLS,
Council Offices, Barry. Clerk to the Council
June 15th, 1937.

SURREY COUNTY COUNCIL.

PUBLIC HEALTH DEPARTMENT.

SURREY COUNTY HOSPITAL, REDHILL

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners for the appointment of Resident Assistant Medical Officer at the above hospital

The Medical Officer appointed must have held a previous resident appointment and have had experience in midwifery

The appointment is for a period of six months, renewable for a further period of six months, and the gross salary is at the rate of £375 per annum, less a deduction of £125 in respect of board, lodging and laundry.

Applications, stating age, qualifications and experience, and enclosing copies of not more than three recent testimonials, *should be endorsed* "Resident Assistant Medical Officer," and be sent to the Medical Superintendent, Surrey County Hospital, Earlswood Common, Redhill, so as to be received not later than July 10th, 1937

County Hall, DUDLEY AUKLAND,
Kingston-upon-Thames. Clerk of the Council
June 26th, 1937.

SURREY COUNTY COUNCIL

DENTAL SURGEON.

Applications are invited from qualified registered Dental Surgeons, preferably under 35 years of age, for whole-time dental work in the County

The officer appointed will be required to act under the supervision and control of the County Medical Officer, and to live at some centre to be approved by the Council.

The appointment will be *subject to the staffing* regulations of the Council and to the provisions of the Council's Superannuation Scheme.

The commencing salary will be at the rate of £500 per annum, rising, subject to approved service, by annual increments of £20 to a maximum of £600 per annum.

A form of application, together with further particulars, may be obtained from the County Medical Officer, County Hall, Kingston-upon-Thames, and must be returned, duly completed, not later than July 12th, 1937, endorsed "Dental Surgeon"

Canvassing, either directly or indirectly, will disqualify. DUDLEY AUKLAND,
Clerk of the Council.

County Hall, Kingston-upon-Thames.
June 21st. 1937.

PONTEFRACT GENERAL INFIRMARY (Yorks).

JUNIOR RESIDENT MEDICAL OFFICER (male, unmarried), duly qualified registered Medical Practitioner.

Commencing salary £150 per annum, with residence, board and laundry.

The appointment to date for six months from July 1st, 1937.

Applications, stating age, with testimonials and nationality, to be sent to the undersigned at once.

DAVID J. RICHARDS,
Secretary-Superintendent.

THE ROYAL LIVERPOOL CHILDREN'S HOSPITAL.

There will be vacancies on October 1st next for TWO RESIDENT HOUSE PHYSICIANS and TWO RESIDENT HOUSE SURGEONS at the CITY BRANCH, MYRTLE STREET. The appointments will be for a period of six months. Salary in each case at the rate of £100 per annum. Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, 7, on or before Monday, July 12th, 1937.

There will be vacancies on October 1st next for ONE RESIDENT MEDICAL OFFICER and ONE RESIDENT SURGICAL OFFICER at the HESWALL BRANCH of the Institution (240 beds). The appointments will be for a period of six months. Salary in each case at the rate of £120 per annum. Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, 7, on or before Monday, July 12th, 1937.

MANCHESTER VICTORIA MEMORIAL JEWISH HOSPITAL, CHEETHAM.
(Non-Sectarian. 102 Beds.)

Applications are invited for the post of RESIDENT SURGICAL OFFICER (male). Salary £250 per annum. Appointment for twelve months and include board, residence and laundry. Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned not later than July 6th, 1937.

By Order of the Board of Management.
H. EWART MITCHELL,
Superintendent and Secretary.

CHESTERFIELD AND NORTH DERBYSHIRE ROYAL HOSPITAL.
(220 Surgical and Medical Beds)

HOUSE SURGEON.

Applications are invited from fully qualified men for the above post.

The appointment is for six months. Salary at the rate of £150 per annum, with board, apartments and laundry.

Applications, stating age, together with copies of three recent testimonials, should be sent to the undersigned as soon as possible.

June 28th, 1937 G. SUNNUCK, Supt. and Secretary.

SWANSEA GENERAL AND EYE HOSPITAL.
(336 Beds.)

HOUSE SURGEON wanted Gentleman, single Salary £150 per annum, with board, residence and laundry. Appointment for six months. Duties to commence early July.

Application, stating age, nationality, qualifications and experience, together with copies of three recent testimonials, to be forwarded to the undersigned.

O. C HOWELLS,
Secretary-Superintendent.

THE CHILDREN'S HOSPITAL, SHEFFIELD.
(140 Beds)

HOUSE SURGEON required IMMEDIATELY. Salary £100 per annum, with board, residence and laundry. Candidates (male and unmarried), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of three recent testimonials, to the undersigned

I. H G. GARTLAND,
Superintendent and Secretary.

CUMBERLAND INFIRMARY, CARLISLE.
(Beds 160. Five Male R.M.O.s.)

Required at once, male HOUSE SURGEON. Appointment to September 30th, 1937.

Applications are invited. Previous experience desirable Salary at the rate of £155 per annum, board, residence, etc

Applications, stating age, nationality, qualifications, etc., with copies of not more than three testimonials, should be sent at once to the undersigned, who will supply further particulars if desired.

J G. HOWITT,
Secretary.

June 9th, 1937.

DONCASTER ROYAL INFIRMARY.

HOUSE SURGEON (male) required immediately. Six House Surgeons are resident

Salary at the rate of £175 per annum, with residence, board and laundry.

This large industrial area offers excellent opportunities for gaining experience

Applications, accompanied by not more than three testimonials, to be sent to the undersigned immediately.

R. LANCASTER,
Secretary-Superintendent

THE ROYAL PORTSMOUTH HOSPITAL, PORTSMOUTH.

(Six Resident Medical Officers.)

Applications are invited for the posts of:
FOURTH HOUSE SURGEON (male) qualified. Salary at the rate of £130 per annum, with board, etc. To commence about August 1st, 1937.
CASUALTY OFFICER (male) qualified. Salary at the rate of £130 per annum, with board, etc. To commence about August 21st, 1937.

Six months' appointments. Eligible on completion of term for appointment to other Resident posts.

Applications, stating age, nationality, etc., and copies of three recent testimonials, to be sent to the undersigned as soon as possible, from whom all particulars can be obtained.

B. WAGSTAFF,
Secretary.

KING EDWARD VII HOSPITAL, WINDSOR.
(200 Beds.)

One HOUSE SURGEON and one CASUALTY OFFICER required for July, 1937. Applicants must be fully qualified men or women and registered.

Salary at the rate of £100 per anpum, together with board, residence and laundry.

Applications, stating age, qualifications and experience, accompanied by testimonials, should be sent to the undersigned not later than July 7th.

The Surgical appointments are recognized by the Royal College of Surgeons of England for the six months' training required of candidates before admission to the final examination for the Fellowship.

A. E. CHURCHER, Secretary.

THE LADY CHICHESTER HOSPITAL, HOVE, FOR FUNCTIONAL NERVOUS DISEASES.
(60 Beds.)

SENIOR HOUSE PHYSICIAN (woman) required. Six months' appointment at £100 per annum, all found.

Also JUNIOR at £50 per annum. Valuable experience for diploma in Psychological Medicine.

Duties to commence immediately.

Applications, with testimonials, to be sent to the Secretary, Mr. P. F. Spooner, 33, West Street, Brighton.

June 28th, 1937.

YORK COUNTY HOSPITAL.
(204 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN. Salary £150 per annum, with board, residence and laundry.

Applications, stating age and previous experience, together with copies of not more than three recent testimonials, to be sent to the undersigned not later than 9 a.m on Wednesday, July 7th, 1937.

J. R. MACKRILL,
Secretary.

ROCHDALE INFIRMARY & DISPENSARY.
(110 Beds.) (Three Residents)

The Board of Management invite applications from gentlemen for the appointment of SENIOR HOUSE SURGEON.

The salary attached to the appointment is £250 p.a., including board, residence and laundry.

Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon."

W. WYNNE,
Secretary.

Infirmary Office.

ST. MARY'S HOSPITALS, MANCHESTER.

ASSISTANT RESIDENT OBSTETRIC OFFICER for the Whitworth Street West Hospital (Maternity) for a period of twelve months from August 1st next. Salary £100 per annum, with board and residence. Membership of the College of Obstetricians and Gynaecologists would be an advantage. Applications, with copies of three testimonials, to be sent to the undersigned on or before the 12th instant.

R. RATCLIFFE, Secretary.

HILL END HOSPITAL FOR MENTAL AND NERVOUS DISORDERS, St. Albans, Herts.

HOUSE PHYSICIAN (male) required, age under 30 years. Appointment for six months at the rate of £165 p.a., with board and quarters, renewable for a further six months at the rate of £200 p.a. The hospital has over 1,000 beds and is the County Mental Hospital for Hertfordshire; Laboratory, Psychological and Child Guidance Clinic, Occupational Therapy, etc

Application forms from the Medical Superintendent to be returned with copies of recent testimonials. Duties to commence at end of July.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

Applications are invited for the following posts:
(a) HOUSE PHYSICIAN from August 1st.
(b) HOUSE SURGEON from August 1st.

Each appointment is tenable for a period of six months, but is terminable at an earlier date by one month's written notice on either side.

The salary of each officer will be at the rate of £130 per annum, with board, residence and laundry.

Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Wednesday, July 14th, 1937.

J. A. BEARDSALL,
Secretary-Superintendent.

GENERAL HOSPITAL, NOTTINGHAM.
(386 Beds.)

A RESIDENT CASUALTY OFFICER (male) is required at the above Institution. The appointment is for six months, with salary at the rate of £150 a year, with board, residence and laundry. Candidates are invited to send applications, stating age, qualifications and experience, together with copies of testimonials, to the undersigned without delay. Duties to commence as soon as possible. Application for appointment as House Physician or House Surgeon will be favourably considered after six months' service in the Casualty Department.

PETER M. MACCOLL,
House Governor and Secretary.

WREXHAM AND EAST DENBIGHSHIRE WAR MEMORIAL HOSPITAL.
(124 Beds.)

RESIDENT HOUSE SURGEON (female) required by the above hospital. Appointment is for six months; salary £150 per annum, with board and lodging.

Applications, stating age, nationality, experience, qualifications, and when duty can be commenced, to be sent to the undersigned immediately, together with three copies of recent testimonials.

LESLIE SPENCER,
Secretary.

June 24th, 1937.

PRESTWICH MENTAL HOSPITAL, MANCHESTER.

Required immediately, LOCUM TENENT MALE MEDICAL OFFICER. Local facilities for D.P.M. Salary seven guineas per week and all found. Candidates must be unmarried and registered under the Medical Act. Appointment terminable by one week's notice on either side. Apply, stating age, Hospital and other experience, qualifications and full particulars, to the Medical Superintendent, as above.

ESSEX COUNTY HOSPITAL, COLCHESTER. (160 Beds).

Applications are invited for the post of HOUSE SURGEON, commencing July 19th. Salary £175 per annum, with board, washing and residence in the Hospital.

Candidates should submit a full statement of qualifications and experience, together with three recent testimonials, by Wednesday, July 14th, to:

ALFRED G. BUCK,
Secretary.

LEEDS PUBLIC DISPENSARY AND HOSPITAL.

Notice is hereby given that the Special Election Committee is prepared to receive applications for the position of HONORARY PHYSICIAN.

Applications, with copies of three testimonials, should be addressed to the Chairman of the Election Committee on or before Friday, July 30th, 1937.

By Order of the Board,
CHARLES T. J. MAURY,
Secretary and Superintendent.

COSSHAM MEMORIAL HOSPITAL, Kingswood, Bristol.

A vacancy will occur in the middle of July for the post of JUNIOR RESIDENT MEDICAL OFFICER.

Salary £100 per annum, with board and laundry —to remain for six months in the first instance. Applicants (Male) should be British nationality, fully qualified and registered. Applications, with copies of recent testimonials, to be sent to the Secretary.

LONGTON HOSPITAL, STOKE-ON-TRENT.
(50 Beds.)

HOUSE SURGEON (male or female) required. Commencing salary £160, with board, residence and laundry, plus certain fees.

Applications, with copies of recent testimonials, and stating nationality, to be sent immediately to the Chairman of Directors, Longton Hospital, Stoke-on-Trent.

MANCHESTER ROYAL INFIRMARY

HOUSE SURGEON—NEURO-SURGICAL DEPARTMENT.
HOUSE SURGEON—ORTHOPAEDIC DEPARTMENT.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointments, which become vacant on August 15th, 1937.

Applicants must be registered and hold a Medical and Surgical qualification.

The appointments are for six months, subject to *the provisions of the Bye-laws as to notice, etc.* Salaries at the rate of £50 per annum, with board-residence *and allowance* for laundry.

Applications, stating age, to be sent to the Chairman of the Medical Board not later than Saturday, July 10th, 1937.

By Order,
W. R. TINDALE,
General Superintendent and Secretary.
June 25th, 1937.

MANCHESTER ROYAL INFIRMARY

HOUSE PHYSICIANS—FOUR VACANCIES

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointments, which become vacant as follows: Two on August 15th, and two on September 15th, 1937.

The applications will be considered to be for any of these posts unless it is specially stated to *to contrary.*

Applicants must be registered and hold a Medical and Surgical qualification.

The appointments are for six months, subject to the provisions of the Bye-laws as to notice, etc. Salary at the rate of £50 per annum, with board-residence and allowance for laundry.

Applications, stating age, to be sent to the Chairman of the Medical Board not later than Saturday, July 10th, 1937.

By Order,
W. R. TINDALE,
Gen. Supt. and Secretary.
June 25th, 1937.

MANCHESTER ROYAL INFIRMARY

HOUSE SURGEON — AURAL, GYNAECOLOGICAL & OPHTHALMIC DEPARTMENTS.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, vacant on August 15th, 1937. Applicants must hold a Medical and Surgical Qualification and be registered.

The appointment is for six months, subject to the Bye-laws as to notice, etc. Salary at the rate of £50 per annum, with board-residence and allowance for laundry.

Applications, stating age, to be sent to the Chairman of the Medical Board not later than Saturday, July 10th, 1937.

By Order,
W. R. TINDALE,
General Superintendent and Secretary.
June 25th, 1937.

MANCHESTER ROYAL INFIRMARY.

HOUSE SURGEONS. Four Vacancies.

The Board of Management of the Manchester Royal Infirmary invite applications for the above *appointments vacant on August 15th, 1937.* Applicants must hold a Medical and Surgical qualification *and be registered.*

The appointment is for nine months, subject to the provisions of the Bye-laws as to notice, etc. Salary at the rate of £50 per annum, with board-residence and allowance for laundry.

Applications, stating age, to be sent to the Chairman of the Medical Board not later than Saturday, July 10th, 1937.

By Order,
W. R. TINDALE,
General Superintendent and Secretary.
June 25th, 1937.

ANCOATS HOSPITAL, MANCHESTER.

APPOINTMENTS VACANT.

CASUALTY OFFICER.—12 months' appointment. Salary £250 per annum, with luncheon and tea provided. *Applicants having passed their* Primary Fellowship Examination will be preferred, as the gentleman appointed will do duty for the Resident Surgical Officer at alternate week-ends and other scheduled times.

HOUSE SURGEON to the Ear, Nose and Throat Department, and to act as House Physician to one of the Honorary Physicians. Appointment for six months. Salary at £100 per annum, with board, residence, laundry, etc.

Applications for either of the above posts should be forwarded to the undersigned immediately, together with copies of three recent testimonials, stating age, qualifications, experience, etc.

By Order of the Board,
HERBERT J. DAFFORNE,
General Superintendent and Secretary.

NORTH STAFFORDSHIRE ROYAL INFIRMARY, STOKE-ON-TRENT
(400 Beds.)

Vacancies for
(*a*) An HONORARY ASSISTANT PHYSICIAN;
(*b*) An HONORARY ASSISTANT SURGEON.
(*c*) An HONORARY ASSISTANT AURAL SURGEON.

The Committee invite applications for the *above-mentioned* posts.

The qualifications required for the post of Honorary Assistant Physician are the M D , or M R C P The qualifications required for the Honorary Assistant Surgeon and Honorary Assistant Aural Surgeon are the M S , or the F R C S

Applications to be sent to the undersigned on or before July 14th

Candidates will be required to attend before the Election Committee at this Infirmary on July 21st at 3 p m

Canvassing will *disqualify.*

Full particulars will be forwarded upon enquiry

By Order of the Committee,
W STEVENSON,
Secretary and House Governor
June 2nth, 1937

HULL ROYAL INFIRMARY
(365 Beds)

Applications are invited from registered Medical *Practitioners for the post of HOUSE SURGEON* (male) to the Ophthalmic and Ear, Nose and *Throat Departments, vacant now*

Salary at the rate of £150 per annum, plus residence, board and laundry

The post is recognised for the clinical work required in the regulations for the D O M S and D L O.

The appointment will be for a period of six months, but will be determinable at any time by one month's notice on either side

Applications, giving particulars of age, experience and nationality, together with copies of recent testimonials, should be addressed to the undersigned.

R. J CARLESS,
June 28th, 1937 House Governor

MANCHESTER NORTHERN HOSPITAL
(General Hospital—113 Beds)
Cheetham Hill Road, Manchester, 8

Applications are invited for the posts of RESIDENT HOUSE PHYSICIAN and RESIDENT *HOUSE SURGEON* Salary £100 per annum, with board and residence.

*The appointments are for six months from mid-*August, 1937 (successful candidates are eligible for reappointment *for a further six months*)

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, should be sent to Mr James C Daniels, Secretary, 38, Barton Arcade, Manchester 3, by July 13th.

MANCHESTER NORTHERN HOSPITAL
(General Hospital—113 Beds)
Cheetham Hill Road, Manchester, 8

Applications are invited for the post of RESIDENT SURGICAL OFFICER, commencing salary £150 per annum, *with board and residence* The appointment is for twelve months from mid-August, 1937

Applications, stating age, qualifications and nationality, with copies of not less than three recent testimonials, to be sent to the Secretary, Mr James C. Daniels, 38, Barton Arcade, Manchester, 3, not later than July 13th.

ROYAL *UNITED HOSPITAL, BATH*

Applications are invited from gentlemen, unmarried, of British nationality, for the following appointments:

HOUSE SURGEON.—General Surgery and Ear, Nose and Throat.

HOUSE SURGEON —Gynaecological and Obstetric Department, with Anaesthetic duties.

Both appointments to commence July 14th.

Salary for each appointment £150 per annum, *with board, residence* and laundry.

Applications, with copies of three testimonials, *to be addressed* to the undersigned by July 6th, stating the appointment for which application is made.

J. LAWRENCE MEARS
June 21st, 1937. Secretary-Superintendent.

ROYAL UNITED HOSPITAL, BATH.

HOUSE PHYSICIAN required immediately. *Resident Staff of two House Physicians and three* House Surgeons.

Duties include some Casualty. Salary £150 per annum, board, residence, and laundry.

The appointment is for six months, and candidates must be male, unmarried, and of British nationality.

Applications, with copies of three testimonials, to be addressed to the undersigned at once.

J. LAWRENCE MEARS,
May 31st, 1937. Secretary-Superintendent.

BIRKENHEAD GENERAL HOSPITAL.
(156 Beds.)

Applications are invited for the following Resi*dent (male) posts for the six months* commencing July 1st, 1937.

SENIOR HOUSE SURGEON. Salary £150 per annum.

(The above post is recognized by the Royal College of Surgeons of England for the 6 consecutive months' appointment in charge of general surgical patients required of candidates before admission to the final examination for the Fellowship.)

SECOND HOUSE SURGEON Salary £100 per annum

HOUSE PHYSICIAN. Salary £100 per annum.

CASUALTY OFFICER. Salary £100 per annum.

All with board, residence and laundry

Applications, stating age, nationality and qualifications, together with three recent testimonials, to reach the undersigned as soon as possible

W. H DANIELS, F.C.I.S.,
Secretary-Superintendent

THE ROYAL INFIRMARY, SHEFFIELD
(500 Beds.)

The Board of Management invite applications for *the*

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The salary attached to posts (1) and (2) is £80 per annum, increasing to £100 after six months' service; to (3) £120 per annum, and to (4) £150 per annum, with board and residence in each case

Appointments (1), (2) and (3) will be tenable for the residue of the period of six months, terminating on October 31st next; (4) is tenable for six months from July 1st, 1937.

The Ophthalmic Department contains 69 beds and an Out-Patient Department, which is open daily.

Applications, with copies of testimonials, to be sent to the undersigned forthwith

H KINGSLEY PEARCE,
General Superintendent and Secretary.
June 21st, 1937.

THE ROYAL INFIRMARY, SHEFFIELD.
(500 Beds)

The Board of *Management invite* applications for the post of HOUSE SURGEON to the ORTHOPAEDIC and FRACTURE SERVICE.

The appointment will be tenable for the residue *of the period of six months ending October 31st* next. The successful candidate will be eligible *for re-election to this or one of the other fourteen* House appointments

The salary attached to the post is £80 per annum, with board and residence increasing to £100 per annum after six months' service

Applications, with copies of testimonials to be sent to the General Superintendent and Secretary.
June 25th, 1937.

ROYAL *SOUTH HANTS AND* SOUTHAMPTON HOSPITAL (280 Beds)

Applications are invited for the following appointments:

ONE CASUALTY OFFICER;
ONE RESIDENT ANAESTHETIST AND HOUSE SURGEON TO THE EAR, NOSE AND THROAT DEPARTMENT;

commencing immediately until December 31st, 1937, at a salary of £150 per annum, with board, lodging and laundry Candidates must be male and unmarried.

Applications, accompanied by not more than three recent testimonials, should be sent to the undersigned at once

HY TRUSSON,
House Governor and Secretary.

THE SHEFFIELD ROYAL HOSPITAL.
(340 Beds)

Applications are *invited for the post of* WHOLE-TIME CLINICAL ASSISTANT to the OPHTHALMIC DEPARTMENT. *The duties are of registrar* type and candidates should have good out-patient experience Salary £300 per *annum, non-resident.* The appointment in the first instance is for one year.

W. H. BOOTH,
Superintendent and Secretary.

THE SHEFFIELD ROYAL HOSPITAL.
(340 Beds.)

RESIDENT MEDICAL STAFF.

Applications are invited for the post of LOCUM, who will gain for several months experience in various departments, with a probability of a permanency at the end of the term. Salary at the rate of £80 per annum, with board, residence and laundry.

W. H. BOOTH,
Superintendent and Secretary

DEVONSHIRE ROYAL HOSPITAL, BUXTON, DERBYSHIRE. (300 Beds.)
(A National Hospital for Rheumatism and Allied Diseases.)

HOUSE PHYSICIAN (male).

Salary £150, rising to £175 after three months' service (and prospects of promotion to Resident Medical Officer), with board-residence and laundry.

Candidates must be fully qualified and registered.

The appointment is for a minimum period of six months, and may be extended for a further period of six months.

Applications, endorsed "House Physician," stating age, experience and qualifications, together with copies of three recent testimonials, must be forwarded without delay to the undersigned, from whom any further particulars may be obtained.

Considerable Orthopaedic experience is available, and the appointment offers special facilities for any gentleman preparing a thesis or wishing to undertake special work, as the Hospital contains all the necessary laboratory and other facilities for research.

Canvassing will disqualify.

By Order of the Committee of Management,
A. PRESTON TURNER,
General Superintendent and Secretary.

NATIONAL SANATORIUM BENENDEN, KENT.

RESIDENT ASSISTANT MEDICAL OFFICER

The Council of the National Sanatorium Association invites applications for the post of Resident Assistant Medical Officer.

The salary will be £350 per annum rising by £25 per annum to £400, with board, residence and laundry.

Annual leave will be four weeks and, generally speaking, every other Sunday will be free.

There are 147 beds at the National Sanatorium, *Benenden, and a surgical unit is installed*

Applications, stating age, nationality, qualifications and previous experience, together with copies of three recent testimonials, to be sent to the undersigned not later than July 12th, 1937.

C. C. LAWRENCE,
Hon. Secretary.

Envelopes should be marked "Personal"

CHELTENHAM GENERAL AND EYE HOSPITALS
(176 Beds.)

Recognized for the F.R.C.S., D.L.O. and D.O.M.S. Examinations.

The Board of Management invite applications for the post of HOUSE PHYSICIAN (male) at the General Hospital. Candidates must be unmarried, have a registered qualification in Medicine and Surgery, and produce evidence that they are qualified to administer anaesthetics.

Salary £150 p.a. with board, lodging and laundry.

Applications, with copies of testimonials, to be sent in sealed envelopes marked "House Physician" to the undersigned as soon as possible

J. CUMMING SMITH, F.C.I.S.,
The General Hospital, Secretary
Cheltenham.
June 28th, 1937.

NORTH ORMESBY HOSPITAL MIDDLESBROUGH

HOUSE SURGEON (Male) required for holiday relief duty from July 17th to August 14th, 1937.

Remuneration five guineas per week, with board-residence. *Applications, stating age, qualifications, and experience, to be sent to the undersigned*

GEORGE WATTS,
Secretary-Superintendent

MONTAGU HOSPITAL, MEXBOROUGH.
(113 Beds.)

RESIDENT HOUSE SURGEON (Lady) required. Commencing salary £120 per annum, with board, residence, laundry, and excellent experience.

Applications, stating age, qualifications, when at liberty and accompanied by copy testimonials, to:—

JOHN N. DRAKE,
Secretary-Superintendent

ROTHERHAM HOSPITAL

HOUSE SURGEON required for Ophthalmic and Ear, Nose and Throat Departments. Previous experience not essential. Salary £150 per annum with board and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. Roberts, 8, Moorgate Street, Rotherham.

THE KIDDERMINSTER AND DISTRICT GENERAL HOSPITAL.

JUNIOR HOUSE SURGEON (MALE) REQUIRED. Salary £100 per annum, with residence, board and laundry. Applications, with not more than three testimonials, to be sent to the Secretary, Miss Susan Smith, South Cliff, Kidderminster.

THE RADCLIFFE INFIRMARY, OXFORD.

Applications are invited from qualified men and women for the post of RESIDENT MEDICAL OFFICER to that section of the Infirmary consisting of 52 beds and dealing with the diagnosis *and treatment of pulmonary tuberculosis, known* as The Osler Pavilion, Headington, Oxford, as from August 1st, 1937.

Previous experience in a tuberculosis institution is not essential, but experience as a Resident in a General Hospital is desirable.

Appointment will be for six months in the first instance. Salary at the rate of £120 per annum.

Applications, with copies of testimonials, must be forwarded to the undersigned at the Radcliffe Infirmary, not later than July 12th, 1937.

A. G. E. SANCTUARY,
Administrator.

THE ROYAL HOSPITAL, WOLVERHAMPTON.
(Incorporated under Charter.)

GYNAECOLOGICAL AND OBSTETRIC DEPARTMENT.

ASSISTANT RESIDENT MEDICAL OFFICER (female) required for the above Department (60 beds), duties to commence forthwith.

Candidates must be registered under the Medical Acts and unmarried.

The appointment is for six months. Salary at the rate of £100 per annum. Board, furnished rooms and laundry provided. Applications, with copies of testimonials, to be forwarded to the undersigned

Wolverhampton, June 28th, 1937. W. H. HARPER, House Governor.

PRESTON AND COUNTY OF LANCASTER ROYAL INFIRMARY.
(General Hospital, 405 Beds.)

HOUSE SURGEON, EYE, EAR, NOSE AND THROAT DEPARTMENT.

Applications are invited from unmarried gentlemen, doubly qualified and registered, for the above post.

Hospital Resident Staff—seven. Six months' appointment.

Salary £150 per annum, with board, residence and laundry.

Applications, stating age, qualifications and experience, together with copies of recent testimonials, to be forwarded as soon as possible to Mr. John Gibson, Superintendent, Royal Infirmary, Preston.

June 26th, 1937.

ROYAL SURREY COUNTY HOSPITAL, GUILDFORD. (216 Beds.)

WANTED JULY 12th, 1937, HOUSE SURGEON (Male).

Six months' appointment; recognised for F.R.C.S. Duties: General Surgery, Orthopaedics and Casualties. Salary £150 per annum, with board, residence and laundry.

Applications, stating age and essential particulars, with copies of not more than three testimonials, to reach the Secretary-Superintendent not later than July 6th.

THE HOSPITAL FOR SICK CHILDREN, NEWCASTLE-UPON-TYNE

Applications are invited for the posts of:—HOUSE PHYSICIAN and HOUSE SURGEON (Male or Female) for six months as from August 1st, *1937. Salary at the rate of £100* per annum, together with board, residence and laundry. Applications, stating age and qualifications, together with copies of testimonials, to be sent to the Secretary, Mr. Neil Brodie, 18, City Road, Newcastle-upon-Tyne, 1.

HERTFORD COUNTY HOSPITAL.
(169 Beds.)

Applications are invited for the post of HOUSE SURGEON (Male) (three Residents). Salary £180 per annum, with board, residence and laundry. The appointment is for six months in the first instance.

Applications, with three recent testimonials, should be sent to the undermentioned not later than July 6th, 1937.

PERCY G. BROOKS,
Secretary.

NORWICH INFIRMARY.

Applications are invited for the post of RESIDENT ASSISTANT MEDICAL OFFICER.

Salary £350 per annum, rising by annual increments of £25 to £450 per annum.

Particulars of the appointment may be obtained from the Senior Medical Officer, Norwich Infirmary, Bowthorpe Road, to whom applications, stating age, qualifications and experience should be forwarded by not later than July 12th, 1937.

The envelopes should be endorsed "Resident Assistant Medical Officer."

KEIGHLEY AND DISTRICT VICTORIA HOSPITAL.
(124 Beds.) Yorkshire (West Riding).

APPOINTMENT OF RESIDENT MEDICAL OFFICER.
Vacant September 1st, 1937.

Applications are invited from registered Medical Practitioners, Male or Female, for the above appointment. Proof of registration to be furnished before appointment.

Salary £180 per annum, together with full residential emoluments. Terms, six months, renewable. State experience in giving anaesthetics.

Applications, with particulars of age, experience, nationality, together with copies of two recent testimonials to be sent to the undersigned as soon as possible.

J. YOUNG,
Secretary-Superintendent.

THE GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION, GLOUCESTER.
(225 Beds. Five Residents.)

Applications are invited for the posts of HOUSE SURGEON and HOUSE PHYSICIAN (males). The salary for each post is at the rate of £150 per annum, with board, residence, and laundry.

The appointments are for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, experience, and nationality, with copies of not less than three recent testimonials, should be sent to the undersigned.

The elected candidates will be required to enter upon their duties at once.

F. J. SYMONS,
June 10th, 1937. Secretary.

CLAYTON HOSPITAL, WAKEFIELD.

There is a vacancy for a FOURTH HOUSE SURGEON (Male, British), for which post applications are invited. The appointment is for six months in the first instance and the salary is at the rate of £150 per annum, together with board, residence and laundry.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be sent to the undersigned as early as possible.

The selected candidate will be expected to take up duties almost immediately.

J. H. GREAVES,
President.

KETTERING AND DISTRICT GENERAL HOSPITAL

Applications are invited for the post of HOUSE SURGEON and HOUSE PHYSICIAN (male).

Salaries £175 and £150 respectively, with board, residence and laundry. Candidates must be fully qualified.

The appointment is for six months.

Applications, stating age, nationality and qualifications, together with copies of three testimonials, to be sent to the undersigned as soon as possible.

G. W. JACKSON,
Secretary-Supt.

DARLINGTON MEMORIAL HOSPITAL.
(200 Beds.)

Applications are invited for the post of HOUSE SURGEON for the Out-Patient, Casualty and Orthopaedic Dept. Male, British, fully qualified. Salary £150 per annum, with board, residence and laundry. Applications, stating age, full particulars of qualifications and experience, together with copies of three recent testimonials, to be addressed to the undersigned

ARTHUR RIDDLE, A.C.I.S.,
Secretary-Superintendent.

CHILDREN'S HOSPITAL, SUNDERLAND.
(70 Beds.)

HOUSE PHYSICIAN (female) required July 15th. HOUSE SURGEON (female) required July 31st. Salary £120 per annum, with board, laundry, etc. Applications, stating age and qualifications, and accompanied by testimonials, to be sent to the undersigned

G. W. PATTISON,
Assistant Secretary.

VICTORIA HOSPITAL, BLACKPOOL.
(180 Beds.)

HOUSE PHYSICIAN (Male) required immediately.

Duties will include charge of ophthalmic cases.

Appointment for six months, salary at the rate of £200 per annum, with board, residence and laundry.

Applications, with copies of three recent testimonials, should be sent immediately to

GENERAL SUPERINTENDENT.

DEVON COUNTY COUNCIL
(Medical Department).

Applications are invited from duly qualified medical practitioners for the appointment of ASSISTANT COUNTY MEDICAL OFFICER.

The salary, which is in accordance with the Askwith Scale, will be £500, rising by annual increments of £25 to £700.

The appointment will be subject to three months' notice on either side.

The person appointed must have special post-graduate experience in refraction work.

The successful candidate must provide a motor car for his work. Travelling and subsistence allowance will be paid in accordance with the Devon County Council Scale.

The successful candidate will be required to pass a medical examination and will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922.

Forms of application and conditions of appointment may be obtained from the undersigned, to whom they should be returned completed by July 17th, 1937, together with copies of not more than three recent testimonials.

L. MEREDITH DAVIES.
4, Barnfield Crescent, Exeter. County Medical Officer.

CITY OF BIRMINGHAM EDUCATION COMMITTEE.

APPOINTMENT OF SCHOOL MEDICAL OFFICER.

Applications are invited from Registered Medical Practitioners for the appointment of School Medical Officer. Salary £1,100 per annum, rising by biennial increments of £50 to a maximum of £1,400 per annum.

The appointment will be subject to the provisions of the Birmingham Superannuation Scheme, 1926 (Local Government and other Officers' Superannuation Act, 1922).

Further particulars, with forms of application, may be obtained from the undersigned, to whom applications should be delivered not later than first post on the morning of Saturday, August 7th, 1937.

Canvassing disqualifies.

P. D. INNES,
Chief Education Officer.

Education Office, Margaret Street, Birmingham, 3.
June 26th, 1937.

CITY OF MANCHESTER.

Crumpsall Hospital (1,568 beds).

The Public Health Committee invites applications from registered Medical Practitioners for the post of RESIDENT ASSISTANT MEDICAL OFFICER at the above-named Hospital.

The salary for the appointment is £200 per annum, with board, residence and laundry in addition, subject to the Manchester Corporation conditions of service.

The appointment will be made, in the first instance, for a period of six months, renewable for a further six months, but not renewable thereafter.

Full information and forms of application may be obtained from the Medical Officer of Health, Sunlight House, Quay Street, Manchester, 3, and applications for the post must be received by him not later than July 17th, 1937.

F. E. WARBRECK HOWELL,
Town Hall, Manchester, 2. Town Clerk.
June 29th, 1937.

COUNTY BOROUGH OF BOLTON.

PUBLIC ASSISTANCE AND PUBLIC HEALTH COMMITTEE.

TOWNLEYS HOSPITAL.

WANTED for the Townleys Hospital, Farnworth, near Bolton, an ASSISTANT MEDICAL OFFICER (Male) for a period of one year.

The salary will be at the rate of £225 per annum, with rations, furnished apartments, attendance, etc.

Application forms, with conditions of appointment, may be obtained from the Public Health Department, Howell Croft North, Bolton, and must be returned to reach the undersigned not later than Saturday, July 10th, 1937.

R. M. GALLOWAY, M.D.,
Medical Officer of Health.

Public Health Department, Bolton.
June 18th, 1937

AUCKLAND HOSPITAL BOARD.

A DEPUTY MEDICAL SUPERINTENDENT is required for the General Hospital, Auckland, New Zealand. Salary £800 per annum. Particulars of appointment and form of application are obtainable at the Office of the High Commissioner for New Zealand, 415, Strand, W.C.2.

Auckland, New Zealand. R. A. SOMMERVILLE, Secretary.
June 3rd, 1937.

THE JESSOP HOSPITAL FOR WOMEN, SHEFFIELD
(Firth Auxiliary, Norton)

Applications are invited for the post of RESIDENT MEDICAL OFFICER from registered Medical Practitioners.

The appointment will be for six months, commencing immediately, subject to renewal for a further six months, with salary at the rate of £150 per annum, plus board, residence and laundry.

Previous Obstetrical experience is desirable.

The Firth Auxiliary Hospital contains 47 beds, of which 23 are set apart for the treatment of Puerperal Sepsis, the remainder being for Ante-Natal and Gynaecological cases.

Applications should be lodged with the undersigned, addressed to The Jessop Hospital for Women, Sheffield, immediately.

DAVID OSWALD,
Superintendent and Secretary.

KENT AND CANTERBURY HOSPITAL CANTERBURY.
(Three Resident Medical Officers)

HOUSE PHYSICIAN required. Six months' appointment, commencing July 26th, 1937. Salary £125 per annum, with residence and laundry.

HOUSE SURGEON required. Six months' appointment, commencing July 31st, 1937. Salary £125 per annum, with residence and laundry.

The successful candidates will commence duties at the present Hospital but will be transferred to the new Hospital (181 beds), which is to be ready for occupation about September 1st. The Hospital is recognised for Fellowship study.

Applications, together with copies of testimonials, should be sent as soon as possible to:

S. I. WARD,
Secretary.

BATH AND WESSEX CHILDREN'S ORTHOPAEDIC HOSPITAL,
Combe Park, Bath.

HOUSE SURGEON (male or female) required immediately.

The appointment will be for six months, with salary at the rate of £120 per annum, together with quarters, board, and laundry.

Orthopaedic experience an advantage, together with experience in administering anaesthetics.

Applications, with copies of three recent testimonials, should be forwarded without delay to the undersigned.

HAROLD J. FRICKER,
June 29th, 1937. Secretary.

BECKETT HOSPITAL AND DISPENSARY, BARNSLEY.
(153 Beds. Four Residents.)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male), general Surgical, Ear, Nose and Throat, Gynaecology and Anaesthetics. Candidates must be fully qualified and registered.

Salary £200 per annum, with board, residence and laundry.

Applications, stating age, qualifications, accompanied by testimonials, should be addressed to the undersigned immediately.

ARTHUR L. BOURNE,
Secretary-Superintendent.
June 29th, 1937.

BRADFORD NEW ROYAL INFIRMARY.
(345 Beds.)

RESIDENT MEDICAL OFFICER AND ASSISTANT PATHOLOGIST wanted. Salary £225. 12 months' appointment. There are 115 Medical Beds and two House Physicians. The successful applicant will be required to act as assistant to the Pathologist. Applications, stating age, qualifications and experience, and enclosing copies of three recent testimonials, should be received by the undersigned not later than July 21st, 1937.

J. J. BARRON,
Secretary-Superintendent.

HOSPITAL FOR WOMEN AT LEEDS

HONORARY ANAESTHETIST.

Applications are invited for the post of Honorary Anaesthetist to the above Hospital, and should be sent, together with copies of three recent testimonials, to the undersigned, not later than Wednesday, July 14th.

D. W. CURRIE, F.R.C.S.,
Secretary to the Faculty,
Hospital for Women,
Leeds, 2.

EAST SUFFOLK AND IPSWICH HOSPITAL
(350 Beds.) 8 Residents.

Applications are invited for the post of CASUALTY OFFICER to commence August 1st. Salary at the rate of £144 per annum, with board, apartments and laundry.

Applications from British male candidates, together with copies of three recent testimonials, to be sent to the undersigned.

The Hospital, ARTHUR GRIFFITHS,
Ipswich. Secretary.

THE PRINCE OF WALES'S HOSPITAL, GREENBANK ROAD, PLYMOUTH.
(Formerly South Devon and East Cornwall Hospital)

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence and laundry.

Appointment is tenable for six months and is subject to renewal. Duties to commence immediately.

The Hospital is officially recognised for the surgical practice required before admission to the Final Fellowship Examinations of the Royal College of Surgeons of England.

Applicants must be registered under the Medical Acts. Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned forthwith.

ARTHUR R. CASH,
General Superintendent and Secretary
June 29th, 1937.

THE PRINCE OF WALES'S HOSPITAL, DEVONPORT, PLYMOUTH.
(Formerly Royal Albert Hospital, Devonport)
(64 Beds)

Applications are invited for the post of JUNIOR HOUSE SURGEON. Salary £120 per annum, with board, residence and laundry.

Duties to commence immediately.

Appointment is tenable for six months and is subject to renewal, or promotion to the senior position when this post becomes vacant. Applicants must be registered under the Medical Acts.

Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned forthwith.

FRANK ROWE,
June 29th, 1937. Secretary.

ROYAL VICTORIA HOSPITAL, FOLKESTONE. (114 Beds)

The Committee of Management invite applications for the post of JUNIOR RESIDENT MEDICAL OFFICER. Duties to commence about July 18th, 1937. Salary £120 per annum, with board, apartments and laundry.

The appointment is for six months and may be considered as renewable for a further period of six months as Senior Resident Medical Officer if recommended by the Medical Committee.

Applications, with copies of not more than three recent testimonials, to be sent to the undersigned as early as possible.

F. T. WILTON,
June 29th, 1937. Secretary-Superintendent.

OLDHAM ROYAL INFIRMARY.

Two HOUSE SURGEONS.

One CASUALTY OFFICER AND HOUSE SURGEON to the Fracture Department.

Applications are invited for the above posts for a period of six months.

Salary at the rate of £175 per annum, with board, residence and laundry.

Applications, stating age, experience and qualifications, together with copies of three recent testimonials, must be forwarded to the undersigned not later than July 5th, 1937.

H. J. CLOUT,
General Superintendent.

THE MOUNT VERNON HOSPITAL (For Cancer.) Northwood, Middlesex.

An ASSISTANT HOUSE SURGEON will shortly be required. Candidates must be fully qualified and registered. Salary at the rate of £150 per year, with board, lodging, etc. Applications, with copies of three testimonials, to be sent to: W. J. Morton, Secretary; Offices, 32, Fitzroy Square, W.1.

ROYAL EYE & EAR HOSPITAL, BRADFORD
(94 Beds)

HOUSE SURGEONS (two) required. Salary £180, with board, residence and laundry.

Applications, stating qualifications, age etc., with copies of recent testimonials, should be sent to the undersigned.

F. BRIGGS,
Secretary-Superintendent.

TIVERTON AND DISTRICT HOSPITAL, Tiverton, Devon (45 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. Six months appointment. Duties to commence September 1st, 1937. Applications, stating age, nationality, qualifications, should be sent to the undersigned.

C. H. DEEDS,
Secretary.

GUY'S HOSPITAL.

Applications are invited for the post of CLINICAL ASSISTANT, Part-time, in the Radiology Department. Salary to be at the rate of £150 per annum. Applications should be lodged with the Dean, Guy's Hospital Medical School, on or before July 12th, 1937.

WEST END HOSPITAL FOR NERVOUS DISEASES

IN-PATIENT DEPARTMENT, GLOUCESTER GATE, REGENT'S PARK, N.W.1.

The Committee invites applications for two PHYSICIANS (male); duties 1st. Salary at the rate of £125 per annum, with board, residence and laundry.

Preference will be given to candidates who have held a resident appointment in a general hospital.

OUT-PATIENT DEPARTMENT, 73, WELBECK STREET, W.1

The Committee of Management also invites applications for an HONORARY MEDICAL PSYCHOLOGIST (with experience) and an HONORARY CLINICAL ASSISTANT, both for the Child Guidance Department.

Further information about any of these appointments may be obtained from the undersigned, by whom applications, with copies of not more than three recent testimonials, should be received not later than Monday, July 12th.

J. P. WETENHALL, Secretary and House Governor

73, Welbeck Street, W.1.

WEST LONDON HOSPITAL

(244 Beds), Hammersmith Road, W.6.

Required at once a NON-RESIDENT CASUALTY OFFICER (male). The appointment is tenable for one year, subject to one month's notice on either side. The appointed candidate will be eligible for re-election for two further periods of one year. Salary at the rate of £250 per annum, with lunch and tea daily.

Candidates must be duly qualified registered Medical Practitioners, and preference will be given to those who have held a resident appointment in a General Hospital.

Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Thursday, July 8th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at the Medical Council Meeting at 4.30 p.m. on Friday, July 16th, and the House Committee at 5 p.m. the same day, when the appointment will be made.

H. A. MADGE, Secretary

BOLINGBROKE HOSPITAL

Wandsworth Common, S.W.11 (135 Beds.)

HOUSE PHYSICIAN (Male, unmarried) required. The appointment is for six months, commencing on August 1st, 1937. Salary £120 per annum, with board, residence and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before July 7th, 1937.

W. S. RANDOLPH BISS, Secretary-Superintendent.

MARIE CURIE HOSPITAL

(Centre for Treatment of Cancer in Women by Radium and X-Rays.)

Applications are invited from qualified medical women for the post of ASSISTANT DIRECTOR. Experience in gynaecological surgery essential. Salary, according to experience, from £500 p.a.

Applications, with copies of three recent testimonials, to be sent to the Secretary, 2, Fitzjohn's Avenue, N.W.3.

THE WEIR HOSPITAL, GROVE ROAD, BALHAM, S.W.12. (30 Beds.)

JUNIOR RESIDENT MEDICAL OFFICER required as soon as possible (male, unmarried). Candidates must be fully qualified and duly registered. Salary £150 per annum, with board, residence and laundry. Applications, with copies of testimonials, to be sent to the Secretary, from whom further information may be obtained.

THE SOUTH LONDON HOSPITAL FOR WOMEN, Clapham Common, S.W.4.

Applications are invited from Medical Women for the post of

LOCUM PATHOLOGIST,

part time, for three weeks from July 20th. Further particulars may be obtained from the Secretary.

ALBERT DOCK HOSPITAL, Connaught Road, E.16. (Seamen's Hospital Society.)

RESIDENT MEDICAL OFFICER (male) required immediately. Salary £110 per annum and a proportion of fees, with board, residence and laundry. Applications to be sent in, with copies of three testimonials, to the undersigned.

Seamen's Hospital Society, Greenwich, S.E.10. F. A. LYON, Secretary

THE LONDON HOMOEOPATHIC HOSPITAL, Great Ormond Street and Queen Square, Bloomsbury, W.C.1. (A General Hospital of 200 Beds.)

The Board of Management invite applications for the appointment of PHYSICIAN FOR DISEASES OF CHILDREN.

Applicants must possess a registrable University Degree and the successful candidate must be or become a Member of the British Homoeopathic Society. It is required that successful candidates for posts on the Honorary Medical and Surgical Staff of the Hospital should shew evidence of knowledge of the Theory and Practice of Homoeopathy within one year of appointment by having attended one or more of the Systematic Courses of Lectures at the Hospital.

In the event of a member of the Honorary Staff of the Hospital being appointed, candidates are asked to state whether they are prepared to stand for the appointment of Assistant Physician for Diseases of Children.

Candidates will be required to attend a meeting of the Medical Committee on a date on October to be announced later.

Applications, stating age, with 35 copies of application and 35 copies of each testimonial, should be sent not later than September 30th, 1937, to the undersigned, of whom further particulars may be obtained.

L. J. KNOWLES, Secretary.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn Road, W.C.1.

ASSISTANTS IN THE OUT-PATIENT DEPARTMENT.

There are the following vacancies:

TWO SECOND ASSISTANTS to attend on Saturdays—one at 9.30 a.m., and one at 11.30 a.m.

TWO THIRD ASSISTANTS—one to attend on Mondays at 2 p.m., and one on Tuesdays at 5 p.m.

The duties are to assist the Surgeons in seeing the patients, and the posts are honorary ones.

Applications, which may be for periods of three, six or twelve months, should be sent to the undersigned immediately.

JOHN H. YOUNG, Secretary-Superintendent

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, Haverstock Hill, N.W.3.

APPOINTMENT OF HOUSE PHYSICIAN

Applications are invited from unmarried Medical men for the appointment of House Physician, vacant on August 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on July 17th next.

THE ROYAL LIVERPOOL CHILDREN'S HOSPITAL, MYRTLE STREET.

The Committee invite applications from Graduates, with previous Hospital experience, for the appointment of RESIDENT CASUALTY OFFICER (MALE). The appointment will be for a period of six months from October 1st, 1937. The holder of the post will be eligible for re-election. Salary at the rate of £250 per annum. Further particulars may be obtained from the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, 7, to whom applications should be sent, with copies of recent testimonials, on or before Monday, July 12th, 1937.

PRINCESS LOUISE KENSINGTON HOSPITAL FOR CHILDREN, St. Quintin Avenue, W.10 (81 Beds.)

HOUSE SURGEON (either sex) required immediately for six months. Salary at the rate of £120 p.a. for the first three months and £150 p.a. for the second three months, with board, residence and laundry. Applications, with copies of three recent testimonials, should be sent to the undersigned not later than Friday, July 9th, 1937.

H. J. ELEY, Secretary

KING'S COLLEGE HOSPITAL, Denmark Hill, S.E.5.

REGISTRAR (PART-TIME) to the Children's Department and Medical Officer to the Rheumatism Clinic vacant from September 15th.

Applications may be made to the House Governor before July 17th, from whom particulars of the duties may be obtained.

ROYAL NORTHERN HOSPITAL, Holloway, N.7.

Applications are invited for the following appointments:

HOUSE PHYSICIAN, vacant September 1st. The appointment is for nine months (three months as Out-Patient Medical Officer and Anaesthetist and six months as House Physician). Salary at the rate of £70 per annum, with board, residence and laundry.

OBSTETRIC HOUSE SURGEON, vacant September 15th. The appointment is for nine months (six months as Obstetric House Surgeon and three months as Casualty Officer). Salary at the rate of £70 per annum, with board, residence and laundry.

Applications, with copies of testimonials, should be sent by July 9th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, Secretary.

SEAMEN'S HOSPITAL SOCIETY.

The Committee of Management invite applications for the appointment of RESIDENT MEDICAL SUPERINTENDENT at the HOSPITAL for TROPICAL DISEASES, Gordon Street, W.C.1.

The appointment will be tenable for two years, renewable for a further year at the discretion of the Board of Management. Salary £400 per annum, with board-residence and laundry. Candidates, who should be single, must be legally qualified and registered, and if possible have had experience in tropical medicine. Membership of the Royal College of Physicians is desirable but not essential. Applications, stating age, with copies of not more than three recent testimonials, to be sent in on or before July 7th, 1937, to: The Secretary, Seamen's Hospital Society, Greenwich, London, S.E.10.

June 18th, 1937

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST Brompton, S.W.3.

The Committee of Management invite applications for the following posts:

HOUSE PHYSICIAN, for which there are three vacancies. The duties include work in the Out-patient Department as well as in the Wards. The appointment is for six months, commencing August 1st, with an honorarium of £50.

HOUSE PHYSICIAN (male) at the SANATORIUM at FRIMLEY. The appointment is for six months, commencing August 1st, with an honorarium of £50.

Applications, with copies of testimonials, must reach the undersigned not later than Saturday, July 10th.

Brompton, June, 1937. F. G. ROUVRAY, Secretary.

ROYAL MASONIC HOSPITAL, Ravenscourt Park, W.6.

Appointments (two) as RESIDENT SURGICAL OFFICERS (Male) will be vacant on August 1st and September 1st, 1937. Salary at the rate of £250 per annum, with board, residence and laundry. The appointments are for six months. Candidates must be registered, and have held resident appointments at a general Hospital. The Institution (145 beds at present, but to be increased) is primarily for paying patients of both sexes of moderate means, usually unable to afford ordinary Nursing Home treatment, etc.

Applications, stating full particulars, to be sent on or before Friday, July 16th, 1937, to the Honorary Secretaries, from whom further information may be obtained. The Medical Advisory Committee will meet on July 19th, 1937.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, Chelsea, S.W.3 (138 Beds.)

The Committee of Management invite applications for the posts of HOUSE PHYSICIAN and HOUSE SURGEON (both vacant August 1st, 1937). The appointments are for six months. Salaries at the rate of £100 p.a., with board, lodging, washing.

Candidates must hold Medical and Surgical qualifications and be registered under the Medical Acts. Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post Thursday, July 8th.

D. ST. JOHN BAMFORD, Secretary.

ROYAL FREE HOSPITAL, GRAY'S INN RD., LONDON, W.C.1.

Applications are invited from Medical Women of six months' or more experience for the post of IN-PATIENT OBSTETRIC ASSISTANT (Anaesthetic duties included). The appointment is for six months from August 1st, 1937.

Application forms may be obtained from the undersigned and should be duly filled in and returned on or before July 10th.

RICHARD T. BARTLEY, Secretary.

APPOINTMENTS—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District.
CONTRACT PRACTICE
ABERTYSSWG MEDICAL AID SOCIETY. *(Medical Officer.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL. *(Medical Officer.)*
GILFACH GOCH, GLAMORGAN *(Workmen's Medical Scheme.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*
MID-RHONDDA MEDICAL AID SOCIETY *(Assistant Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*
OAKDALE, MON *(Medical Officer for Medical Aid Association.)*
OGMORE VALLEY, GLAMORGAN *(Windham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
PUBLIC HEALTH
FLINTSHIRE COUNTY COUNCIL. *(Junior Assistant to the County Council's Medical Officer.)*

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments.)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney, N.S.W.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17.
VICTORIA *(All Institute or Medical Dispensaries.)*	The Honorary Secretary, Victorian Branch, British Medical Association, Medical Society Hall, Albert St., East Melbourne, Victoria
WESTERN AUSTRALIA *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch British Medical Association, "Shell House, 205, St George's Terrace, Perth, Western Australia

June 30, 1937 By Order of the Council. G. C. ANDERSON, *Medical Secretary*

BURY INFIRMARY (LANCS)
(143 Beds.)

RESIDENT SURGICAL OFFICER (MALE).

Applications are invited for the above post from those holding the Fellowship of one of the Royal Colleges of Surgeons.

The appointment is for a term of one year, with provision for an extension of a further twelve months, and the successful candidate will be expected to commence duties at the beginning of July.

Salary will be paid during the first twelve months at the rate of £300 per annum, and will be increased to £350 per annum during the second twelve months in the event of an extension of the appointment being agreed upon. In addition to this salary the post includes the provision of board-residence and laundry.

Applications, stating age, qualifications and nationality, together with copies of three recent testimonials, are to be addressed to the undersigned, and should be forwarded as soon as possible, endorsed "R.S.O."

H. WILKINSON,
Superintendent.

KNOWLE MENTAL HOSPITAL, FAREHAM, HANTS.

Applications are invited for the post of JUNIOR ASSISTANT MEDICAL OFFICER.

Applicants should be Male and single, and under 35.

The salary is £350, rising by yearly increments of £25 to £450, with board, lodging, washing and attendance, valued at £150.

The possession of a Diploma in Psychological Medicine entitles the holder to an extra £50 per annum.

The salary is subject to deduction under the Asylums Officers' Superannuation Act, 1909.

Applications, stating age, and all particulars, accompanied by copies of three recent testimonials, should be sent to the Medical Superintendent not later than July 17th.

BURY INFIRMARY (LANCS.)
(127 Beds.)

APPOINTMENT OF CASUALTY OFFICER (MALE).

A vacancy as above arises on the Resident Medical Staff, and applications are invited for the post.

The Resident Staff consists of an R.S.O., a House Surgeon, and House Physician, and a Casualty Officer.

In addition to his duties in the Casualty Department the Casualty Officer is also responsible for the In-patient and Out-patient work in connection with the Eye, and Ear, Nose and Throat Department.

The appointment is for six months at a salary at the rate of £150 per annum, with board, residence and laundry, and the successful candidate will be expected to commence duties immediately.

Applications, stating age, qualifications, and nationality, together with copies of three recent testimonials, are to be forwarded to the undersigned as soon as possible, endorsed "Casualty Officer."

Further particulars may be had on application

H. WILKINSON,
Superintendent.

THE ROYAL EYE HOSPITAL,
Pevensey Road, Eastbourne.

Non-Resident HOUSE SURGEON required to commence duty July 26th, 1937.

Salary £100 per annum and allowance in lieu of board-residence, £175 per annum.

Applications, stating age, qualifications and Ophthalmic experience, together with recent testimonials should reach the undersigned as soon as possible.

Before engagement candidates have to be interviewed by the Hon. Surgeon, from whom further particulars could be obtained in person.

H. BYGRAVE,
Hon. Secretary.

GENERAL INFIRMARY, SALISBURY.
(Voluntary Hospital, 191 Beds, now in course of extension to 225 Beds)

RESIDENT MEDICAL OFFICER (Male) required to commence duty as soon as possible.

The appointment is for one year, including a three months' probationary period, with the option of extension.

Candidates must have held at least one appointment at a recognised Hospital as House Physician and/or House Surgeon and Anaesthetist, either separately or in conjunction with the former.

He must reside in the Infirmary and devote his whole time to the service of the Infirmary.

Salary £250 per annum, with board-residence.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary

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MANSFIELD AND DISTRICT GENERAL HOSPITAL. (140 Beds)

HOUSE SURGEON (Male) required. Duties to commence as soon as possible Salary at the rate of £150 p.a., with residence, board and laundry. The appointment is for six months and is renewable. The staff consists of a Resident Surgical Officer and two House Surgeons. Applications, stating age, qualifications and nationality, accompanied by not more than three recent testimonials, to be sent to the undersigned.

C. J. ADAMS,
Secretary.

MIDLAND HOSPITAL,
Easy Row, BIRMINGHAM. (50 Beds.)

Applications are invited for the post of HOUSE SURGEON. Duties to commence July 7th. Salary £200 per annum with board, residence and laundry. Applications, stating when at liberty, age, qualifications, together with copies of recent testimonials, to be addressed to the undersigned.

OLIVE TURNEAUX,
Secretary.

(Appointments continued on p. 54)

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WANTED, CLINICAL COACHING DURING July and August for M R C P Lond.—Address, No. 5026, B.M.A. House, Tavistock Square, W.C.1.

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ASSISTANCIES

WANTED, ASSISTANT (MALE), INDOOR, Panel and private Practice, North-east London. Must have experience. £312 all found, plus half midwifery fees and half night calls. Required for middle of July (if possible). Apply at once. State full particulars.—Address, No. 5029, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—ASSISTANT, MALE, SCOTTISH (single), outdoor for August 1st. Mixed Practice. Lovely part of Lancashire. Salary £400. Apply, stating age, religion, experience; photo.—Address, No. 4829, B.M.A. House, Tavistock Square, W.C.1.

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6 S. OF ENGLAND.—PARTNERSHIP in old-established Practice, averaging £5,465 p.a., in attractive residential country district. Panel 2,548. Suitable house could be obtained. Premium for one-fifth share two years' purchase.

7 S. MIDLANDS.—PARTNERSHIP in steadily increasing Practice, averaging £2,500 p.a., in good town. Panel 1,800/1,900. Good house (3 bedrooms) to rent. Incoming partner should be aged about 35 and experienced in gynaecology and preferably hold F.R.C.S. or M.C.O.G. Premium for one-third share, two years' purchase.

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13 S.W. OF ENGLAND.—PARTNERSHIP in old-established Practice, averaging over £3,750 p.a., in attractive country town. Panel 2,300. Visits 3/6 to £1 10s. Choice of two houses (one for sale, the other to rent). Hospital and prospect of appointment. Premium one-third or two-fifths share at two years' purchase.

14 MIDLANDS.—Old-established PRACTICE in beautiful country district. Cash Receipts last year £1,280, including appointments worth about £60, and a panel between 650 and 700. Visits 2/6 to £1 1s. without medicine. Nicely situated house (4 bedrooms, dressing-room, etc.), with nice garden and two garages. Rent about £80 p.a. Premium two years' purchase.

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21 SCOTLAND.—Good-class family PRACTICE average income £1,300. Panel over 900. Also House for sale. Reasonable premium.

22 MIDDLESEX.—NUCLEUS OF PRACTICE in growing district, about ten miles from London. Receipts last twelve months £355. Panel 90. Modern detached house (3 bedrooms, etc.), to rent. Good scope. Premium £350.

23 RESIDENTIAL DISTRICT WITHIN 15 MILES OF LONDON.—Old-established PRACTICE. Receipts last year over £2,000. Panel about 1,600. Visits 3/6 to 10/6. Nice residence (4 bedrooms, dressing room, etc.), good garage and garden, for sale or rent.

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25 LONDON (Western District).—PARTNERSHIP in Practice averaging about £3,550 p.a., including panel. House containing 4 bedrooms, etc., large garage and nice garden, for sale. One-third share at first. *Premium two years' purchase.*

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27 LONDON, S.W.—Old-established good-class non-dispensing PRACTICE in neighbourhood of Victoria. Receipts last year over £660, including an appointment worth £60 and panel of about 200. Visits range from 3/6 to £1 1s., mostly 10/6 to 12/6. No Midwifery. Nice flat (3 bedrooms), rent £275 p.a. on lease inclusive. Scope. Premium £1,200.

28 E. MIDLANDS.—Old-established country PRACTICE, averaging nearly £650 p.a., in pleasant village. Appointments worth over £150 and panel 500. Charming stone-built house (6 bedrooms), with central heating, main electric light and power and water supply. Large garage; garden about 1¼ acres. Price freehold £1,700. Scope. Premium two years' purchase.

29 SURREY.—NUCLEUS OF PRACTICE in one of the best outlying rapidly growing districts. Receipts last year £280. Panel 87. Modern detached (specially built) house (4 bedrooms, etc.), with garage and garden. Price £1,765 freehold. Plenty of scope for energetic man. Premium £300.

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31 KENT.—Old-established and steadily increasing *PRACTICE (in hands of Medical Woman) in rapidly developing* district. Receipts last year £680. No panel. Visits mostly 5/-, medicine extra. Suitable residence could be obtained. Excellent scope. Premium £1,000.

32 N.E. COAST.—PARTNERSHIP (after preliminary Assistantship) in mixed Practice, about £3,300 p.a., *in seaport town.* Panel 2,600. A suitable house could be obtained. One-third share at first to suitable man at two years' purchase (or near offer), with option to increase to two-fifths in three years and to four-ninths later.

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34 LONDON, S.W.—Well-established PRACTICE (held by Medical Woman) in outlying suburban district. Cash receipts average £960 p.a. No panel, but scope if desired. Purchaser could have use of surgery premises and living accommodation with services by arrangement. Premium one and three-quarter years' purchase.

35 N.E. COAST.—Old-established and easily worked middle and better working-class PRACTICE, averaging over £1,150 p.a., in seaport town. No panel—a few contracting out-patients. Visits 5/- to 15/-. Rent of consulting rooms, £26 p.a. A suitable residence could be obtained. Good scope, *much building going on. Premium £1,500.* (Contents of consulting rooms—including X-Ray plant and electrical apparatus—about £130.)

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38 YORKSHIRE (N.R.).—Very old-established and steadily increasing country PRACTICE, between £1,400/£1,500 a year, including appointments and panel worth £400 p.a. Extremely attractive house in central position (5 or more bedrooms), garage and small garden, for sale. Good schools and sport. Scope. Premium one and a half years' purchase.

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LANCS TOWN.—Old-established Panel and Private PRACTICE in large town. Average cash receipts £1,310 p.a. Panel 900. Scope, Good house, 2 reception, 4 bedrooms, garage. Expenses low. Premium—1¼ years' purchase.—No 987.

NORTH WALES.—PARTNERSHIP (after short Assistantship) in old-established middle-class Practice in pleasant Coast town. Knowledge of Welsh desirable. Cash receipts £6,000 p.a. Panel 2,600. Well-equipped Hospital. Incoming partner would be required to live in flat. Premium—1/5th share (approximately £1,200 p.a.)—1¼ years' purchase.—No. 988.

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5. NORTH-WEST COAST.—SUBURB [illegible] RESORT.—Well-established middle-class [illegible] with good scope for further development. [illegible] past 12 months £1,458, including Panel of about 400. Visits 3/- [illegible] medicine extra. Very nice house with ample accommodation and garden can be rented at £104 p.a. Good sport and excellent educational facilities. Premium £2,004. Vendor retiring.
6. LONDON, SOUTH-EAST.—Middle-class PRACTICE held by vendor nearly 30 years, averaging over £700 p.a. Panel of 576 and one appointment worth £25 p.a. Roomy house with good garden and garage. Leasehold for sale.
7. OUTLYING NORTHERN DISTRICT.—Old-established non-Panel good mixed-class PRACTICE held by vendor (who is retiring) many years. Average gross cash receipts approximately £1,400. Fees 3/6 to 15/-. Good house with 2 reception, 7 bedrooms, etc., garden, garage. On rental. Premium 2 years' purchase.
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13. LONDON.—WESTERN DISTRICT.—Old-established Private PRACTICE for disposal after being held for many years by the Vendor who is retiring. Approximate cash receipts for the last year amount to £1,062. There is [illegible] if Panel work is undertaken and [illegible] ompact house available on *rental* reception rooms, 3 bedrooms, etc.
14. [illegible] d PRACTICE for disposal. It has been held by the Vendor for the past twelve years. The gross cash receipts for the last year were approximately £756. Panel of 424 patients. Fees 2/6 and 3/6 with a few midwifery cases at 3 guineas. Suitable house for disposal, containing 2 reception rooms, 3 bedrooms, etc.
15. DEATH VACANCY.—FAVOURITE SOUTH COAST TOWN.—Old-established PRACTICE producing £800 p.a., of which about £600 is derived from a Panel of 1,200 patients, and an appointment producing about £30 p.a. House with 3 reception, 4 bedrooms, etc., to be rented on lease. Premium £1,500 to include household fittings and fixtures.
16. SOUTH-COAST SEAPORT.—Long-established PRACTICE for disposal owing to Vendor's retirement. He has held it for the past 39 years. Income last year approximately £573 with a Panel of about 460 patients. Vendor previously held a public appointment producing £450 p.a., which he relinquished owing to age limit. It is considered that anyone devoting whole time to the Practice would increase the receipts. Suitable accommodation available on rental.
17. EASTERN COUNTIES.—Mixed-class PRACTICE in pleasant agricultural district producing for last 12 months over £1,300 p.a. Fees 3/6 to 21/-. Nice house in good position with 2 reception, 4 bedrooms, dressing room, etc. [illegible] Garden.
18. [illegible] ach. [illegible] and [illegible] 300. Fees 3/6 to 21/-. Good house with 2 reception, 6 bedrooms, etc. Separate professional rooms. Garden, garage. Rent £125 p.a. Premium 1½ years' purchase.
19. EAST ANGLIA.—WITHIN REACH OF TWO GOOD TOWNS.—Old-established, *unopposed country* PRACTICE *averaging over £1,000 p.a.*, including Panel producing over £450 a year. Low expenses. Detached house *in own grounds, containing 2 sitting rooms, 5 bedrooms, etc. Rent £70 a* year. Premium £1,750.
20. NORTH WALES.—Chiefly working-class PRACTICE producing for last 12 months £1,025, including Panel worth £438 p.a., and appointments worth *over £400 p.a. Low expenses.* Suitable surgery premises for sale. Premium, [illegible]
21. [illegible] tly established and steadily developing [illegible] months approximately £1,000, and [illegible] p.a. Suitable house can be rented or [illegible] chase.
22. [illegible] DON AREA).—Old-established good [illegible] r last 12 months £1,576 p.a., including [illegible] se with 2 reception, 5 bedrooms, etc., [illegible] 1¾ years' purchase. Illness reason for sale.
23. EASTERN COUNTIES.—*Very sound unopposed middle and working-class* PRACTICE in agricultural district averaging £1,150 p.a., including Panel worth about £460 *p.a. Fees from 3/-. Nice house with 2 reception, 6 bed*rooms, etc., electric light, garden, garage. Premium for Practice and house, £3,350.
24. NORTHERN SUBURB WITHIN 10 MILES OF HYDE PARK.—Recently established better-class PRACTICE, steadily increasing and producing for last 12 months £760. Panel of about 560 and appointments worth £40 p.a. Good freehold house with 4 bedrooms, etc., garden, garage. Price £1,450. Premium £1,450 or near offer. Vendor retiring.
25. EASTERN COUNTIES.— [illegible] RACTICE averaging about £1,100 [illegible] ring about £350 to £400 p.a. [illegible] ates there is excellent scope for increase.
26. LONDON, N.W.—Recently established PRACTICE at present producing *£220 p.a., but capable of good increase. Fees from 5/-. Small flat available* at £90 p.a., or could be worked as a lock-up. Premium 1 year's purchase.
27. *SOUTHERN* [illegible] *non-Panel PRACTICE,* producing about [illegible] itable house can be rented.
28. NORTH-EAST [illegible] ACTICE producing about £900 p.a., but stated to be capable of considerable increase. Choice of houses. [illegible] on Vendor retiring.
29. [illegible] TOWN.—Chiefly better [illegible] t 12 months over £1,600. Fees 3,6 to 21/-. Very [illegible] arage. Freehold for sale.
30. [illegible] as a "Lock-up" and [illegible] e accommodation can be
31. [illegible] TICE. Receipts for last [illegible] se with 3 bedrooms, etc., [illegible] m £750.
32. [illegible] .A.—PARTNERSHIP.—[illegible] iminary assistantship of 6 to 12 months) in old-established Practice having good scope. Gross cash receipts for last 12 months approximately £3,275. Panel of about 1,300. [illegible] worth over £300. Choice of houses on rental for ingoing
33. [illegible] .CTICE producing about £700 [illegible] itable house, ample accommoda-[illegible] p.a. *Premium £1,200.*
34. [illegible] tablished 45 years for disposal owing to retirement of Vendor. Present receipts about £600. There is stated to be scope for increase as receipts have fallen owing to Vendor's illness. Panel about 650. Large house can be rented at £150, or purchaser could [illegible] own residence
35. [illegible] d PRACTICE producing abo[illegible] Fees from 3/6. Suitable house [illegible] Freehold for sale. Premium
36. [illegible] ALF SHARE in mixed-class [illegible] £2,400 p.a. Panel of 1,369 and use available or smaller one can
37. [illegible] ddle-class PRACTICE producing [illegible] cted panel of 400 to 450 patients. [illegible] air, with ample accommodation. [illegible] 00. *Premium* £1,250.
38. [illegible] OAST TOWN.—Well-established PRACTICE averaging over £1,100 p.a. [illegible] external panel of about 350. Fees from 5/-. Good freehold house for sale or smaller house available. Premium £2,000. Vendor retiring.

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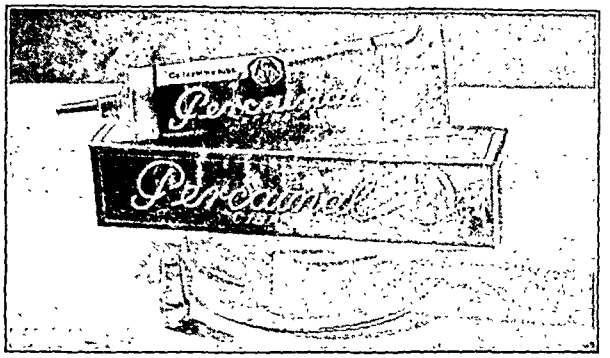
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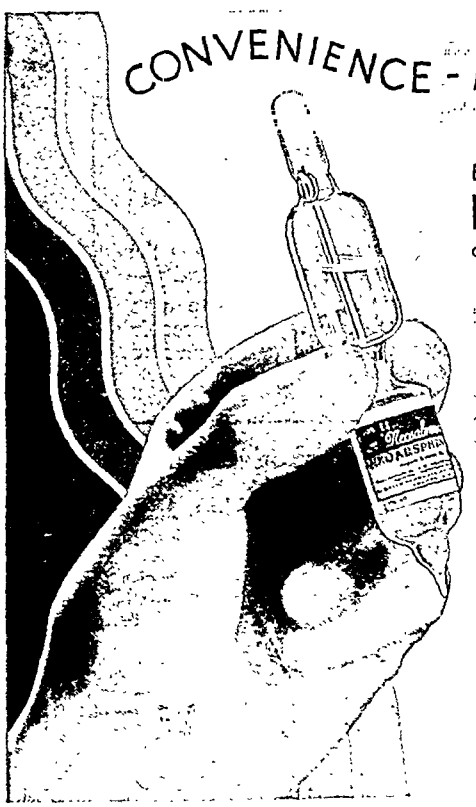
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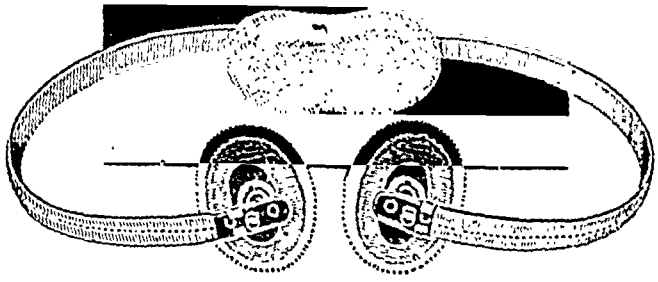
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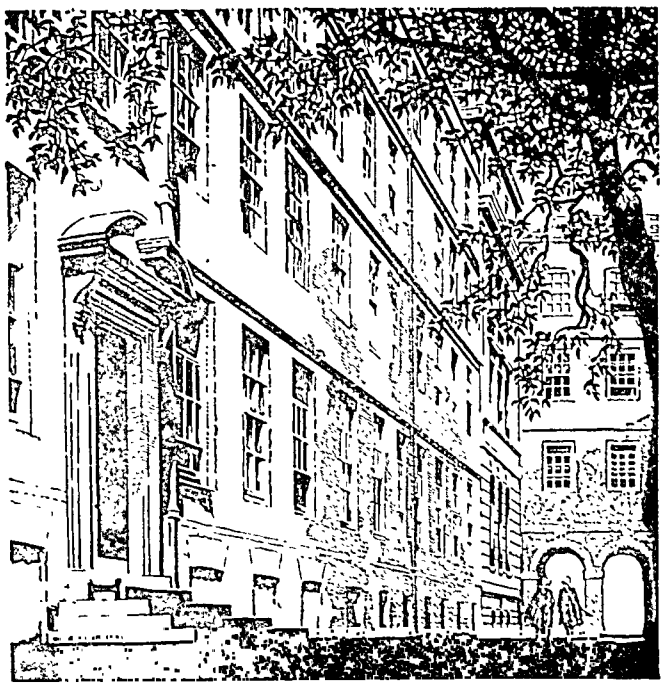
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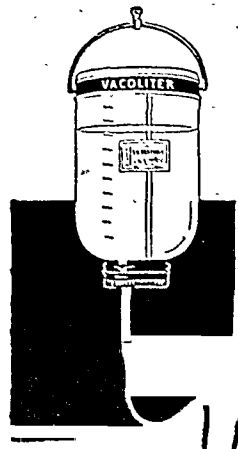
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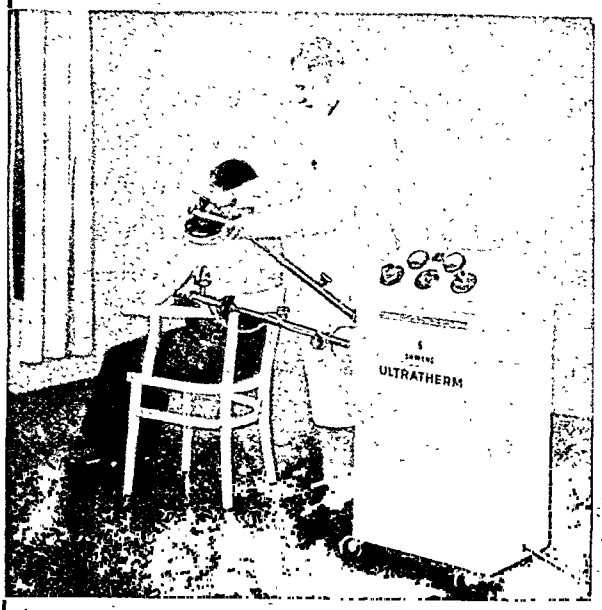
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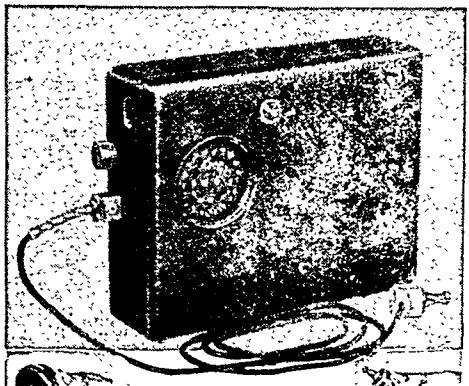
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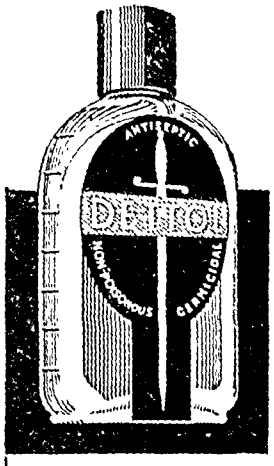
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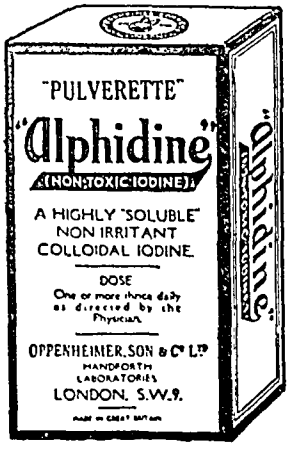
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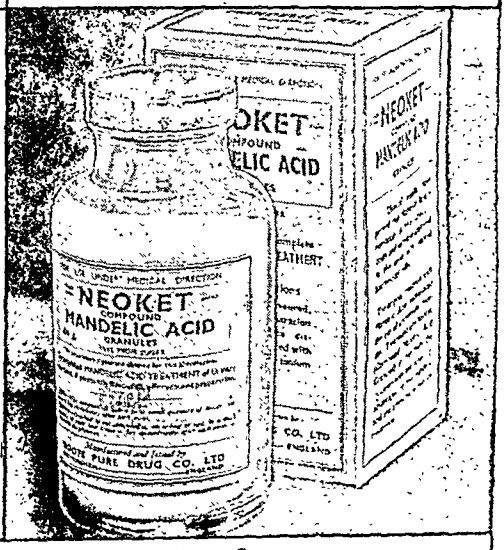
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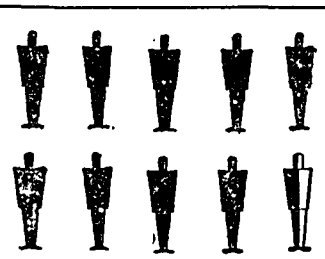
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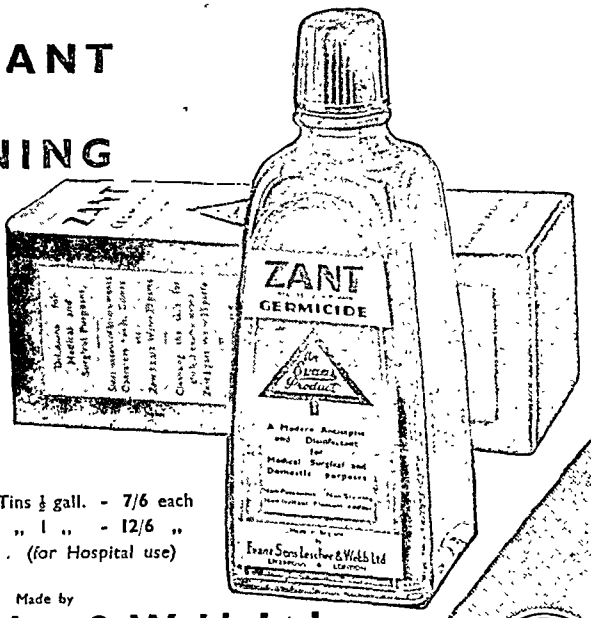
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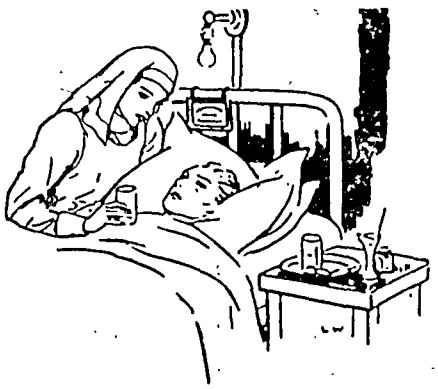
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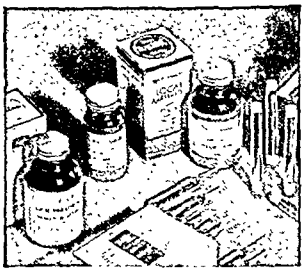
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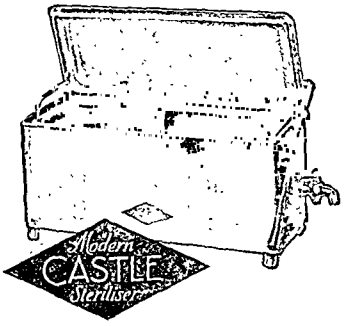
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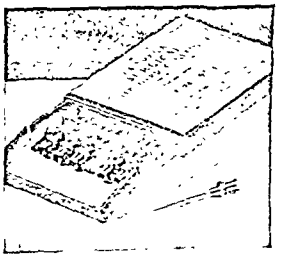
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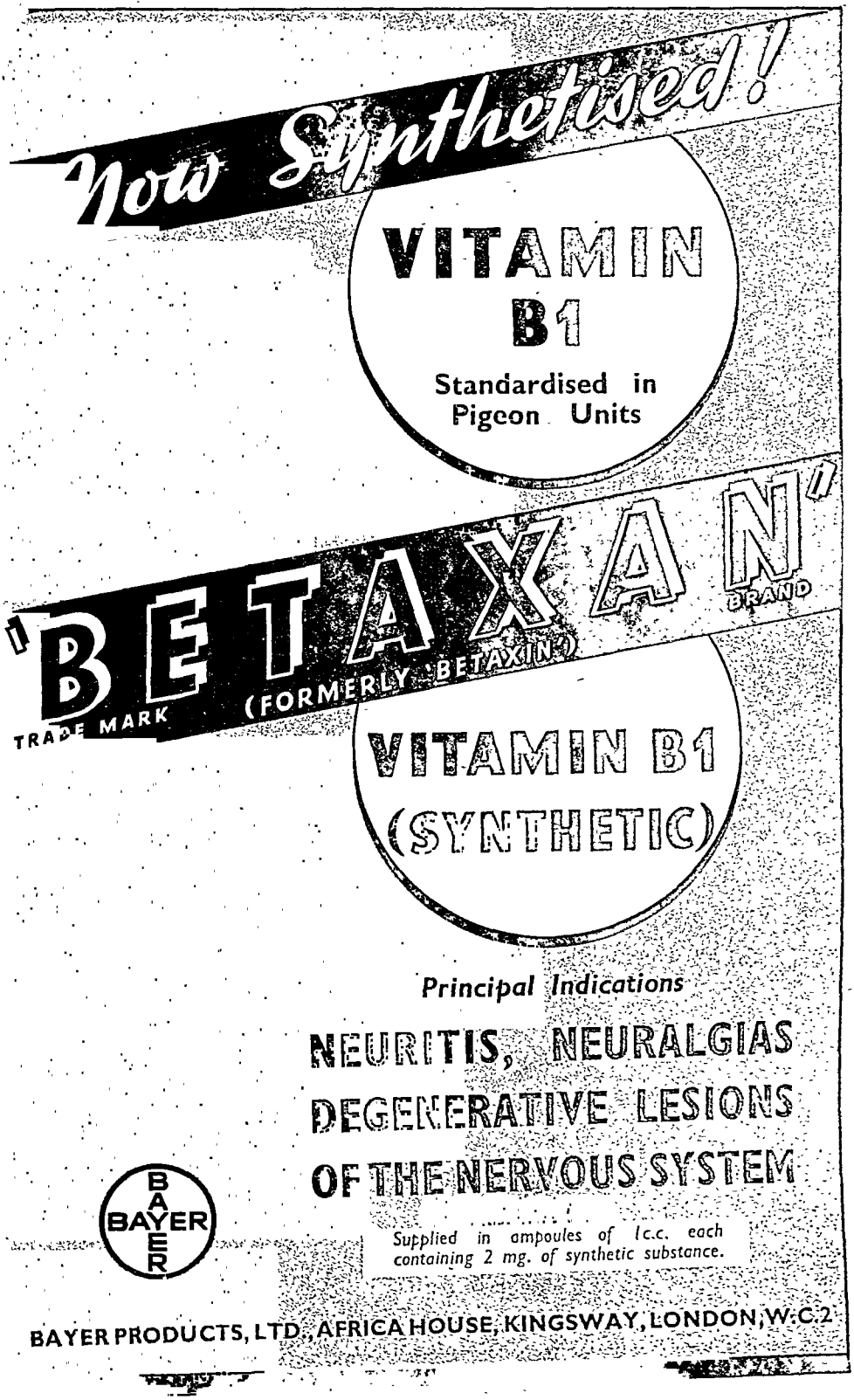
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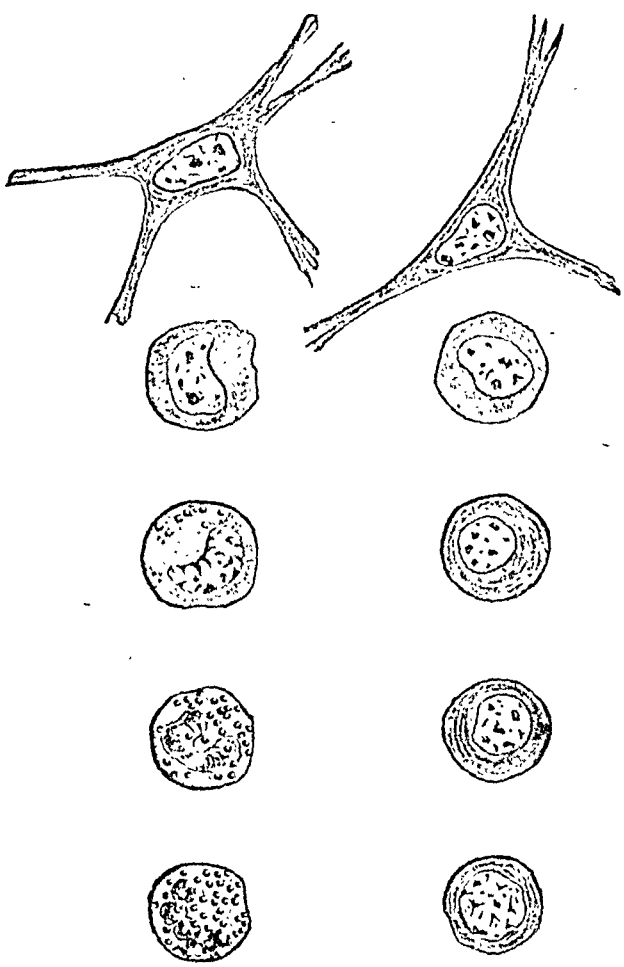
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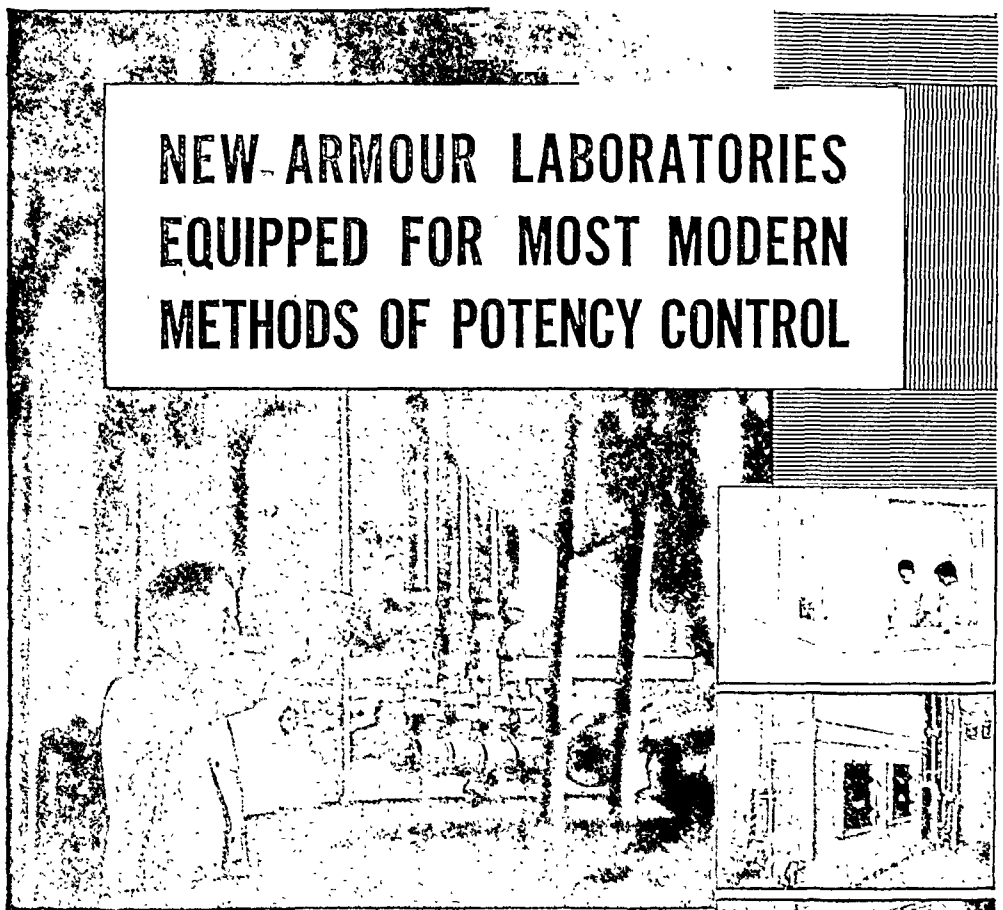
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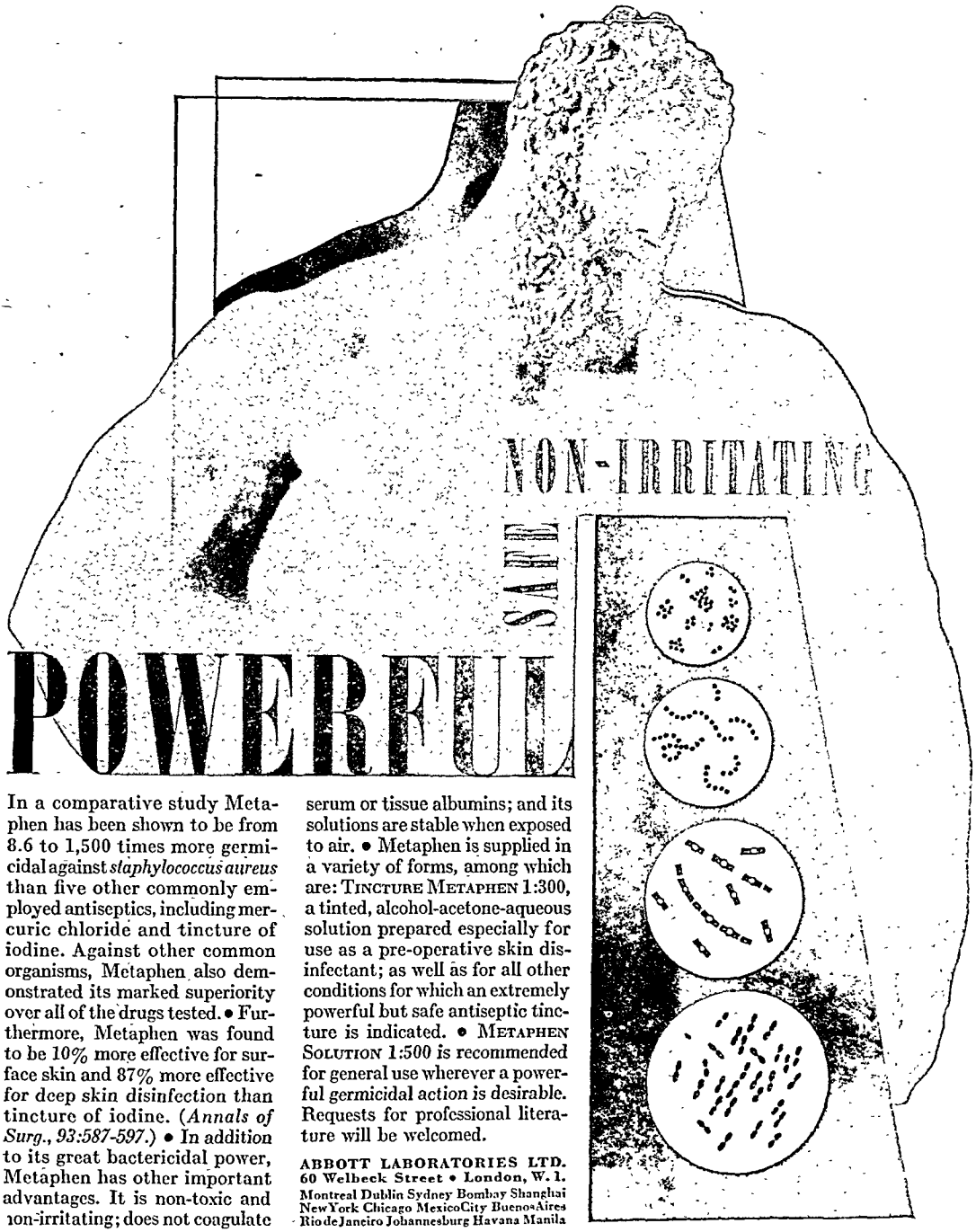
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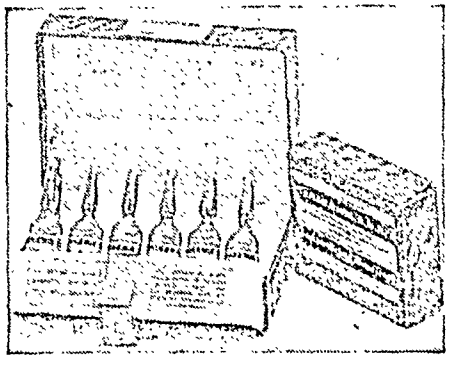
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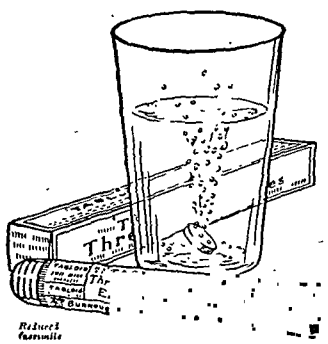
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BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 10 1937

PARTIAL GASTRECTOMY

A REVIEW OF 320 CASES

BY

NORMAN C. LAKE, M.D., M.S., D.Sc., F.R.C.S.

Senior Surgeon, Charing Cross Hospital

In 1879 Pean performed the first gastrectomy; two years later Billroth reported the first successful case of pylorectomy and Wölfler did the first gastro-enterostomy, following the suggestion of Nicoladoni. Thus surgery entered into competition with medicine in the treatment of gastric lesions, and the intervening years have seen successive waves of opinion in favour of one or other form of treatment follow one another with such bewildering rapidity that it would take a medical Einstein to produce a formula which might lead to a conclusion unbiased by the particular mental standpoint of the observer.

In the past ten years there have been two peaks of medical interest—first, the reintroduction of intensive alkalinization, and recently, following the work of Aron, treatment by histidine. On each of these occasions the responsible surgeon and the conscientious practitioner must have felt at a complete loss to know what advice to give their patients, for who would dare advocate operative measures if the lesion could be permanently cured by simple dietetic and medicinal means? In the former instance the dilemma was solved by the passage of time, as surgeons found that most of the cases they were called upon to handle had already had a course of alkaline treatment. We are even now passing into a similar stage with regard to histidine, but its introduction is too recent to allow of any *ex cathedra* statement.

For this reason it seemed that the present was a suitable time to review the position of gastrectomy, but I was influenced in this decision by two other factors: the passing of the three hundredth case provided a convenient milestone and a sufficiency of material to reduce statistical errors to a comparatively small amount; in addition there was the desire to answer certain correspondence that followed the publication (Lake, 1928) of a much smaller series of cases in which a fairly high percentage of successful results was claimed. Thus Hurst (1928) commented: "Experience shows that the 'last' results—that is, after an interval of ten years or more instead of five years or less—would give a much greater number of unsatisfactory results." I have found it difficult to curb my impatience while waiting for the necessary interval to elapse which should provide the answer to this criticism, but I am now in a position to include a fair number of cases of over ten years' duration in this review. As will be seen later they fortunately do not support these gloomy prognostications.

The practitioner cannot be expected to be intensely interested in the technical details of the operation, however important to the surgeon they may be, and so in this article I shall limit the scope to a consideration of the effects of the operation, the results achieved, the risks involved, and such views of the aetiology of ulceration as have arisen from a study of the cases.

The total number of operations reviewed in the series is 320; so far as possible we have attempted to follow the cases for long periods and to carry out such post-operative investigations as appeared necessary or likely to provide information upon particular problems. The "follow-up" system has not been as efficient as I had hoped; in particular the industrial and financial crisis of 1932, with its consequent movements of the population, had a marked influence upon the continuity of the records. The number of cases followed for over five years is thus reduced; but this does not of course affect the immediate statistics relative to mortality, etc. A statistical study of the available figures has been made from many different angles, but only those will be given here which bear upon the particular points under consideration.

The lesions for which the operation has been performed may be divided into ulcers (gastric, duodenal, and pyloric), jejunal anastomotic ulcers, and carcinoma. The subdivision of ulcers into three instead of the more usual two types is a method which I have for long adopted, on account of the fact that in many large ulcers it is impossible to say on prima facie evidence where they arose. Commonly they are assumed to be duodenal, since gastric ulcers on the pyloric ring are held to be rare. I should have regarded this point as of but small significance had it not been that the mortality statistics quite unexpectedly showed it to be of some importance.

Lesions for which Partial Gastrectomy was Performed

Gastric ulcers	115
Pyloric ulcers	56
Duodenal ulcers	71
Jejunal ulcers	27
Carcinoma	51
	320

Such a list, however, fails to indicate that some of the gastric ulcer cases had progressed to hour-glass contraction (eleven cases); that some of the pyloric and duodenal ulcers had caused obstruction with dilatation of the

stomach (twelve cases); and that, apart from cases of jejunal ulcer, several had had previous gastric operations (perforation ten cases, gastro-enterostomy eight cases, local excision two cases). Nor does it show what, in my opinion, is a much more important feature, especially from the aetiological point of view—namely, that in a considerable proportion of instances the ulcers have been multiple.

I have previously pointed out that the surgeon whose practice includes but few gastrectomies is unlikely to be impressed by the frequency of multiple ulceration, since he has no opportunity of examining carefully the mucosa of the stomach but sees or feels merely the ulcer which is most active at the time of operation. Investigation of the parts removed by gastrectomy demonstrates that multiple ulceration has occurred in 40 per cent. of cases and that the combination of gastric and duodenal ulceration is by no means uncommon. Usually one ulcer only is active and the others are represented by thin scars, which give no indication of their presence on the exterior. By many the aetiology of duodenal and gastric ulceration is thought to be separate, but this view cannot be held if these findings are recognized. The only logical standpoint would seem to be either that one is dependent upon the other or that both are due to some common cause. While studying this series it has at times appeared that there might be some sequence of events, the duodenal ulcer with its higher acid curve preceding the gastric ulcer with its lower curve, but the observations have been of too vague a nature to enable any definite deductions to be drawn. Mills's (1917) studies of bodily habitus in relation to disease have led to the suggestion that the broad-chested, active, hypersthenic type, forceful both mentally and physically, is prone to the development of duodenal ulcer, while the asthenic individual tends to develop gastric ulcer. The theory is an intriguing one, and fits in well with modern ideas of physiological types, but there is little indication in this series that more than a small proportion of the cases conform to these types; many of the duodenal ulcers occurred in asthenic types. The theory is probably fundamentally correct, but the exigencies of modern civilization so complicate the issue that in practice it is of little value as a guide. Indeed the frequency with which gastric and duodenal ulcers are found in the same case shows that Mills's ideas can only be applied as a statistical approximation when large numbers are under consideration.

Aetiology

It would be as well here to consider one or two points in connexion with aetiology. There seems to be a general consensus of opinion among physicians and surgeons alike that eventually peptic ulceration will be treated by medicinal, or possibly by prophylactic, measures. This stage will not, however, be reached until more knowledge of the aetiological factors is obtained.

There are few manipulations to which the experimental animal can be subjected which do not produce a lesion of the gastric mucosa; injections of drugs, toxins, cytolysins, irritants, bacteria; excision of adrenals, thyroid, liver; interference with the nerve supply or with the central nervous system; changes in the blood supply or its composition; traumatization of the mucosa; production of pyloric stenosis, and other operative procedures. These methods, however, cause acute ulcers, which heal so rapidly as to make experimental observations difficult. Mann and Williamson (1923), by experimentally altering the normal relations of the alimentary canal, were able to produce chronic ulcers which were attended with the complications seen in human cases, notably haemorrhage and perforation. It must be stressed that great caution is necessary in drawing analogies between chronic ulceration in human beings and that in experimental animals, for in the latter profound metabolic changes must result from disturbing the normal relation of the stomach to the intestine. Following upon this work Aron (1933) conducted experiments which seemed to show that the duodenum supplied an important digestive element, the absence of which causes deprivation of the acid amines essential to life. The final stages in the digestion of proteins into simple amines is brought about not by the pancreatic juice but by the duodenal secretions. The amines which cannot be synthesized in the body are chiefly lysin, tryptophan, and histidine. Aron found that of these histidine could prevent ulceration in dogs subjected to the Mann-Williamson operation. Subsequent clinical trial with histidine has produced conflicting results. My own experience does not support the claim that histidine has a curative effect in cases of peptic ulceration. Many patients come to operation who have had several courses of this treatment. Apart from this, experimental work by Morton (1927) is in direct opposition to Aron's hypothesis that histidine protects the mucosa from attack by the gastric juice. Morton's researches, indeed, support the theory that the acid secretion is the most important single aetiological factor in peptic ulceration, combined with the trauma of forcibly ejected gastric contents—a theory suggested by Bland-Sutton many years ago. Experiences with cases of gastro-colic fistula, almost the equivalent in human cases of the Mann and Williamson experiment, are also in direct conflict with the theory. The part played by pepsin is not clear. But my own investigations suggest that the secretion of pepsin follows that of acid. As secretion of gastric juice is so dependent on psychological factors the interpretation of the reaction to a test meal is by no means free from fallacy. It is, however, generally agreed that the stomach in duodenal ulcer is hypertonic, hypermotile, and hypersecretory, and that the reverse is true in gastric ulcer—at all events in the chronic cases.

The link between these variations of secretion and motility in peptic ulceration would, it seems, be in the central nervous system: a theory that has experimental support. Cushing and others have shown that lesions in the hypothalamus are frequently associated with peptic ulceration, and it may be noted here that in this region is the controlling centre of the sympathetic system. It is well known that the progress of a peptic ulcer is affected by the emotional state of the patient, and that this is closely coupled with sympathetic activity. In this connexion it is undoubted that vasomotor effects also must play an important part in the aetiology of peptic ulceration.

It looks as if the riddle of peptic ulceration will ultimately be solved by reference to the autonomic control of the stomach and duodenum; and as the final transmission of nervous impulses is through a chemical intermediary, hormonic and chemical factors will come into the aetiological picture. Until these various problems have been solved and a rational medical regime made possible many cases of peptic ulceration will still be best treated by surgical measures.

Mortality of Partial Gastrectomy

It might be thought that the mortality rate of an operation would be the most definite and easily arrived at of all the statistics connected with its performance. A study of the published figures, however, soon reveals that it is

almost impossible to establish what may be considered a fair average general rate. The following list, for instance, indicates that the most careful scrutiny is needed before a mortality rate can be accepted.

Reporter	Cases	Mortality Percentage
Moynihan	164	1.6
Garnett Wright	62	4
Morley (Polya)	47	6
Bastianelli	137	1.5
Schwartz	*210*	*18*
von Haberer (Billroth II)	134	11
Finsterer	175	4
De Takats	226	5.4
St. Bart's: Ulcer	207	16.9
St. Bart's: Carcinoma	67	25.5
St. Bart's: combined		18.6

In the items in this list, where the total number of cases is less than one hundred, an error due to the small numbers may have crept in, for it is within my experience that as many as sixty consecutive cases may be performed with but two deaths, but that when the number expanded to a hundred the mortality figure approached the general average of a large series. For this reason the smaller numbers can be ignored. With numbers above a hundred, however, this error gets considerably smaller, and it will be conceded that when a surgeon has performed over a hundred operations of this type he can no longer be accounted a novice, so that the figures are not subject to the criticism that the mortality might be considerably lowered with further experience. Even so we find in this series the utmost discrepancy. For instance, Schwarz with an experience of 210 cases gives a mortality of 18 per cent., whereas Moynihan with 164 cases has a mortality of but 1.6 per cent. Now it is impossible to believe that the skill of two surgeons of very big experience in the operation can be as different as these figures would lead us to think, and it immediately becomes clear that we must look for some other explanation. Either the mortality rate is a selected one from which certain cases are excluded—and in this regard it is of interest to note that the term "primary mortality" has unfortunately crept into some statistics—or the type of case chosen for operation is very different in the two clinics. To exclude from the operating list cases which look to be difficult and are bad operative risks may be regarded as good surgical judgement, but unless we have complete knowledge of how the refused cases fared without operation we are not justified in lauding a low mortality dependent upon such exclusion. So we are left in doubt as to the real mortality, and this quandary will remain until all surgeons agree to publish a complete mortality list without any equivocation or the introduction of such qualifying terms as "primary mortality." For these reasons, in dealing with the present series, I give first of all the total mortality from all causes whatsoever up to a period of three months after the operation.

In this way certain conditions only remotely connected with the operation have been included; indeed, the number of deaths due to intercurrent disease, such as pulmonary tuberculosis and uraemia, gives a percentage actually higher than the lowest figure in the above list for the deaths from all causes. It is this in particular which has made me suspicious of accepting these figures without qualification, for it must surely fall equally to the lot of every surgeon, experienced and inexperienced, to have such sequelae after an extensive abdominal operation, often of necessity performed upon patients in poor general condition.

The total number of deaths in this series reckoned in this way is as follows:

	No. of Cases	No. of Deaths	Deaths per cent.
Ulcer cases	242	23	9.5
Anastomotic (jejunal) ulcers	27	4	14.8
Carcinoma	51	7	14.0
Total	320	34	10.6

There was no immediate mortality—that is, within twenty-four hours—in this series.

When the ulcer cases were further subdivided into their separate groups an interesting result was obtained. The mortality rates then were: gastric ulcer, 11.1 per cent.; duodenal ulcer, 11.4 per cent.; pyloric ulcer, 5.3 per cent. This considerable difference in the rates was unexpected and obviously needs explanation. The gastric and duodenal cases include the very difficult ones where the ulcer is close to the cardiac orifice or extends from the duodenum into the pancreas or liver. These are the cases which technically tax the surgeon's abilities to the maximum, and it is only to be expected that the mortality would be above the average. The ulcers in the vicinity of the pylorus, on the other hand, constitute the easier cases, usually quickly performed without difficulty. As a corollary it is obvious that the surgeon who so chooses his case as to include a large proportion of these pyloric ulcers will show a lower mortality than one whose choice is made on a wider basis.

Causes of Death

The causes of mortality are always worthy of study, for only in this way can technique be improved. Payne (1936) has recently published the results of the post-mortem findings at St. Bartholomew's Hospital. He found that the commonest causes of death were peritonitis and pneumonia (thirty-two and fifty-one cases), while shock and infection around the duodenal stump accounted for a further nine deaths.

In the present series the list is as follows:

Chest complications, including embolism but excluding tuberculosis	12
Pulmonary tuberculosis	2
Haemorrhage, internal and intraperitoneal	4
Leakage and peritonitis	6
Thyrotoxicosis	1
Uraemia	2
Influenza	1
Delayed shock	1
Rupture and resuture of wound	1
Intussusception, anastomosis into jejunum	1
Damage to mid-colic artery	1
Embolism from haemorrhoidal and internal iliac veins	2
	34

It will be seen that in five cases death was due to the lighting up of intercurrent disease (tuberculosis, uraemia, and thyrotoxicosis), while in three others (influenza and thrombosis of haemorrhoidal veins following enemata) it was only very indirectly connected with the operation. If these be excluded twenty-six operative deaths remain (8.1 per cent. for all the cases, or 7 per cent. for the ulcer cases. When the patient is otherwise healthy, therefore, this figure may be taken as a fair representation of the risk. If the surgeon chooses his cases to exclude the very high ulcers and the complicated duodenal ulcers this mortality may be halved, but it should not be overlooked

that the need for radical treatment is often greatest in the cases which would thus be excluded.

As in Payne's series the greatest risk is of pulmonary complications, with leakage and peritonitis coming second. The former are due more to the operative manipulations than to the anaesthetic used, and so it is not surprising to find that, although almost every known type of anaesthesia has been tried, there has been little variation in the mortality.

Results

The results in the ulcer cases must be considered to be very satisfactory; 198 cases have been followed for two years upwards, and of these only fifteen are unsatisfactory. A further investigation of the unsatisfactory cases showed that in over 50 per cent. (eight cases) a second condition was present to account for the symptoms; thus four cases had cholecystitis and two had colonic spasm. In the remainder the result is unsatisfactory on account of persistence of symptoms. Four were thought to have jejunal ulceration. In two of these exploration was undertaken; one revealed a small ulcer on the lesser curve proximal to the anastomosis and close to the cardia, the other had no abnormality of any sort. Three definite cases of jejunal (anastomotic) ulceration were operated upon elsewhere, one having perforated, and they are included in these results.

A further analysis indicates that on the whole the more severe the lesion the better the result. This is not to be explained on the psychological basis that the patient who has suffered intensely is inclined to exaggerate the quality of the relief afforded him, for in most instances there has been absolutely no pain or discomfort after the operation. It also appears that the percentage of unsatisfactory results is larger in the duodenal cases than in the gastric ulcers. Since, however, the majority of duodenal cases give satisfactory results, I believe the explanation of both this and the previous anomaly to be that a certain number of misdiagnosed cases are included, particularly cases where a small duodenal ulcer (probably completely inactive) is found at the operation, but the patient's symptoms are really due to other causes. With gastric ulcers, for obvious reasons, this error is less likely to arise. The inclusion of but a small number of such misdiagnosed cases in a series of this nature is sufficient to account for the less satisfactory results in the duodenal cases and for the better results in the larger and more obvious lesions.

A small group, otherwise satisfactory, complain of a transient feeling of biliousness before breakfast or of faintness after a heavy meal. These cases have been investigated without any physical abnormality being discovered. I cannot help thinking that such symptoms may be due to involvement of the gastric branches of the vagus in the stomach scar. But it must not be overlooked that an extensive operation often has a bad psychological effect. Some patients remain excessively apprehensive in the epigastric region for long periods, even permanently.

Effect on the Blood

The functions of the stomach as a haemopoietic agent are now well understood, and it might be expected in consequence that an anaemia, even a pernicious anaemia, would follow gastrectomy. In fact, for reasons that are not yet clear, there is very little change in the blood count. In this series a large number of post-operative blood counts have been undertaken, but there is no record of any case of pernicious anaemia as yet. Since twenty-seven of the cases are of ten to fifteen years' duration it might be expected that any reserves or store of haemopoietic substance would long since have been used up, if the pyloric end of the stomach is their only source. These are matters of medical interest; it is sufficient for the surgeon to know that experience shows that the dire results prognosticated ten years ago do not follow the operation. A mild microcytic anaemia does follow in some cases, but it is rarely severe enough to attract attention. An average of a large number of counts gave the following: red cells, 5,190,000; white cells, 9,390; haemoglobin, 95 per cent.; colour index, 0.88.

The Test Meal

The effect of the operation upon the test meal has been intensively studied. At the outset it must be realized that the performance of a test meal upon the post-gastrectomy case is associated with certain technical difficulties which render the results suspect. In this investigation every care was taken to ensure that the specimens were really obtained from the stomach stump and not from the intestine beyond.

Where a large Polya anastomosis has been performed there is almost always complete achlorhydria. With a restricted orifice there is in some cases a small amount of acid (15 degrees to 20 degrees) present in the one-hour specimen, but the general reduction of acidity is profound. Working on these cases Adler (1930) showed that even the completely achlorhydric cases retained the ability to respond to histamine stimulation, the test meal often showing over 20 degrees of acidity as a result of the injection. The same cases tested after a year or two had, however, lost the ability to respond. It was supposed that this might be attributed to a disuse suppression of the hormonic mechanism. Extracts prepared from the portion of stomach resected had no obvious effect.

Barium Meal

The radiographic results of the various types of gastrectomy were discussed by Shanks (1934) at the Bournemouth meeting of the British Medical Association. I cannot do better than quote from his paper:

> "Polya; Lake's Modification. This modification, judging by the radiographic appearance, controls the efflux of the gastric contents better than any other of the Polya type. In addition to preventing 'dumping' into the jejunum it renders reflux into the afferent loop very improbable. The gastric stump fills reasonably well in the erect position, and the stoma is clearly seen at the lower pole. The right border of the stump is formed by the remaining portion of the lesser curve and the sutured end of the stump above the stoma. This largely loses its initial angularity, and becomes more or less straightened out. At the junction of the two there is apt to remain a dimple, which must not be mistaken for a recurrent lesser curve ulcer."

Results in Carcinoma Cases

The most important conclusion reached in this group is that there appears to be no absolute relation between the size of the growth and the period of freedom from recurrence, provided that there is no widespread metastasis at the time of operation. In this series two cases of massive carcinoma, several inches in extent, are known to be free from recurrence for seven and nine years respectively, while another, in a young man, did not recur until six years had elapsed. The average duration of life after the performance of the operation has, however, been but two and a quarter years. The freedom from symptoms to within a short time before death has been gratifying, and makes it advisable to continue with the operation even when the presence of secondaries beyond the possibilities of removal is discovered.

Operation

It is not intended here to enter into a technical description of the various operative details, but a brief account of the operation I now perform is necessary. This has been evolved slowly over a period of years, and, although it gives a result which is not unlike that of the Finsterer operation, it was devised entirely independently, each separate modification being introduced in an attempt to avoid some observed defect or fallacy in the cases previously dealt with.

The anaesthetic is a high spinal percaine given by a modification of the Howard Jones method, which enables very small doses to be used. The majority of cases have no other anaesthetic, but gas-and-oxygen is not denied to those who are psychologically unfitted to remain conscious. In an early stage a local injection of percaine is given around the oesophageal orifice of the diaphragm to diminish the nauseating sensation produced by traction upon the vagus. The proximal line of division passes very obliquely across the stomach from as high up the lesser curve as is technically possible, to a point on the greater curve at the junction of the epiploic arteries. In the average case this means that about two-thirds of the stomach is removed. The distal section is placed across the duodenum about an inch beyond the pylorus, unless the presence of a large ulcer here makes a more distal division necessary. In a few cases a colossal ulcer here renders section of the duodenum impossible, and then the stomach may be cut across proximal to the pylorus, a modification advocated as a routine by Ogilvie. This modification is not to be recommended, however, for any other than the most difficult cases. Similarly the proximal line of section may, under exceptional circumstances, leave a very high lesser-curve ulcer and yet a good result may be obtained, but this is also a device to be adopted only in the face of great technical difficulties.

The anastomosis is a retrocolic one, the first coil of jejunum being passed through an aperture in the mesocolon, which is usually to the left of the midcolic artery. The proximal end of the coil is attached to the lesser curve so that the bowel descends across the cut end of the stomach. The stoma now made in the bowel is equal in length to but half, or less, of the width of the stomach and is situated at the lower end of the anastomosis. Suturing is continuous, but is performed in such a manner as to close the upper portion of the stomach aperture and to fix the uncut portion of the jejunal loop over the suture line. Extra sutures are placed at the lesser curve as a precautionary measure and to attach the anastomosis to the aperture in the mesocolon.

A small drain may be used in cases where there is much oozing or where penetration of the pancreas or liver by the ulcer has rendered cauterization of these organs necessary. Careful after-treatment is essential, and no operation of this type should be undertaken without preliminary transfusion if the haemoglobin percentage is under 60. With spinal anaesthesia shock is slight and patients usually leave the table with an extremely good pulse. The operation may take anything from thirty-five to seventy-five minutes, but while no time should be wasted it is a mistake to scamp any part of the operation for the sake of saving a few minutes.

Indications

The indications for the performance of a partial gastrectomy may be absolute or relative. Carcinoma in the absence of widespread secondaries falls into the first group, but this should also include cases of gross gastric ulceration. All other gastric ulcers which have not rapidly yielded to medical measures, and where the technical difficulties are not insuperable, should in my opinion be given the choice of a gastrectomy. Established duodenal ulcers without obstruction and with a high acid curve also form an indication, but those with pyloric obstruction and a low curve do so well with a gastro-enterostomy that it would be a mistake to subject them to the more risky operation. For anastomotic ulcers following gastro-enterostomy a gastrectomy is the only treatment likely to give permanent relief: some of the most gratifying results in this series come into this group.

Good surgical judgement, however, demands that many other factors connected with the patient's general condition be taken into consideration before the question of operation is finally decided.

Summary

1. Three hundred and twenty cases in which the operation of partial gastrectomy has been performed for gastric, duodenal, and anastomotic ulcers, and carcinoma are reviewed.

2. The after-history of the cases has been studied for periods up to fifteen years after operation.

3. Some aetiological ideas arising from the experiences of the cases are discussed.

4. The gross mortality from all causes was: ulcer cases, 9.5 per cent.; anastomotic ulcers, 14.8 per cent.; carcinoma, 14 per cent.

5. If an ulcer is situated in the pyloric region the mortality of the operation is but 5.3 per cent.

6. The commonest causes of post-operative death are lung complications and peritonitis.

7. The incidence of jejunal ulceration after partial gastrectomy is less than 2 per cent.

8. No cases of post-operative pernicious anaemia are recorded, but a microcytic anaemia of mild degree is occasionally seen.

9. The general permanent results in the ulcer cases are probably better than those obtained by any other method of treatment.

10. The average duration of life in the carcinoma cases after operation was two and a quarter years, but some patients with extensive growths lived for as long as seven and nine years.

11. The effects of the operation upon the test meal and the barium meal are described.

12. A brief account of the type of operation performed is given.

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TESTS FOR RENAL FUNCTION

BY

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Three tests commonly employed for estimating renal function are the blood urea and urea clearance, the phenolphthalein test of Rountree and Geraghty (1910), and the maximum specific gravity of the urine. These tests have been carried out in sixty-four cases under my care in which it was thought that impairment of renal function might be present, and I have attempted to compare the results. The tests were made in three general hospitals by the laboratory staffs, in the course of their routine work. The patients investigated were suffering from acute glomerulonephritis (eight cases), chronic glomerulonephritis, benign hypertension, and hypertension with nephritis (malignant hypertension). This classification is at any rate descriptive of the types of cases. Oedema was present to a greater or lesser degree in all the cases of acute nephritis, but, apart from this, nephritic oedema was uncommon. Three patients had slight oedema, which was thought to be cardiac in origin.

Similar investigations have been reported by several other writers. The urea clearance test is usually regarded as the most accurate measure of renal function with the exception perhaps of the creatinine clearance test, with which it has been found to agree (Cope, 1931) if the original conditions mentioned by Addis—namely, diuresis and a raised blood urea—are adhered to; and Cope attributes the failure of Hok Lan Ong (1932) to demonstrate this parallelism to the fact that he did not observe these conditions. The normal value for the Van Slyke urea clearance (McIntosh, Möller, and Van Slyke, 1928) is 75 per cent. normal or over, and this was the clearance test used in this investigation. The phenolphthalein was given intravenously and the urine collected for two hours. The normal is 60 to 80 per cent. The fractional phenolphthalein test (Shaw, 1925; Chapman and Halsted, 1933) is said to be a better method. The maximum specific gravity test used was as described by Fishberg (1934), and is a modification of Volhard's (1918) test. The normal is 1020 and over. The modification introduced by Lashmet and Newburgh (1932) is claimed to be more sensitive, but it is more troublesome to carry out. One per cent. of dissolved protein in urine increases the specific gravity by 0.003, and an allowance must be made for this. It is recognized that in the presence of oedema the value of the maximum specific gravity test is diminished, and this must be borne in mind whenever it is being compared with other tests.

Analysis of the Cases

I have divided the sixty-four cases into two groups for the purpose of making a few comparisons between the renal function tests and the clinical signs presented by the patients. Group A (thirty-three cases) contains those cases in which one or more of the renal tests showed distinct impairment of function, and Group B (thirty-one cases) those in which no such impairment was demonstrated. Those in Group A were for the most part more seriously ill than those in Group B, but there was clinically no difference apart from the renal tests between some of the cases included in Group A and some in Group B. Twenty-nine of the thirty-three cases in Group A had, resting in bed, a systolic blood pressure of 180 mm. or over, as compared with seventeen of the thirty-one cases in Group B. Retinal changes, usually small haemorrhages, swelling of the disks, and white spots were observed in fourteen of the Group A cases and in only three of the Group B. Red blood cells were present in the urine of fifteen of the Group A cases, as compared with seven of the Group B. Blood counts were unfortunately only carried out when anaemia was thought to be present. There were twelve of the Group A patients in whom a haemoglobin value of under 80 per cent. was found and of the Group B patients only two, but these results are not strictly comparable. From the comparisons I have made and from a consideration of the symptoms of which the patients complained I concluded that renal function tests did, in many cases, give a good estimate of the patient's condition, but, on the other hand, often there was little correlation between the tests and the clinical examination.

Group A

Montgomery (1936) as a result of his investigations states that "sufficient emphasis has not been laid upon the necessity of interpreting [the urea clearance] results in relation to their blood urea concentration." In grouping the results of the renal function tests I have made use of the blood urea where possible. The sixty-four patients investigated were all conscious and able to give sufficient co-operation. Six had a blood urea of over 100 mg. per 100 c.cm. of blood, and in each case the urea clearance was under 16 per cent. and the phenolphthalein under 11 per cent.; five were chronic cases. In four of the six cases the maximum specific gravity was between 1010 and 1012; in the fifth case, a patient who was admitted with a blood urea of 135 mg. and who later died of uraemia with a blood urea of 216 mg., the maximum specific gravity was 1018. This last case was probably an acute nephritis, as the illness was said to be of short duration, marked oedema was present, and the urine was much diminished; but, on the other hand, the patient was 60 years of age and her systolic blood pressure was 205 mm. I did not detect any retinal changes. The sixth case was one of chronic nephritis passing very little urine, with a blood urea of 256 mg. and a maximum specific gravity of 1028. There was oedema of the lower limbs and in the back. This patient was able to concentrate the urine but was unable to secrete an adequate amount. In all six cases the blood pressure was over 200 mm., and the guaiac test or the microscopical examination of the urine showed the presence of blood.

There were twelve cases, two of acute nephritis, with a blood urea between 50 mg. and 100 mg. In ten of these, including the two cases of acute nephritis, the urea clearance was 35 per cent. or less. The urea clearances in the other two were 65 per cent. and 51 per cent., the blood ureas 50 mg. and 56 mg. Both were cases of chronic nephritis in which there was a little oedema thought to be cardiac in origin; the blood pressures were high and albuminuria was present. In one retinitis was found, and she has since died of cardiac failure. The maximum specific gravity was respectively 1014 and 1020, and the phenolphthalein 36 per cent. and 26 per cent. Clinically these two patients were as likely to have a clearance under 35 per cent. as many in whom this was found to be the case. The maximum specific gravity in this group of twelve cases was under 1015 in nine cases,

and in three it was 1020 or over: one of the latter was an acute nephritis with oedema, in another there was a slight degree of cardiac failure, and one patient died later of a stroke, but all three were cases in which probably there was some failure of renal function. The phenolphthalein results were below 60 per cent. in every case. It was evident that in most patients with a blood urea of 50 mg. or over the three tests gave readings below normal, but I was unable to make out any true parallelism between the extent to which the tests were depressed.

Of the remaining forty-six cases there were fifteen—two of acute nephritis—in which one or all of the tests showed some definite abnormality, in spite of the fact that the blood urea was in many cases normal and never as high as 50 mg. It is said that half the functioning kidney tissue can be removed before the blood urea shows any rise (MacKay and MacKay, 1927), and it was expected that there would be many patients with a normal blood urea in which other tests would demonstrate a loss of function. In ten of these the urea clearance was below normal, the exact figures varying between 32 per cent. and 65 per cent. In the other five the urea clearances were normal, the blood pressures were high, there was slight albuminuria but retinitis was absent, and there were no red blood cells in any of the urines when examined. In four of these five cases the maximum specific gravity was under 1020, and in two the phenolphthalein was below normal. There was slight oedema in two of these patients, which somewhat spoils the specific gravity test; but the other two had no oedema, the blood pressures were high, there was albuminuria, and it may well be that some degree of kidney damage was present. Of the fifteen cases, in four the maximum specific gravity was normal, and yet in these the urea clearance was decidedly low. In two of these red blood cells were present in the urine, another had retinitis, but the fourth had no retinitis and no red blood cells in the urine. In five of the fifteen cases the phenolphthalein was normal when the urea clearance showed a lowering of renal function. It will again be seen that the tests do not agree closely. It is clear that in many cases of renal disease any one test may fail to demonstrate loss of renal function and another show it to be present. Freyburg (1935) found among his cases of arteriosclerotic Bright's disease thirty-eight with impaired maximum specific gravity (Lashmet and Newburgh method, 1932) and only four with a lowered urea clearance. Perhaps his patients were not so ill as many in this investigation.

Group B

In the remaining thirty-one cases (Group B) the urea clearance, the maximum specific gravity, and the phenolphthalein were all normal or very nearly so. There were eight cases of acute nephritis, and in five of these the urea clearance and the phenolphthalein were reduced, in three to a marked degree as they were severe cases. In four of the eight cases the maximum specific gravity was 1020 or above that figure whenever taken throughout the illness. In two cases it was low, even on admission, and in two it was over 1020 on admission and dropped below this figure during the course of the illness. It was interesting to follow the improvement in renal function as the acute cases recovered. Cullen, Nelson, and Holmes (1935) found that in most cases of acute nephritis renal tests showed normal results one month after the cessation of acute symptoms. Alving and Van Slyke (1934) stated that in some cases of acute nephritis the maximum specific gravity failed to return to normal in spite of the fact that the clearances had reached normal figures; this was also observed by Freyburg (1935). Freyburg and Lashmet (1935) reported a case of mercuric chloride poisoning which recovered and in which the renal function tests were estimated frequently. The urea clearance was easily the most affected and dropped to 5 per cent., yet the non-protein nitrogen did not rise above 57 mg., and at the point when the clearance was 46 per cent. the maximum specific gravity was 1025 (Lashmet and Newburgh method, 1932) and the phenolphthalein 60 per cent.

Comparative Mortality in Groups A and B

Many cases have been followed up after leaving hospital. In Group A there have been during the past two years fourteen deaths, compared with three in Group B. Seven patients died of uraemia, two of apoplexy, three of cardiac failure, and two of pneumonia. In Group B two appeared to have died of cardiac failure and one of apoplexy. It was not possible to give an accurate prognosis from renal tests, as some cases went downhill faster than others and some severe ones maintained their position for a surprisingly long time. One chronic case when first seen had a blood urea of 46 mg., a clearance of 71 per cent., and a phenolphthalein reading of 35 per cent.; eleven months later the blood urea had risen to 120 mg. and the clearance had fallen to 14 per cent. In another case the clearance dropped in three months from 54 per cent. to 26 per cent. and the blood urea rose from 40 mg. to 75 mg. On the other hand many cases which had similar or worse renal readings when first seen are still alive and well. One case which I saw a year ago gave a phenolphthalein reading of 20 per cent., yet she is still alive, and the most recent test gave 36 per cent. The respective urea clearance results were 45 per cent. and 35 per cent.

Comparison of the Tests

In making a comparison one was struck by the fact that while on one occasion one test would seem to be the most sensitive, in another case it would seem to be the least sensitive. In many patients the maximum specific gravity appeared to be a very delicate test; in one case of uraemia, however, it gave a reading that was normal and in another nearly normal. The phenolphthalein often agreed with the urea clearance, but there were many occasions on which the one result was at variance with the other. In severe cases the agreement was good, both invariably showing marked reduction. The phenolphthalein is not regarded as a very sensitive test, yet in many cases, chiefly those with a high blood pressure, I found it to be apparently a delicate test, and low results were obtained more often than I expected. It was still more surprising to find that it sometimes showed an apparent loss of renal function before the urea clearance test. Lundsgaard and Möller (1925) believe that the dye output may be decreased in the presence of a high blood pressure, and this may account, in part at least, for the frequency of low readings in some of my cases. Chapman and Halsted (1933) state that they have observed cases of hypertension which showed depressed fractional phenolphthalein curves with few or no other signs of kidney disease, but have also seen normal curves in as many cases of hypertension in which there was no evidence of Bright's disease. Christian and O'Hare (1925) found that the two-hour phenolphthalein test did not demonstrate the earlier stages of kidney disease. MacKay and Rytand (1935) regard the phenolphthalein test as being of more value than the blood urea and the maximum specific gravity tests.

Chapman and Halsted (1933) believe the fifteen-minute phenolphthalein test to be more valuable than the two-hour test.

Elliot and Nuzum (1936) observed little correlation between the maximum specific gravity test, the phenolphthalein test, and the urea clearance test, and thought that what agreement there was between them was little better than could be expected as a chance occurrence. Riches and Robertson (1935) found the urea clearance to be a good index of renal function. Hutchison (1936) agrees with this view. Fowweather (1934) found it hard to establish even the normal clearance until he gave urea before the test. Van Slyke (1930) regards the urea clearance test as more accurate than the phenolphthalein.

None of these tests help us to give an accurate prognosis. Indeed, Elliot and Nuzum (1936) agree with Addis (1931) that none of the accepted methods of clinical examination can differentiate between patients likely to die in a year or two and those likely to live many years. Cope (1934) appears to hold a somewhat similar view. The rate at which renal function will depreciate varies from case to case, and Cope (1934) further states that even repeating the tests at intervals does not furnish information reliable enough to predict the course of the disease. This seems the more promising method. An increasing blood urea due to chronic nephritis means a bad prognosis, and, generally speaking, the higher the blood urea and the lower the results of renal function tests the sooner death will take place. The fact that tests of renal function are not all that one could wish for makes the ordinary clinical examination of the patient as important as ever it was.

Summary and Conclusions

Renal function tests have been carried out in sixty-four cases in which it was thought that kidney disease might be present. The tests used were the blood urea and urea clearance test, the maximum specific gravity test, and the phenolphthalein test. In the first group of thirty-three cases some loss of renal function was demonstrated, and the patients comprising this group were on the whole more incapacitated and death was commoner than among the second group of thirty-one cases, in which no loss of renal function was observed. Many of the cases were followed up after their discharge from hospital. On clinical grounds alone some of those included in the first group because of loss of renal function might have been included in the second group without causing the least surprise. The reverse is equally true.

With pronounced renal failure, as indicated by a high blood urea, the urea clearance and phenolphthalein tests showed marked depression of renal function, but this was not true of the maximum specific gravity. On two occasions it was normal, or nearly so, when the blood urea was over 100 mg. In both cases there was oedema and the patient was passing very little urine. The ability to secrete urine was at fault, but the ability to concentrate was normal. In some cases where renal function was apparently not nearly as severely impaired this test seemed to be very delicate, and the same may be said of the urea clearance test and the phenolphthalein test, each in some cases appearing to be the most sensitive. A surprising number of patients showed a lowered phenolphthalein excretion, but this may possibly be due to the fact that many had a high blood pressure. The lack of parallelism between the tests, especially in the lesser grades of renal damage, was most disappointing. None of them appear to be capable of enabling the clinician to give a very much more accurate prognosis than is possible from a knowledge of the blood urea alone. However, if any of the tests show marked loss of renal function in the absence of a raised blood urea it would probably be best to give a guarded prognosis. A re-examination of the patient in three months might help. Clinical examination will often furnish very valuable information, and must still be regarded as of the foremost importance.

To conclude, the failure of the tests to agree closely with one another suggests either that they are not completely reliable or that different renal functions are being measured.

The laboratory work was carried out by Dr. Loveday and Mr. Varley, M.Sc., A.I.C., of the Manchester Royal Infirmary, by Dr. Thomson of Salford Royal Hospital, and by Dr. Dawson and Dr. Smith of Crumpsall Municipal Hospital. It is a pleasure to thank them and the nursing staffs for their co-operation.

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E. W. Twining (*Brit. J. Radiol.*, April, 1937, p. 332) describes an ingenious way of converting the ordinary Bucky couch into a tomograph. Tomography, planigraphy, and stratigraphy are names given to those methods of radiography which aim at the sharp radiographic representation of a selected layer of the patient's body, while all the other layers situated in front and behind the selected layer remain diffusely outlined. This is accomplished by moving the tube and film during the exposure in such a manner that the projections of all objects in the selected layer occupy the same positions on the film, while the projections of objects above and below that layer are blurred by movement. The apparatus described by the author consists of a lever mounted horizontally upon a vertical axis, which transmits the motion of the *x*-ray tube reciprocally to the Potter-Bucky carriage. Its length is equal to the focus-film distance. Its axis is variable along the length of the lever in order to allow the selection of any desired plane of the patient's body. The author describes and discusses experiments demonstrating the accuracy of his apparatus and its applications to clinical radiography.

THE CAUSES AND TREATMENT OF RETAINED PLACENTA*

BY

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Retention of the placenta, with its common complication post-partum haemorrhage, is one of the disasters of child-bearing which even the most efficient ante-natal care cannot prevent. Before considering the causes of placental retention I would distinguish two entirely different conditions in which the placenta remains in the uterus: one is retained placenta, and the other is adherent placenta—much the more rare, having been reported in English journals on only two or three occasions.

Causes of Retention

Adherent placenta occurs when, for one reason or another, the spongy layer of the decidua is absent and the placenta finds direct attachment to the muscle wall (placenta accreta) or even invades the muscle wall (placenta increta). In neither of these instances will there be a line for cleavage, and so the placenta must adhere to the uterine wall. If this adhesion be complete there can be no danger of haemorrhage taking place, owing to the complete lack of placental separation. Repeated dilatation and curettage of the uterus and implantation over submucous fibroids have been suggested as predisposing causes, while incomplete adhesion may occur in the region of the uterine scars. The incidence of adherent placenta has been estimated to be from 1 in 6,000 to 1 in 40,000 births.

Retained placenta is a condition in which the placenta separates partially or completely, but because of some secondary complication (usually a mechanical one) is not expelled from the upper segment of the uterus. The commonest cause of placental retention is undoubtedly uterine inertia, and it is interesting to note that the use of forceps for delay in the second stage of labour often precedes a delay in the third stage. The presence of the placenta in the uterus is in itself a sufficient stimulus for the recurrence of pains in a short time after the delivery of the child. Weak pains are active enough to separate the placenta, but strong pains are necessary to strip off the adherent membranes and to push the placenta down the birth canal.

I believe that in most cases of delay in the third stage of labour the placenta is lying free in the uterine cavity suspended from the uterine wall by the membranes. This assertion is borne out at the operation of Caesarean section, when the placenta separates as soon as the child is delivered: on the other hand, its membranes are found to cling firmly to the uterine walls. This point requires emphasis, because it has an important bearing on the use of injection of the umbilical vein as a mode of treatment for retained placenta. Irregular contractions of the uterus (of which the best example is a contraction ring) may hold a placenta in the uterine cavity and act as another cause of delay in the third stage of labour. Such contractions follow interference—either internal interference during delivery, meddlesome interference with the fundus after the completion of the second stage, or, lastly, the injudicious use of pituitary extracts.

It was because the danger of over-zealous interference was realized that a rule for the conduct of the third stage of labour was introduced into the Leeds Maternity Hospital some years ago which forbade the touching of the uterus for twenty minutes after delivery of the child unless a free loss of blood merited fundal massage. Like all rules this one was bound to fail; in 1932 a patient bled to death owing to the filling up of her atonic uterus with blood, while no obvious outward signs of loss of blood were noted by the nurse in charge.

Nowadays a hand is placed above the fundus, not for the purpose of controlling it but rather to appreciate any changes which may take place in it: should it soften and rise in the abdomen, then gentle massage is applied to it in order to excite contractions of the uterus; should it harden and rise in the abdomen, then tests for the freedom of the after-birth are made. The estimation of the general condition of a recently delivered woman is a matter of considerable difficulty, for the amount of blood that she can lose without being upset varies greatly. The pulse rate may show an alteration of only five beats per minute after a loss of 1,700 c.cm. of blood. The blood pressure and pulse volume are much safer indices: a systolic blood pressure below 100 mm. suggests the need of salines, and below 80 mm. the need of a blood transfusion.

Certain mechanical factors may also act as causes of retention of the placenta. In placenta praevia the attachment of the placenta to the relatively inert lower segment and its consequent partial and delayed separation leads to post-partum as well as to ante-partum haemorrhage. Similarly, in hydramnios—quite apart from the possibility of associated uterine inertia—the placenta may be thin and may cover a large area, thus acting as a poor stimulus for uterine contractions. A patient is quite commonly received into the wards with a retained placenta and no bleeding in whom, after examination, the placenta is considered to be free in the uterine cavity, but its passage is prevented by a full urinary bladder: after catheterization expression is an easy matter. The presence of fibroids is another not uncommon mechanical cause of retained placenta; the retention may be due to the associated uterine inertia or the placenta may rest in a pocket formed from the uterine cavity which has been distorted by the fibroid.

Dangerous Methods of Removal

A placenta was said to be retained if it had remained in the uterus for two hours after the delivery of the child. This definition is adequate only in the absence of bleeding, for when there is post-partum haemorrhage it is imperative that the placenta be removed as soon as possible. At present the methods for the removal of the retained placenta in general use are Credé's manœuvre (at first without an anaesthetic and then with an anaesthetic), and, should this fail, manual removal. For some reason or other both yield better results in the hands of general practitioners than in those of the staffs of lying-in hospitals; nevertheless I feel that they are dangerous methods, especially that of manual removal.

During the past six years I have seen serious cases of shock, one case of complete inversion, one of ruptured uterus, and many of partial delivery with rupture of the placenta, all follow Credé's manœuvre and render it necessary for them to be sent to hospital. Manual removal of the placenta is one of the most fatal of surgical procedures, and one in every four cases in which it is used shows signs of uterine infection—according to the B.M.A. standard. Of eighty-four cases of manual removal recorded in Leeds between 1924 and 1930 thirty-eight were morbid and thirteen ended in death. The dangers of the

* Read to the Yorkshire Branch of the British Medical Association at its Annual Meeting in Scarborough, October, 1936.

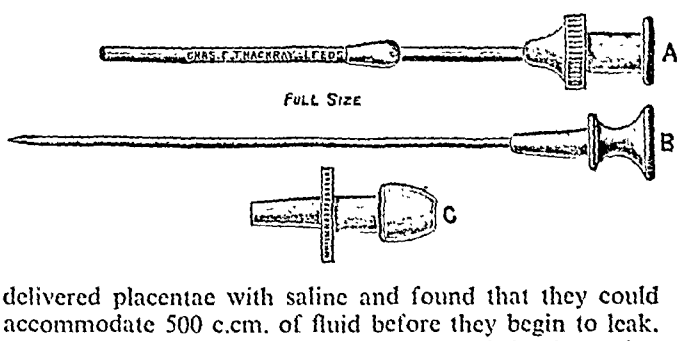
operation are many, and include sepsis, shock, haemorrhage, and rupture of the uterus.

It is the fear of these complications that has encouraged the staffs of hospitals to avoid manual removal if possible, and it is to this delay that the high mortality rate from this procedure is attributable. Of thirteen deaths recorded in Leeds eleven occurred at or within a few hours of the operation and only two subsequently from sepsis. These figures suggest that the operation was delayed until it became an urgent necessity and the patients were *in extremis*. The frequent manual removals carried out by general practitioners without death supervening may be explained by the suggestion that they are done mainly soon after the delivery of the child (possibly in cases which hardly merit such intervention) and that they too are successful in avoiding the introduction of sepsis. In spite of this, however, two or three patients are admitted to hospital each year after manual removal has been performed, and death follows from one of the complications already mentioned.

Treatment by Injection

It is this difficulty of not knowing when the placenta should be removed manually that has made the introduction of the method of injecting the umbilical vein so welcome. This method was used in 1826 by Mojon, who employed cold acidulated water and thought that his results were obtained on account of the low temperature. Jarcho in 1928 described two cases in which, after the injection of 250 c.cm. of saline into the umbilical vein, the placenta was expelled. He surmised that a retroplacental hydroma was formed which separated the placenta. It was this memorandum that suggested our starting work on the injection method, the technique of which may be outlined as follows.

The umbilical cord is cleansed with spirit, the trocar and cannula is inserted into the umbilical vein about eight inches from the vulva, and held in place with a cord ligature; 450 c.cm. of sterile saline at blood heat are then injected as rapidly as possible by means of a Higginson's syringe. The uterus rises in the abdomen, contractions occur, and the placenta is separated; in many cases it is expelled spontaneously. I injected a hundred freshly



delivered placentae with saline and found that they could accommodate 500 c.cm. of fluid before they begin to leak. This finding invalidates Jarcho's theory of the formation of a retroplacental hydroma. Doubtless the true explanation lies in the fact that on injection the placenta increases until it is nearly twice its original bulk, packs the uterus, stops the bleeding, and in most cases elicits contractions forcible enough to push the placenta into the vagina and to strip off the membranes from the wall of the uterus.

After the completion of the injection tests are made for the freedom of the placenta. If these tests show that the placenta is in the lower uterine segment or in the vaginal vault the fundus is massaged and the placenta is expressed. If, on the other hand, the tests show that the placenta is still in the upper part of the uterine cavity the patient must not be disturbed. The uterus has been packed by the distended placenta and bleeding ceases; further solution may be injected if bleeding recurs, and eventually, as the patient's condition improves, the uterus will regain its tone and the placenta can be expressed.

Advantages of the Method

The injection method has the advantage of simplicity in that it requires little surgical technique. Moreover, the umbilical vein is the largest vessel in the cord and the needle can be easily introduced. Water which has been recently boiled may be employed, and after the injection has been completed the cannula may be plugged by reinserting the trocar. It is advisable to insert the cannula into the vein as far away from the vulva as possible in order to preserve a long length of cord lest further injections be found necessary.

Surprise may be felt that such a convenient way of releasing the placenta fell into disuse. Its disrepute resulted from the use of non-sterile acidulated water, causing some patients to become septic; from the statement made by a well-known obstetric surgeon in Germany (Koerting, 1925), where the method was commonly employed, that it was of no value in cases of haemorrhage; and from the fact that unless the fluid is injected quickly no rapid change in the bulk of the uterine content is obtained and the resultant uterine contractions are weak. Consequently the use of glycerin as the injection fluid is not likely to yield good results, because such a viscid fluid cannot be injected quickly.

After the introduction of the injection treatment of retained placenta the need for manual removal immediately fell from twenty-five to one or two a year, and that method was used in cases where the cord was macerated or absent. In the Leeds records up to the end of the year 1935 the umbilical cord had been injected on 186 occasions, mainly for retained placenta, with or without post-partum haemorrhage; of these only two cases ended fatally and eight were reported morbid. One of the deaths occurred after admission in a moribund condition, and the other was that of a patient with advanced heart disease. The septic cases all followed instrumental delivery. In comparing these figures with those of manual removal we find that the death rate is 1.6 per cent. against 15.4 per cent., and the morbidity rate 8 per cent. against 45.2 per cent.

Additional uses to which the injection of the umbilical vein can be put include prophylaxis against post-partum haemorrhage (it is our custom to inject the vein if the patient has lost 600 c.cm. of blood without delivery of the placenta) as a precaution in cases of placenta praevia immediately after the delivery of the child, and as a means of clearing the field before suturing episiotomy wounds or tears accompanying a difficult instrumental delivery.

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R. Drenkhahn (*Med. Welt*, March 20, 1937, p. 394), on purely theoretical grounds, arrives at the conclusion that atropine in small doses causes a relaxation of the sphincter of the portio vaginalis of the uterus, while it has no effect, or possibly a slight stimulating effect, on the muscles of the body of the uterus. It should be useful in over-activity and tetanus of the uterus, but it is relatively useless in normal labour, in which the hypophyseal extracts are far more effective.

In a child, of course, this may lead to strabismus, transient and easily remediable at first, but if it be neglected even for a few weeks the child adapts himself to monocular vision and intractable amblyopia is liable to result.

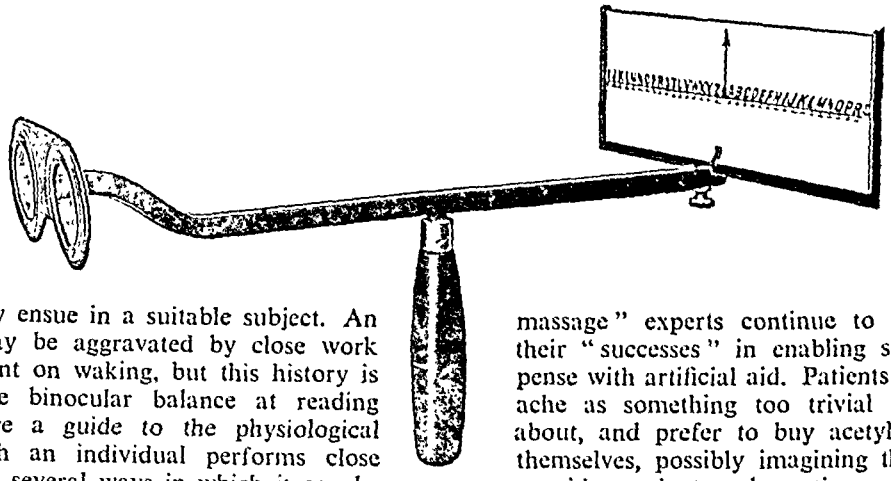
Latent Strabismus

The established habit of binocular vision in adults prevents this excess of convergence from becoming apparent as a frank squint, but the effort of maintaining a satisfactory balance imposes a strain reflected in several ways. Common among them is the inability of students, otherwise capable, to concentrate upon uninteresting textbooks, a tendency of the aged to fall asleep over their newspapers, while those who persevere in close work in spite of their difficulty are very liable to experience headache.

If, in the course of an operation for squint under efficient local anaesthesia, traction by a squint hook is exerted upon an internal rectus muscle, one is struck by the fact that the discomfort experienced by the patient is described as headache.

The Use of the Convergiometer

The headache due to latent squint at close range is commonly situated at the root of the nose or across the brow, and attacks of characteristic migraine or of migrainoid type may ensue in a suitable subject. An ocular headache may be aggravated by close work and is seldom present on waking, but this history is not invariable. The binocular balance at reading distance is therefore a guide to the physiological comfort with which an individual performs close work, and there are several ways in which it can be tested. A practicable one is by the use of the convergiometer. Its principles of construction were devised by the late Mr. Maddox many years ago, and they reflect his ingenuity in their simplicity. This very simplicity and the consequently inexpensive nature of the instrument may have prejudiced wider acceptance, for the wholesale manufacturers state that the demand has always been moderate. I am indebted to them (The Ellis Optical Company of Croydon) for the loan of the block.



A card bearing an arrow with a line of letters is seen through the eyepiece as two, one image being displaced upwards by a prism before the left eye and a second identical image being displaced downwards by a prism before the right eye. For the purpose of this test the patient wears reading glasses if he has them. A square of small newsprint pasted across the shaft of the arrow assists by concentrating the patient's accommodation on the card. If the lower arrow—that is, the one belonging to the right eye—points to the *left* of the upper arrow to some letter in the latter part of the alphabet all is reasonably well, for the internal recti have powers of convergence independently of those inseparable from accommodation and can make up for any lack in this respect. If, however, the lower arrow wavers even a little towards A on the right of the upper arrow—and certainly if it reaches this letter or beyond—the eye muscles are under a constant demand to exert a divergence (for which they have little capacity) up to and sometimes beyond the limit of comfort and almost of possibility, leading to headaches as the expression of such effort.

Correction by Eye-glasses

Great and perhaps undue stress has been laid upon small astigmatic errors as the cause of headache. The relief of headache by correction of such errors is often due to the restoration of normal muscle balance by adequate glasses. If a patient has bought for himself a pair of spectacles, estimated, fitted, and casually centred *without correction of any muscle imbalance present, it is* possible, should headaches persist, that he and his doctor will pursue their research for the cause elsewhere, and may part ultimately with expressions of mutual dissatisfaction. There is still some prejudice against the use of spectacles, and it has been suggested that numbers of people are wearing glasses unnecessarily as a result of commercial advertising campaigns. As long as all those not certifiably insane are assumed to be able, by exercise of their reason, to discriminate in such matters without expert guidance this possibility must exist, and the "eye massage" experts continue to reap the reward of their "successes" in enabling such patients to dispense with artificial aid. Patients often regard a headache as something too trivial to consult a doctor about, and prefer to buy acetylsalicylic acid tablets themselves, possibly imagining that their doctor can provide no better alternative.

Conclusion

The appreciation of pain and pleasure is very much a matter of temperament. Headaches are seldom incapacitating to those who may be described as "human vegetables," and when a phlegmatic, healthy individual complains diffidently of constant or frequent pains in the head investigation should be very thoroughly carried out. It must be a part of the treatment of the temperamental and neurotic patient to reduce to its true proportion each new symptom, whether of headache or any other kind; but to be effective this devaluation must follow such investigation as may be possible to exclude any real cause for such symptoms.

The use of test type and ophthalmoscope, and a rapid investigation of the lateral eye muscle balance at reading distance, will not reveal or exclude every ocular cause of headache, but they represent a simple, rapid, and sound method of ensuring as far as may be possible that appropriate ophthalmic attention is quickly given to those more obviously needing it, while others are referred for investigation to those quarters from which they are more likely to benefit.

LUMINAL AND PROMINAL IN EPILEPSY

A COMPARATIVE STUDY

BY

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The results recorded in this paper represent an attempt to compare the efficiency of luminal* with that of the more recently introduced barbiturate prominal* in the treatment of epilepsy.

In view of the satisfactory experience with the use of the latter drug reported by Heyde (1932) and other Continental workers, prominal was substituted for luminal in the routine treatment of epilepsy in this colony for mental defectives. The results in the aggregate were so striking as to warrant closer scrutiny and analysis. The comparison is therefore made in retrospect from a survey of routine clinical records, and not according to a predetermined method. The major and minor fits in all epileptic patients had been recorded on four-hourly charts.

Method of Substitution

The change from luminal to prominal, which was started throughout the colony on the same date, was made gradually by the method recommended by Blum (1932). Thus for the first four days one-third of the total luminal dosage was substituted by one and a half times that amount of prominal, for the second four days two-thirds were similarly substituted, and on the ninth day the whole luminal dose was replaced by a dose of prominal 50 per cent. greater. During and immediately after the change to prominal the majority of patients showed some increase in the number and severity of fits, but in no case did this assume alarming proportions. Subsequently dosage was adjusted to suit individual cases.

Choice of Cases

For the purpose of comparison only those cases known to have been under treatment with a suitably adjusted dose of luminal for some considerable time have been chosen. These cases had thus been observed for varying numbers of weeks immediately before the change to prominal. It should be pointed out that in every case the dose of luminal had been adjusted to a level low enough to avoid hypnotic effects. No case under any other form of treatment has been included.

Although no reference to the subject has been found in the literature, there appears to be some clinical evidence in support of the view that the incidence of epileptic fits and the mood of the patients bear some relation to atmospheric conditions. In order to minimize any error that might have arisen from seasonal variation those cases still available were observed for a similar period of weeks one year later, by which time the effect of prominal had long since become established.

From the records of eighty-two epileptic patients the number available as satisfying the above criteria is thirty-nine. The results in these cases are given in the following table.

Effect on Incidence of Fits

While there is considerable individual variation in results the mean weekly fit rate is reduced as follows: under luminal, 2.621; under prominal, 0.923. Hence the average weekly fit rate per patient on prominal treatment is 1.698 lower than, or roughly one-third of, the rate on luminal. The question now arises, Could such a difference be due to chance? The necessary statistical test was applied, and it was found that the odds are nearly 300 to 1 against such a result being a mere chance event. The reduction in the total number of fits since the

* The luminal and the prominal used in this study were obtained from Bayer Products Ltd.

TABLE I.—*Details of Fits Under Luminal and Prominal Treatment Compared (Observation Periods of Equal Duration)*

Case Number and Degree of M.D.	Age and Sex	No. of Weeks' Treatment	Luminal Fits				Prominal Fits				Effect on Behaviour of Change to Prominal
			Major	Minor	Total	Average Weekly Rate	Major	Minor	Total	Average Weekly Rate	
1 Id.	23 M.	40	70	7	77	1.93	1	1	2	0.06	—
2 Imb.	36 M.	31	5	5	10	0.32	0	0	0		
3 F.M.	27 M.	40	2	6	8	0.20	0	1	1	0.03	±
4 Imb.	27 F.	30	33	80	113	3.77	9	12	21	0.70	—
5 F.M.	29 F.	31	33	276	309	9.96	15	0	15	0.48	+
6 Imb.	19 M.	35	162	495	657	18.77	88	168	256	7.31	—
7 Imb.	29 M.	41	12	1	13	0.31	6	0	6	0.15	—
8 Imb.	34 F.	31	35	23	58	1.87	22	2	24	0.77	—
9 Imb.	36 F.	32	11	14	25	0.78	15	3	18	0.56	—
10 F.M.	31 M.	36	43	18	61	1.69	19	22	41	1.14	
11 Id.	16 F.	29	9	3	12	0.41	4	1	5	0.17	—
12 F.M.	33 M.	30	30	2	32	1.07	28	0	28	0.93	—
13 Imb.	30 M.	38	35	4	39	1.03	31	2	33	0.87	—
14 Id.	34 M.	13	8	0	8	0.62	0	0	0		
15 Imb.	57 M.	17	3	6	9	0.53	0	1	1	0.06	±
16 Id.	18 F.	11	3	1	4	0.36	0	0	0		
17 Imb.	36 F.	12	18	1	19	1.58	2	0	2	0.17	—
18 Imb.	19 M.	13	20	31	51	3.93	22	0	22	1.69	+
19 Imb.	25 M.	10	30	2	32	3.20	22	2	24	2.40	—
20 Imb.	39 M.	9	51	0	51	5.64	11	0	11	1.22	
21 Id.	34 F.	23	24	18	42	1.82	6	1	7	0.30	O
22 F.M.	27 M.	13	10	14	24	1.85	0	4	4	0.31	+
23 Imb.	26 F.	10	8	1	9	0.90	0	0	0		
24 Imb.	36 F.	12	64	1	65	5.42	9	0	9	0.75	
25 Imb.	27 M.	14	33	2	35	2.50	1	0	1	0.07	
26 Imb.	23 M.	9	2	14	16	1.78	2	2	4	0.44	O
27 Imb.	29 M.	11	28	3	31	2.82	12	0	12	1.09	—
28 Id.	16 M.	13	61	2	63	4.84	38	3	41	3.15	+
29 Id.	8 M.	21	28	23	51	2.43	2	6	8	0.39	
30 Imb.	12 F.	11	47	6	53	4.82	24	2	26	2.36	O
31 Id.	40 F.	10	25	0	25	2.50	4	4	8	0.80	O
32 Imb.	34 F.	10	17	2	19	1.90	2	0	2	0.20	
33 Id.	14 F.	25	5	4	9	0.36	1	4	5	0.20	
34 Id.	17 M.	12	29	4	33	2.75	20	1	21	1.74	+
35 Imb.	38 F.	10	4	3	7	0.70	0	0	0		O
36 Imb.	36 F.	10	7	0	7	0.70	3	0	3	0.30	O
37 Imb.	15 M.	16	61	6	67	4.20	17	5	22	1.37	O
38 Imb.	19 F.	18	8	16	24	1.33	20	13	33	1.83	
39 Imb.	46 F.	11	6	1	7	0.64	20	2	22	2.00	—

M.D.=Mental deficiency; Id.=Idiot; Imb.=Imbecile; F.M.=Feeble minded.

In the last column: +=Improvement; —=Retrogression; O=Condition stationary; a blank signifies no abnormal behaviour attributable to epilepsy.

change over to prominal is such that to see a patient in a fit in the colony grounds is now a rare occurrence, although a degree of freedom which is perhaps unusual is allowed to the majority of patients.

The individual variations in results are shown in Table II, which is based on the figures set out in Table I. This shows in ascending order of magnitude the number of major and minor fits which might be expected to occur in each patient under prominal treatment if, during an equal period of luminal treatment, he had experienced a hundred fits.

TABLE II.—*Calculated Number of "Prominal Fits," in each Case, per Hundred "Luminal Fits" (Average = 41)*

Case No.	No. of Fits	Case No.	No. of Fits
2	Nil	37	32.8
14	"	27	38.7
16	"	6	38.9
23	"	8	41.4
35	"	11	41.7
1	2.6	36	42.9
25	2.8	18	43.1
5	4.8	7	46.1
17	10.5	30	49.0
32	10.5	33	55.5
15	11.1	34	63.6
3	12.5	28	65.1
24	13.8	10	67.2
29	15.7	9	72.0
21	16.7	19	75.0
22	16.7	13	84.6
4	18.6	12	87.5
20	21.6	38	137.5
26	25.0	39	314.3
31	32.0		

Thus there is a considerable improvement in the majority of cases, while two cases show deterioration and a few show improvement of little or no significance. No common factor has been noted which would lead one to expect a particular type of response.

Effect on Behaviour

It will be seen from the last column of Table I that of twenty-seven cases showing examples of abnormal behaviour considered to be epileptic equivalents, nineteen were improved by prominal, one became worse, and seven showed no change. Again there is no obvious factor underlying a particular response.

Results in Typical Cases

As the effects of prominal on epileptics of relatively normal mentality will be of more general interest feeble-minded cases (rather than idiots or imbeciles) will be described in greater detail. Those nearest the middle and the extremes of the scale as shown in Table II are taken as typical of the varying forms of response.

Case 5.—This patient was a feeble-minded woman aged 29, in good physical condition. On luminal, 2 grains twice daily, her fits averaged nearly ten per week (approximately one out of every nine being major fits). She lacked initiative and was frequently troublesome; her epilepsy seriously interfered with her work and recreation. On prominal, 3 grains twice daily, she had an average of one fit a fortnight during the period under review. Since then the fit incidence has decreased and she has had no fit for eighteen months. She is now much brighter mentally, and is able to do useful work and to take part in Guiding and other colony activities.

Case 22.—This case was that of a feeble-minded man of 27, simple in manner, in good health apart from some chronic bronchitis. On 1 grain of luminal daily he was often excitable and quarrelsome, and needed much supervision when following his simple occupation. His fits, of which approximately two-fifths were major, averaged nearly two a week. During the corresponding period of prominal, 2 grains twice daily, he had no major fits, and the minor fits averaged one in about three weeks. His conduct was improved and his usefulness increased. Subsequent increase of dosage to 3 grains twice daily has not resulted in any further improvement.

Case 12.—This patient was a feeble-minded man of 33, in good health. He was simple and confused in manner; with a dose of luminal exceeding 1/2 grain daily his confusion increased and his capacity for employment was negligible. On this small dose of luminal his fits, mostly major, averaged about one a week and he became troublesome and resistive at times. He tolerates a prominal dosage of 3 grains three times a day. This produces little effect upon the incidence of fits, but his conduct is greatly improved and he is able and willing to work in the kitchen garden.

Dosage and Tolerance

Many adults in good physical health have received prominal, 3 grains three times a day, for over two years without ill effect. The dose for children has been estimated by the usual formula $\frac{\text{age}}{\text{age} + 12}$, which appears to be entirely satisfactory.

In a few adults of poor physique, particularly when they are constipated, some degree of drowsiness has been observed when the maximum dose of 9 grains daily has been given. In such cases appropriate measures are taken to deal with the constipation, and prominal is withheld for three days, after which the full dose is again established. In view of the well-known intolerance to barbiturates in cases of renal disease, the urine is examined in all cases showing drowsiness, in order to exclude the possibility of incipient uraemia.

While prominal appears to be the drug of choice for the majority of cases, luminal may be used in preference in those cases of low mental grade in which some hypnotic effect is not undesirable and in which the effect of prominal is disappointing.

Summary

A comparison of the efficacy of prominal and luminal in the treatment of epilepsy is made by examining the routine records of all epileptic patients in a colony for mental defectives; each case has been observed during similar periods on the respective drugs.

The principles by which cases were selected are described, and thirty-nine statistically admissible cases are recorded in tabular form.

The results are considered collectively and individually with reference to both incidence of fits and behaviour. The total number of fits under prominal treatment is shown to be approximately one-third of the number during a similar period under luminal therapy, and a beneficial effect on non-convulsive manifestations is found in a large proportion of cases.

Tolerance is discussed, and a dose of 3 grains of prominal three times a day is shown to be satisfactory over long periods in adults.

I am indebted to Dr. Noel H. M. Burke, medical superintendent, Cell Barnes Colony, for permission to publish the results of this investigation. My thanks are also due to Professor Major Greenwood and his staff for kindly looking over the results.

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PROMINAL IN THE TREATMENT OF EPILEPSY

BY

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The results of the treatment of epilepsy by prominal in mental hospitals recorded in the *British Medical Journal* by Dr. L. G. Millar Page (March 14, 1936, p. 531) and Dr. Leonard Barber (March 28, 1936, p. 666) were so encouraging that it was decided to try the effect of prominal on the mentally defective patients in this institution who had had the greatest number of fits during 1935. The fourteen patients chosen were having various forms of treatment by drugs and diet, etc. Some had had luminal without any marked improvement, but were not receiving it at the time the use of prominal was begun. On April 1, 1936, every other kind of treatment was stopped, and in only one case has anything except prominal been given since then. One of the fourteen cases was discharged to another institution after six months, so that the figures below relate to thirteen only. All the thirteen patients had been having epileptic fits regularly for from three to twenty years, and the number of fits recorded in the preceding twelve months was rather more than in previous years.

The reduction in the number of fits in the first three weeks of treatment with prominal (twenty-eight against 124 in the corresponding period in 1935) was so remarkable that it was decided to keep exact records of these cases for the next twelve months. This has been most carefully done by Mr. D. D. Steadman, surgery attendant.

Case No.	Number of Fits: April 1 to March 31		Decrease in Number of Fits
	(Bromide, etc.) 1935–6	(Prominal) 1936–7	
1	581	107	474
2	327	137	190
3	191	55	136
4	150	112	38
5	122	2	120
6	93	93	—
7	69	67	2
8	72	11	61
9	62	7	55
10	109	45	64
11	51	13	38
12	263	42	221
13	38	5	33
Total	2,128	696	1,432

It will be seen that there was a reduction of just over two-thirds (67.3 per cent.) in the number of fits in twelve months.

To begin with, each patient was given 9 grains of prominal a day—that is, one tablet three times a day—but in nearly every instance this was found to be too much and had to be reduced—in some cases on April 2 and in the rest on April 4. The main symptom of overdosage was drowsiness, and the dose was reduced to 6 grains daily. In Cases 2, 4, 6, 7, and 10 the daily dose was further reduced to 3 grains, but after a few days was restored to 6 grains.

Case No. 1.—For several years this patient was quite useless and under constant observation owing to the frequency and severity of fits. Is now doing housework, and fits are less severe as well as less frequent.

Case No. 9.—Fits reduced from sixty-two to seven. Much brighter mentally.

Case No. 12.—Had been bedridden for six months owing to severity of fits. Is now up and back at school.

Case No. 8.—Has been at work regularly lately (shoemaker).

Cases 2, 3, and 4.—Not much improved mentally.

Cases 5 and 13.—Low-grade imbeciles, but much more lively and cheerful.

Case No. 10.—Physically improved. This patient has had an average of 118 fits a year for the last twenty years. (In 1900 he had craniectomy operation for epilepsy, without any improvement.)

Case No. 11.—Little change. This patient is 67 years old.

Case No. 6.—Has not benefited; 9 grains daily reduces the number of fits, but produces drowsiness to such an extent that he is unable to walk; 6 grains daily has no more effect on the number of fits or their severity than bromides.

Case No. 7.—This is the only patient who has had any other treatment besides prominal. Up to the week ending November 14 he had had nearly 50 per cent. less fits than the previous year. During the week ending November 21 he had forty fits in three days, and was given bromide and chloral hydrate by mouth and by rectum in addition to prominal. Since then he has had only nine fits, against twenty-nine in the corresponding period of 1935. He takes 3 grains of prominal daily.

During the time these patients have been undergoing this treatment there has been no alimentary disturbance. Nothing abnormal has been found in the urine, nor has the blood pressure been found to vary to any great extent. So far there has been no indication that the drug is losing its efficacy. The treatment is being continued, and other cases of epilepsy are receiving prominal. All those treated were suffering from *grand mal* only. Prominal has not been found to have any effect on the few cases of *petit mal* on which it has been tried.

J. J. C. P. A. Roovers (*Nederl. Tijdschr. Geneesk.*, May 22, 1937, p. 2346) records the case of a girl, aged 5 years, who suffered from generalized calcinosis. The Wassermann, Müller, and Kahn reactions in the blood were negative. She was given 3 grammes of sodium citrate a day by mouth and calcium intravenously. In three weeks after the treatment was begun the calcium content of the blood rose from 11.5 mg. to 20 mg. per 100 c.cm. of blood, and the phosphorus content from 4.7 mg. to 10.8 mg. per 100 c.cm. Slow but steady improvement followed. The calcium nodules subsided, the contractures disappeared, as did also the limitation of movements in the joints, and practically complete recovery took place.

Clinical Memoranda

Lymphosarcoma with Perforation of Gastric and Intestinal New Growth

It must be exceptional for a case of lymphosarcoma to present perforation of both gastric and intestinal new growth. I do not know of a recorded case. Ewing (1928), in a detailed account of lymphosarcoma, mentioned the possibility of intestinal perforation, and cases of the latter have been reported, though infrequently—for example, by Whitaker and Fisher (1934). Gastric perforation in lymphosarcoma would seem to be even rarer, for no record has been found in the literature consulted.* The following case, presenting both complications, is therefore of interest.

CASE RECORD

A. B., a male 34 years old, was admitted to St. Stephen's Hospital (L.C.C.) on November 13, 1936, presenting bilateral glandular enlargements in the following regions: submental, pre-auricular, lateral cervical, supraclavicular, inguinal, femoral, and axillary. The patient had first noticed swellings in the groins two years previously, and he said that the other swellings had been present for two months. Examination showed that, in addition, the right posterior part of the tongue was thickened, ulcerated, and fixed to the adjacent faucial tissue. There was gross oedema of the left leg, the lumbar region, and the penis, and dilated veins coursed over the right upper chest wall anteriorly. The liver was moderately enlarged, but the spleen was not palpable. The face was pale, the expression strained, and the cervical swellings gave a square outline to the face. The pulse rate was 116 per minute and the temperature normal. Examination was negative in other respects, as were also ophthalmoscopic and urinary examinations and the Wassermann reaction.

Two days after admission he complained of the onset of acute lower abdominal pain and nausea. The temperature was 99° F., the pulse rate 120 per minute. There was neither abdominal tenderness nor rigidity. The next day (November 16) he was markedly breathless; the abdomen was tense and ascites was present, but the abdominal pain had subsided. He died on November 18, five days after admission.

At necropsy the identity of the glandular masses enumerated above was confirmed. The right posterior part of the tongue was infiltrated with hard new growth and attached to the fauces. There was a large mass of intensely white glands in the mid-mediastinal region, matted together, and less extensive enlargement of the glands about the aorta; here the glands were black. The abdomen contained several pints of yellow turbid fluid. The liver showed perihepatitis and fatty degeneration. The spleen was moderately enlarged and unduly soft. There was malignant ulceration of the lower part of the posterior wall of the stomach, which had perforated. Further, there was extensive lymphosarcomatous involvement of the ileum, with perforation of an area of malignant ulceration which was close to a Meckel's diverticulum.

PATHOLOGICAL REPORT

The following report was made by Dr. G. W. Goodhart:

Stomach.—The tumour consists of rather large mononuclear cells with a fine fibrillar stroma. It has completely replaced the mucous membrane over a large area, and is here largely necrotic. In places there is a dense fibrous tissue reaction with atheroma of the arteries.

Intestine.—The main mass of the growth is in the submucosa, with extensive ulceration of the mucous membrane; the whole area is infiltrated, and in the neighbourhood of the perforation the muscular wall is entirely replaced by growth, with a thick layer of fibrinous exudate on the peritoneal surface. The lymphosarcoma cells are of the same type as those seen in the stomach.

Mediastinal Glands.—The normal structure of the gland is destroyed, and is replaced by large mononuclear cells in a meshwork of fine fibrin.

Spleen.—The histological picture is one of general infiltration by lymphosarcoma cells.

Liver.—No growth seen; severe fatty degeneration.

It is a pleasure to thank Dr. G. W. Goodhart, pathologist of the Group Laboratory, St. Mary Abbots L.C.C. Hospital, for his report and his interest; also Dr. D. S. Sandiland, medical superintendent of St. Stephen's L.C.C. Hospital, and Sir Frederick Menzies, medical officer of health of the London County Council, for permission to publish this case.

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* Since this article was written a case of gastric perforation in lymphosarcoma has been described by S. Keys and W. W. Walther (*Lancet*, 1937, 1, 1169.).

Carcinoma of Rectum in a Girl of Twenty

The case described by Mr. R. Rutherford on page 860 of the issue of the *Journal* for April 24, 1937, invites comparison.

In 1931 an unmarried girl of 20 began to feel pain on defaecation and passed blood and mucus in the stools. This continued until April, 1933, when she sought advice and was sent to hospital by her doctor.

The patient was pale, thin, and weak. Rectal examination revealed an ulcerated friable growth involving three-quarters of the circumference of the ampulla and about four inches in length, extending downwards to within 1½ inches of the anus. Rectal mobility could not be elicited. Microscopically the growth was seen to be an adenocarcinoma, the tumour cells being of columnar type with little tendency to anaplasia. Long radium needles (0.8 mm. Pt) were inserted per rectum in a cylindrical distribution in the plane of the tumour bed, and three months later a small area of residual growth was re-irradiated, using a few underscreened radon seeds (0.3 mm. Pt).

After an interval of three months digital and sigmoidoscopic examination under anaesthesia was carried out. An elastic transverse ridge causing a minor degree of stenosis was palpable through smooth intact mucosa. There was no ulceration or sign of residual growth. Since then, for four years, the patient has been examined at regular intervals and the local condition remains unchanged. She is well and has grown fat, and the bowels open without difficulty per rectum. Colostomy has never been performed.

The interesting points are: (1) The age of the patient. (2) The success of radiation treatment in spite of the unpromising site, extent, and histological character of the growth. (3) The absence of either colostomy or rectal disability in spite of originally extensive malignant disease.

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Parkinsonism following Peripheral Trauma

Apart from its appearance following encephalitis, Parkinsonism may appear as a sequel to manganese poisoning, senility, syphilis, arteriosclerosis, and various forms of trauma. Numerous records and review collections of cases of Parkinsonism following cranial trauma have recently been published. Among the best are those of Patrick and Levy (1922), Grimberg (1934), Kulkov (1932), and Bruetsch and DeArmond (1935).

Records of Parkinsonism following peripheral trauma are more scanty. Faure-Beaulieu (1932) gives a minute account of such a case in which the injury was to the arm. The details of clinical observation and commentary in this case are very convincing. Naville and de Morsier (1932) review with lengthy commentary forty-two published cases of Parkinsonism following peripheral trauma. They point out that such cases present the following characteristics: (1) In the interval between the injury and the full development of the Parkinsonian syndrome the injured limb remains weak, painful, and subject to sensory disturbances. (2) Tremors and hypertonus almost always appear in the injured limb. (3) The syndrome becomes manifest on the injured side. (4) Mental changes are absent.

In their commentary Naville and de Morsier (1932) quote Charcot as favouring the possibility of Parkinsonism from peripheral trauma, and they suggest that the peripheral injury brings about the cerebral illness by means of a subacute toxic ascending neuritis.

CASE HISTORY

In September, 1934, "B." had on his records no note of any illness of relevance or gravity. On that date his right hand was accidentally crushed, lacerated, and bruised. It became inflamed and lengthy local treatment was required. Although the wounds have long since healed the pain in the hand has persisted.

I first saw "B." in April, 1935, at the request of his union. I advised the union about the obvious results of lack of gripping power, etc., in the damaged hand, and made a private note, without any idea of what was to come, that the man appeared more timid and nervous than might have been expected. I also noted that he talked in a rapid monotone, but was misled when he assured me that this was due to loose teeth.

I next saw him in March, 1937. He told me that the pain in the right arm was still present. He said that the arm had begun to tremble about a year after the accident. He also stated that the right leg had also become tremulous about eighteen months after the accident. He now presented the typical Parkinsonian syndrome, with unilateral tremors, blank expression, forward gait and posture, and dry flat monotone.

As a result of my representations a satisfactory settlement in regard to compensation has been secured.

Sunderland. G. F. WALKER, M.D., M.R.C.P.

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Reviews

DIAGNOSIS AND TREATMENT OF DIGESTIVE DISORDERS

The Diagnosis and Treatment of Diseases of the Stomach and Intestines. By William Fitch Cheney, B.L., M.D. (Pp. 378. 24s. net.) London: H. Milford, Oxford University Press. 1937.

The Diagnosis and Treatment of Diseases of the Liver and Biliary Tract. By John Phillips, M.B. Revised by Russell L. Haden, M.D. (Pp. 539; 58 figures. 32s. 6d. net.) London: H. Milford, Oxford University Press 1937.

In a volume of less than four hundred openly printed pages Professor W. F. Cheney has brought together the essentials of diseases of the stomach and intestines. After a short survey of the methods of examination, with a commendatory note on gastroscopy, the author proceeds to deal with the disease syndromes severally. It is noteworthy that he regards the state of chronic gastritis as established beyond question by modern *x*-ray and gastroscopic technique, a position which is not yet acknowledged generally by workers in the United States, though accepted here and in Europe for many years. After describing the general course of cases of gastric ulcer and its treatment, the author gives a separate and useful chapter on its complications, haemorrhage, perforation, pyloric obstruction, and hour-glass stomach. The chapter on cancer of the stomach is full and sound. In discussing the question of cancer originating on an ulcer base, Professor Cheney, while pointing out that the clinical history is often suggestive, finds that often with complete *x*-ray and chemical examination a certain diagnosis cannot be made. In these circumstances, he says, the only rational procedure in the dilemma is, if doubt exists, to treat the patient for ulcer and then judge by clinical progress and by repetition of the *x*-ray examination. But ulcers even already malignant may improve temporarily under treatment by diet and medication, and valuable time may be lost before proceeding to surgical measures. The author divides disturbances of the functions of the stomach into three groups: those due to organic disease of the stomach itself, those due to organic disease elsewhere in the body —for instance, in appendix and gall-bladder—and those due to faulty innervation without organic disease discoverable anywhere. It is noticeable that in the last generation this last group, the gastric neuroses, has dwindled into an insignificant section of most modern textbooks. The author is thoroughly up to date in this and in his recommendations for treatment. He reserves judgement about the efficacy of mucin treatment for gastric ulcer, and is unimpressed by the claims made for injections of histidine, which has been extensively advertised to the medical profession under the trade name of larostidin. Each diseased state is illustrated by type case-histories from the author's practice and the records of Stanford Medical School, and the book as a whole bears the imprint of his individual thought and opinion. The section on the diseases of the intestines follows similar lines. The methods of examination are discussed, then inflammation of the intestines and chronic ulcerative colitis under the headings amoebic, bacillary, tuberculous and non-specific. This last-named group appears to be less common than in this country. So, too, the modern author would combine the two chapters on ulcers of stomach and of duodenum into one discussion of peptic ulcer, since clinically they resemble each

other so closely that it is hard to distinguish one from the other by history and effects upon digestive functions. Professor Cheney makes the anatomical but arbitrary separation of the two by the pylorus, and this involves some repetition and redundancy. It affords an opportunity, however, of bringing in and describing diverticulum of the duodenum. A new form of inflammation of the small intestine was differentiated by Crohn in 1932, and is given a clearly written notice. This excellent volume may be recommended as sound and up to date.

Another volume of the same series is devoted to diseases of the liver and biliary tract. The author, Dr. John Phillips, after completing the manuscript, lost his life as a result of the disastrous fire in the Cleveland Clinic in 1929, and the book has been revised and passed through the press by Dr. Russell L. Haden. It contains a good account of the clinical aspects of the subject, preceded by short chapters on the anatomy and physiology of the liver and special methods of testing liver function. About 15 to 20 per cent. of cases of jaundice are non-obstructive, and the author follows modern teaching in regarding it as established that in catarrhal jaundice there is an acute inflammatory or degenerative hepatitis. He treats the various toxic forms of jaundice, from drugs and in Weil's disease, under the heading of jaundice, reserving an independent chapter for the cirrhoses. It is perhaps simpler pathologically to treat the whole series as a range of interactions of toxin and liver cells, but it may be more useful clinically to deal with the syndromes separately. Practitioners will obtain from the book all that it is necessary to know and each chapter is followed by a short bibliography. The illustrations are noteworthy, many in colour.

AN ACCOUNT OF BACTERIA

Fundamentals of Bacteriology. By Martin Frobisher, jun., B.S., D.Sc. (Pp. 474; 230 figures. 14s. net.) Philadelphia and London: W. B. Saunders Co. 1937.

Bacteriology has developed as an applied science. The relationship of bacteria to disease has in the past been the main preoccupation of bacteriologists, though the part played by these micro-organisms in agriculture and industry has also received attention. The result of this has been that few have had either the opportunity or the incentive to study bacteria for themselves as a purely academic pursuit. To-day, to some extent at any rate, there is a reaction against this one-sided approach to the subject, and the number of those who are interested in the science of bacteriology, quite apart from its important applications, is increasing. As evidence of this, textbooks are appearing in which bacteriology is treated in a broad and unspecialized manner, an example in point being the recently published *Fundamentals of Bacteriology*, by Dr. Martin Frobisher, jun., of the Johns Hopkins University. In this book of between 400 and 500 pages the author has attempted to give us a picture of bacteria as minute unicellular plants with many interesting and important activities—medical, industrial, agricultural—and so provide the student with that broad base on which the more specialized knowledge of one of the applied branches of bacteriology can, if necessary, be built. It is interesting to note that despite the author's avowed object there is a chapter devoted to pathogenic protozoa. Although it is usual to include protozoa in textbooks of bacteriology written for medical students, a practice which though regrettable is understandable, there can be no excuse for doing this in such a book as Dr. Frobisher has written, and it is to be hoped that in future editions he will leave this chapter out.

Generally speaking it can be said that the author has achieved his object. In the small compass of this book he has given us a readable, interesting, and accurate account of bacteria. It is divided into three sections. The first of these is devoted to general principles, the general properties of bacteria, the technique of their study, their morphology, physiology, and their identification. Section II is mainly systematic, opening with a chapter on classification, followed by accounts of the different genera. This section contains also interesting accounts of the bacterial flora of the soil and their rôle in soil fertility, and a chapter devoted to the industrial aspects of bacteriology. The third and longest section is concerned with the part played by bacteria in disease, and this is extended to include the rickettsia and the viruses. In the present state of our knowledge of the nature of these last two groups of disease agents it is perhaps permissible to include them in a book of this nature, and both these chapters are quite good, though it is rather difficult to follow the author's train of thought when he attempts to draw a parallel between the activities of the viruses of yellow fever and psittacosis.

The book closes with a chapter outlining the birth of the science of bacteriology. The usual practice is to introduce the subject by a historical survey, and that certainly seems the more logical procedure.

ANTIMONY IN MEDICINE

Ergebnisse und Fortschritte der Antimontherapie. By Professor Hans Schmidt and Dr. F. M. Peter. (Pp. 218; 8 figures. RM. 15.50; geb., RM. 17.) Leipzig: G. Thieme. 1937.

This book on the results and progress of antimony therapy contains a full review of an important subject. No other drug used in medicine has had such a chequered career as antimony. Introduced into medical practice by Paracelsus, it had, like its sponsor, a stormy and turbulent career, for its employment was bitterly assailed by the adherents to Galen, and the authorities of the University of Paris in 1560 forbade their graduates to use it, a veto which was maintained for 100 years. During the next two centuries antimony became the sheet anchor of the heroic school of therapy, but with the decline of this school the drug fell into disrepute, and by the opening of the present century its therapeutic use had almost ceased. It made, however, a remarkable recovery of a wholly unexpected nature when, in 1907, antimony tartrate was discovered to be a potent trypanocide. The importance of this was at first obscured by the development of the organic arsenicals, but later intensive research produced a series of organic antimonials, and to-day these rival, if they do not surpass, the organic arsenicals in respect of therapeutic importance. The most important uses of these organic antimonials are in the treatment of bilharzia, trypanosomiasis, and kala-azar.

Many hundreds of organic antimonials have been prepared; certain of these are of outstanding and well-established importance, such, for instance, as the trivalent compound fuadin or antimosan and the pentavalent compounds stibosan and neostibosan. The authors give a comprehensive survey of the literature relating to the use of antimony compounds in tropical diseases. It is interesting to note that the various compounds mentioned have highly selective and specific actions. The trivalent fuadin has proved superior to the pentavalent compounds in the treatment of bilharzia, but on the other hand neostibosan is more effective than fuadin in the treatment of kala-azar. Fuadin is an effective trypanocide as regards *T. brucei* and *T. congolense*, but is inactive against *T. equiperdum*.

The authors describe also three new arseno-antimonial compounds prepared in the Elberfeld laboratories of the I. G. Farbenindustrie which appear to be effective against a wide range of micro-organisms. One of these (Sdt.386B) has shown an activity in relation to bartonella infections which exceeds that of any known compound of arsenic or antimony.

A HANDBOOK OF OTO-RHINO-LARYNGOLOGY

Diseases of the Nose, Throat, and Ear. A Handbook for Students and Practitioners. By I. Simson Hall, M.B., Ch.B., F.R.C.P.Ed., F.R.C.S.Ed. (Pp. 423; 55 figures. 10s. 6d. net, post 6d.) Edinburgh: E. and S. Livingstone. 1937.

Dr. Simson Hall has written a book on diseases of the nose, throat, and ear of moderate size, intended for the use of the medical student and the general practitioner. For this limited purpose it is no doubt well suited, as some instruction will be found upon most points coming under these headings, and the author has brought his work up to date in essentials, including endoscopy. Owing to the size of the book the information given is in many important places superficial in character. Greater care in writing and the choice of illustrations would have provided space for additional detail, but so far as they go the descriptions are accurate. It is necessary, however, to comment on the statement that the ideal anaesthetic for oesophagoscopy is intratracheal insufflation of ether. When the inevitable explosion occurs this book may be quoted in defence of this practice, and the author would then find himself in a situation of no slight embarrassment.

Dr. Simson Hall has no doubt fully realized that he is competing with a number of other manuals designed on a similar scale, but he has evidently taken much trouble in preparing the book so as to present the subject in a practical way which will appeal to a large class of readers. It is not difficult to find omissions, but they are not of major importance.

SKIN TEMPERATURE IN HEALTH AND DISEASE

Hauttemperaturen. By Johannes Ipsen. (Pp. 375. 18 Cr.) Copenhagen: Levin and Munksgaard. Leipzig: G. Thieme. 1936.

It is only in quite recent years that the variations of skin temperature in health and disease have been seriously studied. In this work Dr. Johannes Ipsen of the State Hospital at Sonderborg in Denmark has been a pioneer in defining the various abnormalities of skin temperature met with in surgical cases. He has used for his measurements mercurial thermometers, and especially the thermo-electric apparatus of Hartmann and Braun. In the present book, which is embellished with many charts and diagrams, he now describes in full detail this rather unfamiliar field of knowledge. He passes briefly over the normal variations that are connected with the conservation of body heat and those that depend on the reactions to external heat and cold. Incidentally he makes very clear the wide differences in normal skin temperature in different parts of the body, and the great importance clinically of comparing the readings taken from corresponding parts on either side.

It is well known that the skin temperature at any point depends on the activity of the cutaneous circulation and that the flushed and heated skin in fever favours the loss of body heat, and that, on the other hand, when temperatures are subnormal the bloodless and pallid skin is favourable to the conservation of heat. But the parts played by the arterioles and capillaries are perhaps less realized. By the aid of an ingenious diagram of skin heat and colour Ipsen shows that increased warmth of the skin indicates dilatation of the arterioles, while the colour ranges from red to white according to the calibre of the capillaries. In injuries, operations (even abdominal), arteritis, aneurysm, phlebitis, etc., he attaches much importance to lowered temperature in the leg or foot, which may even indicate serious circulatory disturbance in advance of other signs. A few minutes after an embolism the foot temperature may fall as much as 9° C. Post-traumatic arterial spasm may depress the temperature 10° or 12°, the injured part (and this is important) losing its normal reaction to cold. Another interesting diagram shows the range of difference between superficial and deep temperatures in Graves's disease and in fever as compared with the normal.

Sufficient has been said to indicate the far-reaching value of Dr. Ipsen's work. The importance of skin temperature in diagnosis alone is too often overlooked. We can remember acute pains thought to be rheumatic and proved to be due to commencing phlebitis by a patch of raised temperature in the leg; and, again, cold areas on the upper arms or thorax, which were signs of more deep-seated circulatory disturbance. Although this book deals mainly with surgical conditions, it should be of wider interest at the present time, when clinicians are realizing the importance of local and general chill, both from the diagnostic and the therapeutic standpoints. Where these areas of cold are present it is often possible not only to restore the local circulation but to relieve more deep-seated disorders.

Notes on Books

The Condition of Britain (Gollancz, 7s. 6d.) is a survey of modern life in this country by those indefatigable writers, G. D. H. and M. I. COLE, who systematically cover the whole field, reinforcing the text with a lavish use of tables, statistics, and diagrams. The book deals with distribution of income and property, housing, unemployment, standard of living, education, taxation, and social services, in addition to many other subjects. Of special interest to medical readers is the long chapter devoted to health and nutrition. Here the authors conclude, not without some justification, that the existing situation is grossly unsatisfactory in certain respects. They refer in particular to maternal mortality and to the undernourishment which prevails among a third of the population. As sanguine as they are industrious, Mr. and Mrs. Cole have constructive ideas for the remedy of these and the many other evils that beset us. "If we want social betterment we must create, both here at home and as far as in us lies in the world as a whole, the psychological conditions which will make betterment possible." This is a valuable and informative book, and the reader, whatever his political opinions, cannot but be impressed by the ability and sincerity of the authors.

In *Pediatric Dietetics* (H. Kimpton, 32s.) Dr. N. THOMAS SAXL sets out to assemble and correlate available data on the subject of the dietetic treatment of the sick child in one volume. The result is a large accumulation of facts, often contributed by experts, which would be better appreciated if there had been more rigid pruning. Illustrations of sick children seem curiously out of place, and the brief descriptions of certain disease processes are quite inadequate. These drawbacks are to be regretted, for as a standard work of reference this volume contains much that is valuable, particularly the sections giving composition of food in regard to minerals and other essential constituents. Indeed, the appendix containing such tables and many recipes is the best part of the book.

Dr. H. B. SHAFER writes an account of *The American Medical Profession 1783–1850*, which appears as No. 417 of Studies in History, Economics, and Public Law from the Faculty of Political Science of the Columbia University (London, P. S. King and Son, 14s. 7d.). Dr. Shafer deals first with American medicine at the close of the eighteenth century, when such influence as it had came from the medical teaching at Edinburgh with a small trickle from the Hunterian school in London. He then tells of medical education in the United States, and deals with the special problems resulting from deficient preliminary teaching of the students, medical centres separated from each other by great distances, and the want of central control. He mentions incidentally that in some schools candidates paid the professor an examination fee which was kept if he passed but returned if he failed. There is an interesting chapter on medical ethics and fees, from which it appears that the dollar was practically equivalent to the guinea charged in these islands. The United States has always been recognized as the home of journalism, and Dr. Shafer states that between 1795 and 1850 no fewer than 117 medical periodicals were published. The book is valuable but is not exhaustive; there is still room for a companion volume on the private medical schools, because Dr. Shafer deals principally with what in England would be called the faculties of medicine and surgery. His accounts of cupping, of the practice of medicine, and of surgical operations stand in need of revision by a skilled hand, for the author is a doctor of philosophy, not of medicine.

Dr. LOUIS CHAPELON'S *Le Rôle de la Lumière dans l'Accommodation* (Paris, Vigot Frères, 25 fr.) is a teleogical exposition on the significance of light as a factor influencing the mechanics of vision. He holds that quite apart from its action in exciting visual sensation, light is responsible for the process of accommodation, adapted for all distances up to infinity. From a review of comparative anatomy, embryology, and physiological optics he argues that in the course of evolution the intrinsic muscle fibres of the eye have become sensitive to light and respond by secretion of aqueous, and so directly affect the shape of the lens. He finds the plan admirable as a balance between the intrinsic and extrinsic forces operating on the muscle system of the body, allowing the maximum adaptation of the individual to the outer world.

The annual report for 1935–6 of the Swiss Research Institute for Tuberculosis and Alpine Climatic Conditions describes the continued progress of several researches. At the physico-meteorological observatory the reactions of the human body to varied weather conditions are being investigated. Researches in the pathologico-anatomical and bacteriological section include a study of the chemical constitution of the tubercle bacillus.

Preparations and Appliances

AN IMPROVED HEADLIGHT

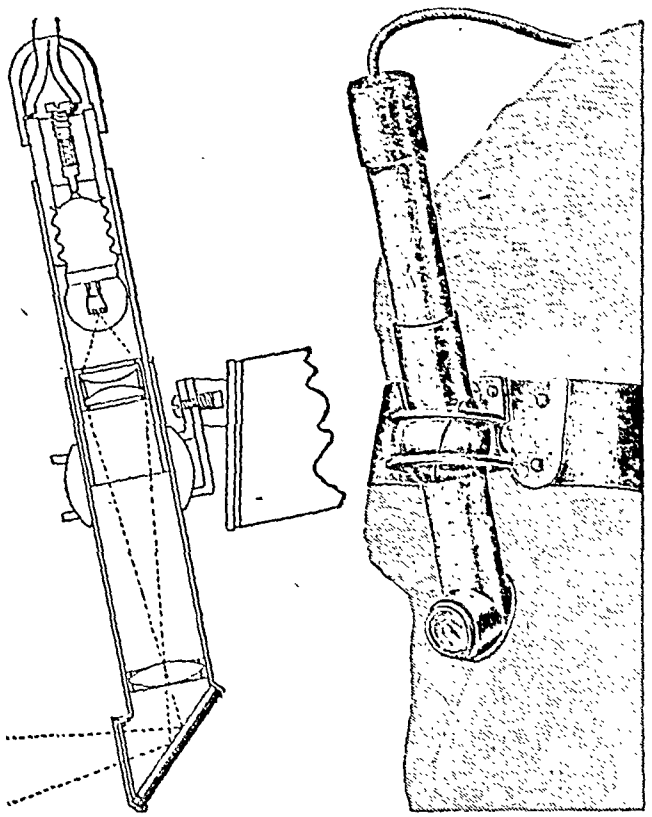
Mr. G. W. MOREY, M.B., D.L.O., writes from Shrewsbury:

There are many headlamps on the market, but none are really satisfactory. For the past four years I have been attempting to design a better lamp than those usually obtainable, and though the design I now publish is, I hope, a marked improvement on former headlamps, it is realized that it, too, still leaves a good deal to be desired. Primarily this lamp has been designed to overcome the disadvantage of a tube projection between the eyes, which encroaches on binocular vision.

For any headlamp to be really satisfactory the following conditions should be fulfilled: (1) the light itself should be of high intensity, (2) there should be a clear focused circle of homogeneous light, (3) the diameter of the light circle should be controllable by some system of focusing, (4) the light axis should be as close to the visual axes as possible and parallel with them, (5) no part of the instrument should protrude into the line of vision, (6) it should be light in weight.

The headlamp which is depicted here fulfils these conditions. From a dry battery worn on a belt, current is supplied to a 4-volt or an 8-volt bulb. This bulb is of special design, having a closely wound spiral filament, placed close to the glass. By overloading up to about 30 per cent. these bulbs will give a very intense light without fusing, though after some twenty hours' use they may gradually turn black and require replacing.

The optical system through which the light passes has been very carefully worked out to give the maximum intensity. A condenser is fixed in a movable tube to allow focusing, while distal to the projection lens is a small mirror, set at 45° in order to turn the light beam through a right angle. This mirror is enclosed behind a plane-glass window so that it and also the projection lens do not get soiled.



The headband is cut on a curve and so fits comfortably on the head. The lamp is held vertically in a gimbal ring and can be moved in any direction. The mirror fits snugly against the bridge of the nose and is almost invisible, and in this position allows the light beam to coincide with the visual axes as nearly as is possible. The whole instrument is so light in weight that it can be worn for many hours without discomfort.

I am indebted to Messrs. Rayner and Co., 100, New Bond Street, London, W.1, who have helped me with my experiments and who have made this instrument.

NEW STETHOSCOPES

The Capac Company Ltd. (6, Old Jewry, E.C.2) have devised two new patterns of stethoscope representing the outcome of prolonged research in acoustics as applied to instruments. The chest pieces are of solid construction, supplied either nickel-plated or in aluminium. For each chest-piece there are interchangeable chest-ends so that concave or convex forms may be used. The model with dome and secondary annular diaphragm, when fitted with the convex end, renders heart and lung sounds very clearly. The head-frames are fitted with comfortable rubber plugs for the ears, while in one model a spiral spring between the arms maintains suitable compression. Detachable plug fittings unite the head-frame with the rubber tubes, allowing easy detachment if desired. These instruments are found in use to be both efficient and comfortable; the latter is a factor too frequently overlooked by the makers of stethoscopes.

GASTRIC DISORDER AMONG BUSMEN

A STATISTICAL INQUIRY

A report by Dr. A. Bradford Hill on "An investigation into the sickness experience of London transport workers, with special reference to digestive disturbances," was issued on July 7 by the Medical Research Council and the Industrial Health Research Board.[1] The Industrial Health Research Board has investigated health problems of importance to industry by the use of sickness statistics on three previous occasions. In 1927 an attempt was made, by utilizing the incidence of sickness recorded under the National Health Insurance Acts, to discover whether artificial humidity introduced into cotton-weaving sheds had any measurable effect on the health of operatives. Sickness statistics were also applied in investigations into the death rates of printers from tuberculosis and into the liability to respiratory affections of operatives working in the preliminary cleaning processes of cotton-spinning mills. On each occasion the Board has set up a special committee composed of equal numbers of employers and employed in the industry concerned; members representing the Medical Research Council's Statistical Committee; and members representing the Industrial Health Research Board. "It has been the duty of the scientific members to see that such inquiry has been framed and carried out strictly in accordance with scientific requirements."

In 1934 this procedure was applied to the investigation of the alleged excess of gastric sickness among omnibus workers, and a committee was appointed consisting of three members from the London Passenger Transport Board, three from the Trade Union of Transport and General Workers, and three independent scientific members. The committee unanimously decided that an answer must be sought to this question: "Do omnibus workers suffer from digestive complaints more frequently or more severely (or both) than other groups of workers of similar economic and social position?" The problem of causation could not be tackled until the question of incidence had been settled. To begin with, the inquiry had therefore to be statistical.

As Dr. Bradford Hill points out in his introduction, a recorded sickness rate is the end-result of many factors, the separate influences of which are not measurable. It was therefore important to choose, for the purpose of the investigation, a comparative group of workers for whom such extraneous influences as economic position, type and severity of occupation, degree of unemployment, sickness benefits, etc., were equivalent to those to which omnibus workers are subjected. Tramway workers were unanimously chosen for the comparative group, and the investigation was limited to London. Although a number of ill-defined complaints may be included under the term "gastric," there appeared to be no grounds for believing "that what was termed 'gastric' in busmen covered a wider number of conditions than did the same term as applied to tramway men." In the preface to Dr. Bradford Hill's able report it is stated: "It may now seem fortunate that the Board were alert to the problem, and were able to make a scientific and detached investigation before the question at issue became a matter of public controversy."

We reprint below Dr. Bradford Hill's conclusions, references to tables being omitted.

Summary and Conclusions

1. An examination has been made of the sickness records of omnibus and tramway workers in the employment of the London Passenger Transport Board, with the object of seeing whether the omnibus workers have an abnormal sickness experience from diseases attributed to gastric causes. The special committee supervising the inquiry agreed that the tramway workers should be taken as a standard of comparison, it being a belief of the men's Trade Union representatives that these workers are not affected by gastric illness to the same extent as the omnibus workers.

2. The sickness data used were extracted from the records of the London Passenger Transport Board, and related to *all periods of illness of fifteen days' duration or longer, the numerically large mass of shorter and less serious periods being ignored.* The diagnosis of the cause of sickness that had to be used was, usually, that given by the panel practitioner on the worker's first certificate of incapacity. It is certain that numerous errors will arise from this, but a test specially carried out showed approximately the same degree of error with regard to gastric sickness in all the occupational groups (for sickness of at least three weeks' duration).

3. The data were extracted for the years 1925–6 and 1933–5, and relate in all to more than a million and a quarter days of sickness. By means of the figures for the earlier years it was hoped that it might be possible to see whether, with changing conditions of the working environment, any changes in the sickness experience had occurred. It was found, unfortunately, that in 1925–6 the diagnosis of the cause of sickness was so frequently missing from the omnibus workers' records that these data were too unreliable to be put to any further use.

4. The analysis of the sickness experience of the occupational groups has, consequently, been confined to the data relating to the years 1933–5, in which years 871,258 days of sickness (of durations fifteen days or more) were recorded. Of this total 17,974 days lacked a diagnosis of the cause of sickness and were excluded. The final analysis therefore relates to 273,150 days of sickness recorded for omnibus drivers, 310,180 days for omnibus conductors, 138,050 days for tramway drivers, and 131,904 days for tramway conductors.

5. It is known that the age distributions of the omnibus and tramway workers differ considerably, more of the latter workers being at the higher ages of working life than of the former. It has therefore been necessary to compare the occupational groups age by age, and in reaching a comparative figure for all ages to allow for the differences in the age distributions. The allowance has been made by calculating for the omnibus drivers the figures that they would have shown in each of four age groups, and, by summation, at all ages, if they had the same sickness experience in those age groups as the tramway drivers. The omnibus conductors have been compared in the same way with the tramway conductors.

6. By these means it is found that the omnibus drivers at all ages had in 1933–5 a relative excess of gastric sickness (that is, in proportion to sickness from all causes) of 12–14 per cent. over the figure shown by the tramway drivers. In the same way it is found that the omnibus conductors at all ages had a relative excess of gastric sickness of 15–18 per cent. over the figure shown by the tramway conductors.

7. Expressed in a slightly different way it is found that, roughly, one day in six and a half of the total days of sickness (of over two weeks' duration) recorded by the two groups of omnibus workers was attributed to gastric causes, whereas if they had had the same experience as the comparable tramway groups the ratio would have been one day in seven and a half.

8. This relative excess varies very considerably with age. There is no clear evidence that the omnibus drivers suffered relatively unfavourable rates from gastric causes either at ages 20–29 years or at 50 years and upwards. The relative excess of sickness from these causes (*in proportion to all causes*) was confined to the ages 30–49, at which it amounted to some 20 per cent. in days of sickness experienced and some 13 per cent. in number of periods recorded. But at these ages their total sickness experience—that is, from all causes—was not unfavourable in comparison with that of the tramway drivers.

The relative excess of gastric illness (in proportion to all causes) amongst the omnibus conductors was mainly derived from ages 20–39, at which it amounted to 34–35 per cent. both for days of sickness experienced and number of periods recorded. But at these ages their total sickness experience—that is, from all causes—was not unfavourable in comparison with that of the tramway conductors. Since the excess of gastric sickness at all ages was 15–18 per cent. for conductors, it follows that this higher figure at ages 20–39 must be balanced by lower figures at other ages. In fact, though at older ages the total sickness experience—that is, from all causes—of the omnibus conductors was in excess of that recorded for the tramway conductors, there was no evidence at these ages of a relatively greater liability of the former to diseases of the gastric system (that is, in proportion to sickness from all causes).

9. The age groups in which the relative excesses of gastric illness amongst the omnibus workers are found are numerically important. About three-quarters of the total number of omnibus drivers are of ages 30–50, and about two-thirds of the omnibus conductors are of ages 20–40.

10. In short, taking only sicknesses of over two weeks' duration and a wide group of diseases attributable to gastric causes (and the original data did not, it was held, justify any subdivision of this group), it was found that there was, in 1933–5, some excess of gastric illnesses recorded amongst the omnibus workers as compared with the tramway workers in those age groups to which the majority of the former belong, though at these ages the total sickness experience, from all causes, of the omnibus workers was rather more favourable than that of the tramway workers.

[1] Report No. 79. H.M. Stationery Office. (6d., postage extra.)

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SURGICAL TREATMENT OF ESSENTIAL HYPERTENSION

To those interested in the recent development of surgery applied to the sympathetic and vascular systems it must long have been evident that the problem of essential hypertension would soon focus the attention of some of the more hardy pioneers in this field, for, as in all other obscure affections of the vessels, the belief has been widely held that essential hypertension is primarily a disorder of the sympathetic nervous system. And since the older physiologists taught the paramount importance of the splanchnic area in the control of the arterial pressure, operations for the relief of hypertension have chiefly been designed to interrupt the vasoconstrictor fibres to the abdominal viscera.

One of the simplest operations, developed by Peet and his collaborators at Ann Arbor, is supradiaphragmatic resection of the major and minor splanchnic nerve and of the tenth, eleventh, and twelfth thoracic ganglia on both sides. This has been performed on 100 patients suffering from essential hypertension with an operative mortality of 4 per cent.; in fifty-four cases followed from four to twenty-three months after operation the subsequent mortality was 15 per cent.[1] Freyberg and Peet[2] have described more fully the results in forty-eight cases followed for three months or longer. In nearly every case the blood pressure abruptly fell immediately after operation, but in most instances it rose later to a variable degree. Freyberg and Peet state that when the patients were last examined the blood pressure was within normal limits in 12.5 per cent., was significantly below the pre-operative level in 37.5 per cent., remained unchanged in 48 per cent., and had risen in 2 per cent. In those patients whose blood pressure was lowered the renal function, as estimated by the urea-clearance test, was unaltered or actually improved after operation. Relief of such symptoms as headache and dizziness is said to have been definite in about 68 per cent. of cases. Perhaps the most remarkable post-operative result was the resolution of albuminuric retinitis in five cases of malignant hypertension[3]; in four of these the blood pressure was much reduced; in one it was unaltered. A second operation—bilateral section of the anterior spinal nerve roots from the sixth thoracic to the second lumbar inclusive—has been performed in the Rockefeller Hospital, New York.[4] Besides interrupting the vasoconstrictor nervous impulses to the abdominal viscera, this operation paralyses the abdominal somatic muscles, thus, it is hoped, promoting the pooling of blood in the veins of the belly. The operation is performed in two stages, the requisite length of dura mater being exposed at the first and the nerves divided at the second. Twenty patients with essential or malignant hypertension and systolic pressures over 200 mm. Hg were so treated: of these one died on the table in a one-stage operation; one died of a streptococcal infection after the first stage; one developed a transverse myelitis after the dura had been exposed, with subsequent partial recovery of the paraplegia; and one refused the second operation. Sixteen patients on whom the operation was successfully performed were followed up for periods of one to twenty-nine months; of these three died later. In all cases the blood pressure fell slightly or considerably at the end of the operation and thereafter showed a variable tendency to rise; renal function was not impaired by the fall in the blood pressure. Subjective improvement was pronounced in fourteen patients.

These two operations seem to yield similar results. In a few cases there is a considerable and prolonged fall in blood pressure and marked symptomatic improvement; in others the operation seems to have had little permanent effect. Why there should be this discrepancy is not at all clear. Essential hypertension is merely a convenient label applied to a condition in which more than one aetiological factor may be involved, and the operative results may differ because at least two separate diseases are under consideration. The facts available do not, however, add substance to this speculation, for of two patients apparently similar in every respect one may respond well and the other not at all; some patients with the malignant type of hypertension obtain great relief and others none. Peet considers the only contraindications to operation are an age greater than 50 years, a rather high non-protein nitrogen content of the blood, cardiac failure, and possibly cardiac asthma. Page and Heuer's best results were in young women with an unstable temperament. Post-operative mortality figures make it doubtful whether splanchnic denervation materially alters the course of the disease. While judgement on this point is clearly premature, the doubt, together with the absence of any indication as to which patient is likely to respond favour-

[1] *Univ. Hosp. Bull.*, Ann Arbor, 1937, 3, 1.
[2] *J. clin. Invest.*, 1937, 16, 49.
[3] Fralick and Peet (1936). *Arch. Ophthal.*, Chicago, 15, 840.
[4] Page and Heuer (1937). *Arch. intern. Med.*, 59, 245.

ably, will probably prevent the wide practice of such operative measures until more information is available.

Whatever its direct contribution to the relief of human suffering, surgical intervention, when its results are carefully observed, rarely fails to add precision to our conceptions of the mechanism of disease. Here the failure of splanchnic denervation to lower the blood pressure permanently in at least half the cases proves that in them the raised blood pressure was not due to splanchnic vasoconstriction of nervous origin. This agrees with the experimental results of Prinzmetal and Wilson[5] and of Pickering,[6] who independently found that in essential and malignant hypertension the vessels of the forearm and hand remain abnormally constricted when deprived of vasoconstrictor nervous impulses. Page and Heuer regard the long-lasting fall of blood pressure in some patients as evidence for the vasomotor hypothesis; but it must be noted that the most conspicuous diminution of blood pressure in their series was in the patient who developed a transverse myelitis after exposure of the dura mater and whose anterior roots were never divided. Peet, on the other hand, thinks that the favourable results in some cases may be brought about by dilatation of the renal vessels, the idea being that in certain instances hypertension is due to renal ischaemia, a measure which Goldblatt and his co-workers[7] have shown to produce a marked and prolonged rise of blood pressure in the dog. As yet there is no evidence for this interesting speculation.

THE PREVENTION OF SILICOSIS

During the past few years the problem of silicosis has been very actively attacked in Canada by a group of investigators under the general direction of Sir Frederick Banting, and the scene of some of this work has been the McIntyre Porcupine Gold Mine, Ontario. Among the new facts that have emerged is the influence of noxious gases produced by blasting on the development of silicosis. Underground workers exposed to these gases in addition to dust appeared to be more liable to develop the disease than those in the crushing houses above ground, although the dust concentration in the latter was considerably greater than in the mine itself; the suspected adjuvant action of gases was then confirmed by animal experiment by W. D. Robson and others.[8] During the course of these and other experiments a technique for dusting animals has been developed which appears to be certain and expeditious in its results. The animals are placed in chambers containing a tumbling box in which loose quartz is rotated in a grinding medium, producing a high concentration of particles of suitably small size in the air of the chamber. Daily exposure of rabbits to quartz dust in this apparatus for the comparatively short period of six months or rather less apparently produces typical nodular silicosis with regularity, and hence furnishes a strictly imitative and reliable method of experiment for testing the effects of other dusts. The latest product of this series of researches, which is now reported by J. J. Denny, W. D. Robson, and D. A. Irwin,[1] breaks entirely new ground, and will be received with much interest. It is concerned with a possible method of reducing the solubility of silica in the tissues.

No one now disputes that siliceous materials cause fibrosis only after they have passed into solution in the body fluids, and studies of the solubility of various minerals which are now in progress may throw a good deal of light on their varying capacity for causing fibrosis. It is also well known that alkali increases the solubility of silica; cases of rapidly progressive silicosis have resulted from exposure to dust from a commercial product containing free alkali in addition to a siliceous powder. The possibility that some such action as this might be at work in accelerating the production of silicosis in miners does not appear to have been considered as fully as perhaps it should be, and the first part of the new work now reported in Canada consists of experiments which show that *in vitro* the solubility of quartz is increased by the addition of carbonates or hydroxides of magnesium and calcium. Such substances as these, if present in quartz-containing rock, may therefore exercise an important influence on its effect in the lung. There is, however, another and extremely interesting observation, which is that there are means of reducing the solubility of siliceous material. It is not altogether clear why the particular substance was chosen, and the authors themselves confess that they do not understand how it acts, but they find that the solution of quartz is almost entirely prevented *in vitro* by adding finely particulate aluminium. Moreover, if quartz dust is mixed with aluminium dust of the same order of particle size, the proportion of aluminium in the mixture being less than 1 per cent., this dust does not produce nodular fibrosis in the rabbit's lung. In spite of the presence of as much quartz in the lung as serves to cause proliferative fibrosis in controls receiving no aluminium, the only effect produced is a foreign body type of reaction.

[5] *J. clin. Invest.*, 1936, **15**, 63.
[6] *Clin. Sci.*, 1935-6, **2**, 209
[7] *J. exper. Med.*, 1934, **59**, 347.
[8] *Canad. med. Ass. J.*, 1934, **31**, 237.

[1] *Canad. med. Ass. J.*, 1937, **37**, 1.

It is evidently much too early to assess the significance of this observation fully, and it is also certainly far from clear whether its direct application in silicosis prevention is practicable. At the same time it does encourage the hope that on some such lines as these a method may be found either of so treating mine dust that its dangers will be much reduced or of treating exposed workers themselves in such a way that the consequences of their inhaling dangerous dusts will be minimized.

THE DEVELOPMENT OF CARDIAC ENLARGEMENT

The clinical methods of palpation and percussion are no longer to be relied upon to determine early changes in the size of the heart, for these methods are of limited use even in estimating slight enlargement of the left ventricle. Early alterations in the size of the heart are as a rule to be recognized only by radiography, the study of which has led to the separation of a variety of changes in the shape of the heart, characteristic of corresponding aetiological conditions. But the rate at which enlargement develops and the effects upon it of functional changes in the heart have remained relatively obscure, and for this reason the recent contribution[1] by J. H. Palmer is welcome. Serial teleradiograms and a few orthodiagrams of the heart in various conditions were taken over a period, in most cases, of several years: such serial records are difficult to collect in large numbers and therefore only a few cases are reported in each group. The change in the size of the heart with the advent of congestive failure is of fundamental importance, and Palmer finds that, after allowance is made for alteration in the level of the diaphragm—and, more rarely, for the effects of pericardial effusion—the increase is not great: what increase there is involves chiefly the auricles and superior vena cava. Nor is the disappearance of congestion accompanied by much diminution in size. Closely connected with the subject of congestive failure, and especially when associated with tachycardia either simple or due to one of the arrhythmias, is the problem of acute dilatation of the heart. By this is implied a rapid enlargement, even within a few hours, and, although it has long been accepted as a reality, satisfactory proof of its existence has not been forthcoming. Palmer's observations on congestive heart failure, tachycardia, the arrhythmias, and on the heart in acute nephritis—conditions in which there is a sudden increase in the load on the heart—negative the view that acute dilatation occurs. Most cardiac disease ends in failure, and when this happens the localized early enlargement is found to be supplemented by a more or less general increase in size. This is explained on the theory of back pressure—now once more in favour—as being due to the extension of engorgement from the chamber primarily affected to those behind it. Another factor thought by the author to help in the production of such generalized enlargement—or at least the appearance of a symmetrical increase—is the pericardium: when the limit of its extensibility in one direction is reached it will compel further increase in size in others. Although it is usual in cardiac disease to find gradual increase in size and gradual impairment of function, there is reason to believe that so long as the load remains constant and no pathological changes occur in the muscle the size remains fairly constant. In support of this certain cases of valvular disease and hypertension are mentioned. Progressive enlargement without obvious cause is perhaps often to be explained by coronary atheroma. Age may play an important part in determining both the extent of enlargement and the rate at which it takes place, and if, as Palmer's observations suggest, certain conditions such as hypertension have greater effects in both these respects in the young than the old, the greater capacity for growth of the tissues of the former serves as a possible explanation. The general validity of this conclusion, however, remains to be proved. Certainly there are exceptions—for example, the very slight enlargement seen in some young people with coarctation of the aorta and hypertension. The work embodied in this report attacks problems that have been long waiting solution, but which, because of the prolonged and laborious investigations necessary, have remained obscure. They should, and doubtless will, be continued and extended by others.

[1] *The Development of Cardiac Enlargement in Disease of the Heart: A Radiological Study.* By J. H. Palmer. Med. Res. Counc. Spec. Rep. No. 222. H.M. Stationery Office. (1s.)

PHYSICAL EDUCATION IN GERMANY

A delegation consisting of senior officials of the Board of Education and the Scottish Education Department and a few other experienced observers lately visited Germany at the invitation of the German Government in order to study methods of physical education in that country. The report of this delegation (Educational Pamphlet No. 109) has now been published as a pamphlet of eighty pages by H.M. Stationery Office, price 1s. It deals with physical education in the schools, in the universities, in the various national associations, including the Hitler Youth, and in the organization known as Kraft durch Freude (Strength through Joy). It is mainly a descriptive document, but it also attempts to assess values and to compare German methods with those adopted in this country. Discussing the "Napoli" Schools (National Political Educational Establishments), of which there are fifteen, and which are a new feature of the German educational system, the report says that the aim of these schools is to train boys with a natural capacity for leadership for political, military, and other posts of special importance and responsibility. Many thousands of applications for admission are received every year, but the entrance standard is high and only exceptionally gifted boys have any chance of being accepted.

"The Hitler Youth organization is under an obligation to look out for and suggest the names of outstanding boys, and the head masters of the schools travel all over Germany to interview likely candidates and discuss their cases with people who know them well. Before entry a

searching physical as well as intellectual test is set, and the parents' consent must be obtained. . . . The programme of the 'Napoli' Schools has been drawn up in accordance with the Führer's own ideas. The first aim is the cultivation of healthy, hardy bodies, patient of toil and fatigue and heat and cold, and inured to stress and strain. Next comes the development of mental capacity, the formation of character, schooling in the exercise of will-power and determination, and training in responsibility and leadership. The last—and avowedly the least important—aim is to give the pupils proficiency in book knowledge and a grounding in academic subjects generally."

Physical training departments have been set up in all the universities, and by Ministerial decree every member of the German student body has to undergo a course of elementary training in gymnastics, athletics, and games during his or her first, second, and third semesters—that is, for eighteen months. Thus physical training is now recognized as an essential part of the general training of youth, and is given as important a place in the university course as that held by academic subjects. The report says that the Hitler-Jugend is the most efficiently organized youth movement in the world. There seems little doubt that the entire German youth is, as it were, to be conscripted into it and educated physically, morally, and politically through it, and any boy who has not passed through the movement will be debarred from a professional career in the service of the State.

"There is no doubt whatever that the Hitler-Jugend has caught the imagination of the young people, and no pains are spared to ensure that it shall make the strongest possible appeal to their emotions and adventurous instincts, and to invest it with an aura of high romance. . . . He is encouraged to read books and magazines of a type that would hardly be allowed to find a place in any school library in this country, and when he does read fiction it is often of such a highly sensational character as to make the most daring school stories and 'bloods' published in this country seem utterly feeble in comparison."

Commenting on Kraft durch Freude, the report says that it is for the foreigner the most agreeable and possibly the most instructive phenomenon of the Third Reich. The idea is

"to teach the German worker sensible ways of occupying his leisure; and Kraft durch Freude boldly faces the fact that the vast majority of people do not want to spend a great deal of their spare time sitting at home and reading books; they want to get out into the open, to exercise their bodies, to play games, and to do things rather than think things with their fellows. It is constantly dinning into the worker's ears that a man's life is not all toil and labour, and points out that he has the right to demand of the State that it shall cater for his leisure in this manhood as it catered for his education in his childhood. National Socialism, he is told, recognized the justice and reasonableness of this demand, and is taking effective steps to see that he can every day look forward to a complete change of occupation and a jolly one at that—after he has passed through the factory gates in the evening."

The report concludes with a chapter which raises the pertinent question: Is not the present German preoccupation with the subject of physical training likely to go too far, and is there not already a tendency in that country to seek to develop the body at the expense of the mind and to regard it as a mere machine to be kept constantly tuned up to the highest possible pitch of efficiency? One thing greatly impressed the delegation: a tenseness and ultra-seriousness of expression among the young people seen at work in the schools and in the Hitler-Jugend.

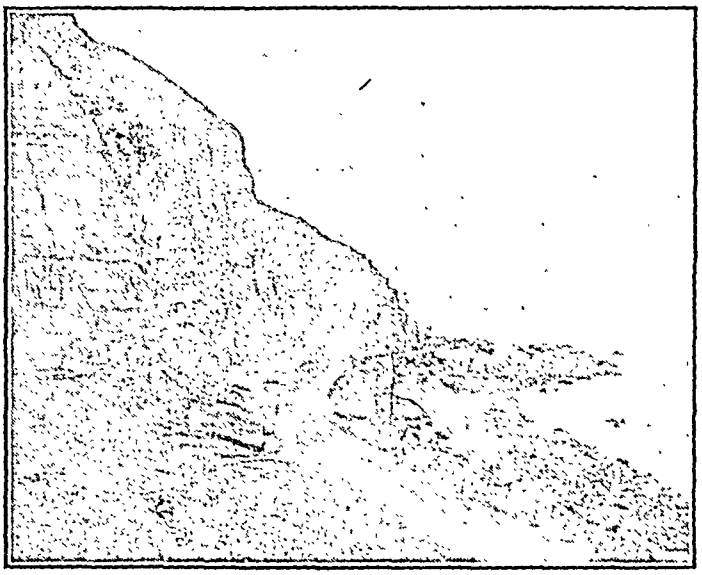
THE ENDOCRINES IN THEORY AND PRACTICE

As endocrinology has been extending its frontiers so widely during the past decade or more, and as the practising physician must find it increasingly difficult to distinguish between the rational and the extravagant claims made on behalf of endocrine products, we invited workers in this field to contribute the articles which appeared weekly in these columns between October 17, 1936, and May 15, 1937. We understand that in one university medical students were told by their teachers to "read the articles in the *B.M.J.*" if they wished to be informed of "the latest" in endocrinology, and that similar advice was given to postgraduates at another teaching centre. The appreciation of this series shown by so many must be as much a source of satisfaction to our contributors as it is to us. In response to requests that the series should be collected in book form this has now been done, and a volume entitled *The Endocrines in Theory and Practice* is published this week by Messrs. H. K. Lewis and Son, Ltd., at the price of 9s. In this volume each ductless gland is dealt with from both the scientific and the clinical aspect. The clinical chapters will, we believe, give the man in practice sound guidance on the uses and limitations of endocrine therapy, and enable him to assess more accurately the value of the attractive brochures that arrive with his morning's post. He will also gain instruction from the scientific chapers, for an understanding of the physiology of the endocrines cannot but make for more intelligent therapeutics.

A DIGEST OF TREATMENT

Another attempt to help those who feel overburdened with the gradually increasing literature on medical subjects has been made in the form of a monthly review of therapeutics, entitled *Digest of Treatment*, the first number of which appears this month. It is small enough to carry in the coat pocket, consists of eighty pages, and each issue will contain about forty to fifty extracts of articles on treatment which have appeared in the 200 medical journals surveyed by the editorial staff. This new venture is carried out under the general editorial supervision of Dr. George E. Rehberger, and is published by J. B. Lippincott Company, Washington Square, Philadelphia, the annual subscription being 25s., post free. In a circular issued by the publishers it is stated that "the editors are given absolute freedom in making their selections—no selections are made because they are favourable to advertisers. No advertising of any nature will be carried."

and Jura to the north and the coast of Argyllshire to the east are visible. It was on Rathlin that Robert Bruce took refuge after his defeat at Perth before finally avenging himself at Bannockburn; it was here also that the legend of Bruce and the spider originated. Of modern interest is the fact that Marconi's first experiments in wireless transmission were carried out between North Antrim and Rathlin. The road from Ballycastle leads westwards to the Giant's Causeway and Portrush. On the way are numerous beauty spots and scenes of interest. Kenbane Head, the village of Ballintoy, the rope suspension bridge at Carrick-a-rede, Whitepark and Murlough Bays form a succession of interests which anticipate the arrival at the Causeway.

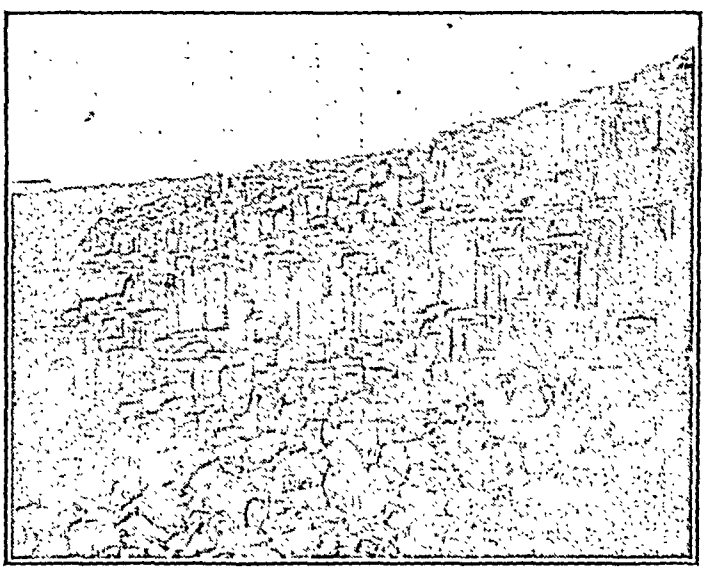


Antrim Coast Road.

The Giant's Causeway

The Giant's Causeway is reputed to be one of the seven wonders of the world. There is nothing elsewhere like it, and herein lies its unexampled quality. The formation of octagonal columns, suggestive of the work of bees but on a grand scale, has been explained by geologists, but the native guide still maintains the theory of giant origin (Finn McCoul) with an eloquence that lacks nothing in conviction! The Causeway reaches out to sea with its "Giant's Well," its "Wishing Chair" among its novelties; along the cliffs are the "Chimney Stacks," the "Organ," the "Giant's Loom," and "Lord Antrim's Parlour," and at every point glorious views of sea and coast. The exploration of the caves of the head by boat is an experience, doubtless excelled by the Blue Grotto of Capri, but still unique on the coastline of these islands.

On leaving the Causeway the motorist passes through the village of Bushmills to meet the electric tramway which runs along the roadside to Portrush, the first electric tramway to be opened in the British Isles. Dunluce Castle stands on a promontory separated from the mainland by a deep chasm spanned by a narrow bridge. This picturesque ruin was obviously an extensive fortress with a communication via a cavern with the sea by which provisioning was carried out during siege. The origin of the castle is uncertain, but it is mentioned in fifteenth century history as having been occupied by McQuillans, MacDonells, and various Elizabethan commanders. Rounding the headland one sees Portrush in the near distance with the Donegal Highlands in the background. Between the road and the sea are the undulating hills where are laid the links of the Royal Portrush Golf Club, one of the three finest golf courses in Ireland and the equal of the most famous in England and Scotland.



Giants Causeway.

Portrush is a popular seaside resort. It is ideally provided with a three-mile strand of golden sand extending to the White Rocks, magnificent bathing facilities, and all the amenities for an ideal holiday with the sea breezes from the open Atlantic. Near by is Portstewart, quieter and more restful, but also provided with its golden strand, its golf course, and bathing. Across the River Bann (famous for its salmon fishing) is Castlerock, which lies on one of the routes to Derry.

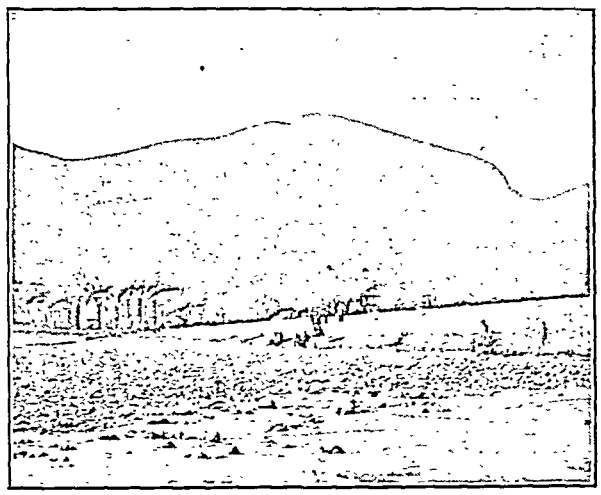
Londonderry

Derry is famous for its place in history and as the "Maiden City" of Ireland. It dates from the sixth century, when St. Columba founded an abbey there. History records the struggles of the natives against the Danes, the Anglo-Normans, and the English, as well as its status in the ecclesiastical realm. Derry was the scene of many battles through the ages. James I in his project of the plantation of Ulster included the creation of the county of Londonderry as well as the corporation of the city, conveying the whole county to "six and twenty discreet citizens of our City of London." These were called the "Society of the Governor and Assistants, London, of the new plantation in Ulster, within the realm of the Kingdom of Ireland." Thus ancient Derry became Londonderry, and the Irish Society was formed to promote religion, education, and industry in the newly constituted county. The Society has retained Londonderry and Coleraine as well as the fisheries of the Bann and the Foyle; the remainder of the properties was divided among the London Companies of Vintners, Grocers, Drapers, Goldsmiths, etc. To this day the Governor, who must be an alderman of the City of London, and members of the Society pay an annual visit to their properties.

The historic walls of Derry were completed in 1619 and the cathedral in 1633. In 1641 there was warfare again, in 1649 a siege of twenty weeks, and in 1688 the gates were closed by the apprentice boys against the soldiers of James II, and in April of that year began the famous siege of Derry, termed by Macaulay as the most memorable in the annals of the British Isles. For 105 days the beleaguered garrison and citizens suffered privation and hardship from which 7,000 persons died. Then came relief when the *Mountjoy*, leading the relieving ships in the Foyle, struck the boom of floating beams and drew alongside the quay, bringing succour to the survivors and setting to flight the investing army of James. The walls are in an excellent state of preservation so that the visitor

can readily walk around them and mentally recreate the scenes of 300 years ago. He can inspect "Roaring Meg," one of the guns used during the defence. He should not fail to visit the cathedral, rich in historical souvenirs of a city whose name at once "suggests religious animosities and protracted sieges."

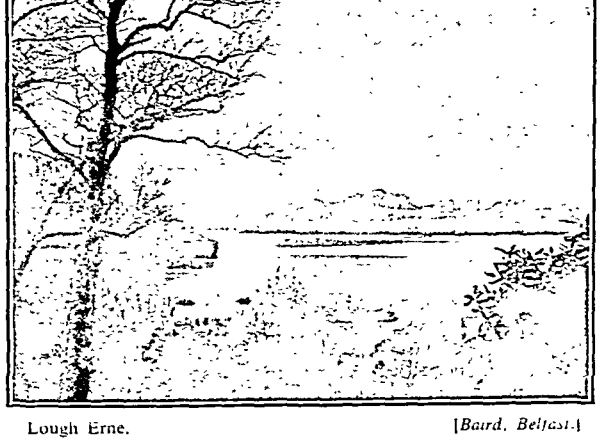
Derry is a city of steep hills on the banks of the Foyle. It is the centre of the shirt-making industry and distributes its products far and wide; some thirty factories are engaged in this work. It is the natural distributing base for the neighbouring county of Donegal, and is an admirable centre for historical research, for interest, and for beauty. The Donegal Highlands are easily accessible, while to the south are the Sperrin Mountains and Lough Erne. The direct route to Belfast leads through the mountains, across Glenshane Pass, through Maghera, Toome, and Randalstown, to Antrim and Belfast.



Mourne Mountains from Newcastle: Slieve Donard in background.

Lough Neagh and Antrim

Less than a mile outside Antrim is Lough Neagh, the largest inland lake in the British Isles. Surrounded by wooded country it borders five counties with a hinterland of mountain in all directions. To the north is Slemish, on the slopes of which St. Patrick herded Milchu's pigs; not far from this spot he made his first convert to Christianity. Near to Antrim is one of the two perfect round towers in Ulster, although remains of others are found elsewhere. The origin of these peculiar structures was a subject of controversy among archaeologists, but all now admit that there is a close relationship with religious establishments of the early Church in Ireland. In the town of Antrim stands the cottage in which Alexander Irvine was born, author of one of the most poignant stories of Irish peasant life, *My Lady of the Chimney Corner*. Within a few miles of Antrim is Aldergrove, the R.A.F. aerodrome, and on the way to Belfast the route can include Ballinderry, where still stands Jeremy Taylor's church. It was here that the famous Bishop took refuge from the Puritans, and here he penned many of his works. Within seven miles of Belfast is Lisburn, rich in famous associations. Louis Crommelin, a Huguenot refugee, settled in Lisburn, and was appointed by William III to organize the linen industry in Ireland. His genius has borne fruit in the establishment of the staple industry of the North. Jeremy Taylor died in Lisburn, but the great figure is Nicholson of Delhi, who, with Henry Lawrence in Lucknow and John Lawrence in the Punjab, have engraved their names for ever in the history of the suppression of the Indian Mutiny.



Lough Erne. [*Baird, Belfast.*]

Down

Among the Irish counties Down is characterized by its undulating surface, its fertility, and its coast. The inlet of the sea (Strangford Lough) is notable for its multitude of islands. North Down, including the peninsula between the eastern shore of Strangford Lough and the Irish Sea, known as "the Ards," is famous for the ancient seats of learning at Holywood, Bangor, Movilla, and Greyabbey. On Strangford's opposite coast are a numbers of others at Ardmillan, Mahee and Nendrum, Raholp and Saul, the latter mentioned marking the landing-place of St. Patrick.

Along the southern shore of Belfast Lough the road leads through Holywood, past Clandeboye, to Bangor. Clandeboye is the seat of the Marquess of Dufferin and Ava. On the highest summit of the estate stands Helen's Tower, named after Helen, Lady Dufferin, granddaughter of Richard Brinsley Sheridan and great-grandmother of the present Marquess. Many literary notabilities have paid tribute to this gracious lady, Browning, Tennyson, Houghton, and Kipling among them, their contributions being inserted in the walls of the reception room of the tower. Perhaps the words of Tennyson are best known:

> "Helen's Tower, here I stand,
> Dominant over sea and land,
> Son's love built me and I hold
> Mother's love engraved in gold,
> Love is in and out of time;
> I am mortal stone and lime. . . ."

Bangor, a popular watering-place twelve miles from Belfast, was once the seat of a great monastic foundation, known throughout Europe as a centre of learning and piety from which went forth famous missionaries to various parts of the Continent. In Milan is preserved a priceless manuscript, the book of anthems used in Bangor Abbey in the seventh century. To-day Bangor is a populous borough, and is regarded by many as the villa town of Belfast. Its views include those of the Antrim coast on the north and the outline of the Wigtownshire coast to the east. Yachting is full of interest in July, when the annual regatta attracts the famous yachts from the Solent. It was from the Royal Ulster Yacht Club that the late Sir Thomas Lipton issued his challenges for the America's Cup with his famous *Shamrocks*. These graceful boats, along with their competitors, are as familiar here as on the Clyde.

From Bangor the coast road leads southward through Donaghadee, Ballywalter, and Cloughey to Portaferry, and thence northward along the east coast of Strangford

Lough to Newtownards, the seat of the lace embroidery industry. The monument on Scrabo Hill, erected as a memorial to the third Marquess of Londonderry, dominates the picture and can be seen from many parts of Ulster. Newtownards lies at the base of the Ards peninsula, and is notable for the beauty of the countryside and the distant views of the Mourne Mountains. Mountstewart, the residence of the Marquess of Londonderry, occupies an ideal situation. Its beautiful gardens, stocked with the rarest and choicest of blooms, are a feature not easily forgotten. The gardens at Greyabbey are overshadowed by the interest in the Cistercian abbey, founded in the twelfth century by John de Courcy, and occupied until it was finally abandoned in 1543.

The Kingdom of Mourne

As County Antrim is famous for its Giant's Causeway and glens, so is the county of Down proud of the splendour of the Mountains of Mourne, at the foot of which lies Newcastle. One route to this seaside town is by way of Killyleagh to Downpatrick, close to which St. Patrick founded two churches in his evangelizing mission. It is claimed that Downpatrick is his burial-place, and a huge stone marks the site of his reputed place of sepulture. The sandy low-lying coastline is in marked contrast with the ruggedness of Antrim, so that all the seaside towns and villages of Down are attractive for their sandy beaches and strands. Ballyhornan, Dundrum, and Tyrella lead to the climax of Newcastle nestling beneath the shade of Slieve Donard, the part of Mourne whose mountains "sweep down to the sea."

Newcastle owes its position in popular favour to its natural attractions. It is the home of the Royal County Down Golf Club, one of the most famous and best known courses in the world. Demesnes and gardens abound on the slopes of the mountains, and the horticulturist will find his time passing all too rapidly as he envies the possession of shrubs and alpines abounding in the luxuriance of their growth. From Newcastle the beauties of the Mourne Mountains can be explored by car or on foot. Slieve Donard appears to rise from the water's edge; Slieve Bignian with its crown of ragged crags lies to the south, with Bernagh and Commedagh and the other peaks in company. The Silent Valley has been impounded to provide an enormous reservoir which supplies Belfast with an abundance of excellent water.

From Newcastle the road continues round the coast through Annalong and Kilkeel to Rostrevor, sheltering under the southern aspect of the Mournes where they reach Carlingford Lough. The climate is particularly mild, so that exotic shrubs and plants grow as in the profusion of a Riviera climate. Woods of oak, ash, and pine abound on grassy mountain slopes. Carlingford Lough is an inlet between the mountains of Mourne on the north and those of Louth on the south. The coast road from Rostrevor provides many changing views of both until Newry, the "gap of the North," is reached. Newry is one of the most ancient towns in Ireland and the centre of a district teeming with historical memories. It lies on the main Dublin-Belfast road, leading through Banbridge, Dromore, Hillsborough, and Lisburn to Belfast.

Armagh

The history of Armagh dates to the pre-Christian era, and it is reputed to have been the seat of the warrior Queen Maha in 300 B.C. Much of the history of Ireland could be written around the cathedral city of Armagh, the ecclesiastical centre of Ireland since the days of St. Patrick. The Protestant Cathedral stands on the site where Patrick built his first cathedral in 445, and some maintain that a portion of the present building dates from the eighth century. Within the sacred edifice are famous sculptures as well as regimental colours, including a French colour (the only enemy colour ever captured within the British Isles) taken by the Armagh Light Infantry in 1798. Brian Boru, famous in the ancient history of warfare in Ireland, was buried close to the cathedral site, after a battle in which were defeated the Danes and Northmen who had ruled Armagh and maintained a fleet on Lough Neagh. The Roman Catholic Cathedral reared on a hill on the opposite side of the valley is notable among other features for the beauty of its ceiling mosaics and its peal of bells. The observatory, dating from 1790, contains the largest telescope in Ireland as well as a collection of unique clocks and instruments. The Primate's Palace, standing in its own grounds, possesses portraits of all Primates since Henry Usher (1595). "The Book of Armagh" includes a record of the life of St. Patrick written by himself and a copy of the New Testament written in 807.

From Armagh the road leads through Portadown and Lurgan to Lisburn and Belfast. Portadown and Lurgan are thriving industrial towns just five miles apart, set in the midst of the fruit-growing country which has gained for Armagh the title "The Garden of Ulster." In springtime the multitude of orchards in their blaze of blossoms would evoke the admiration of the most prosy, and would compare with the magnificence of the festival of cherry blossom in Japan. "Æ" (G. W. Russell), poet, painter, and journalist, was born near Portadown, and in the town Sir Robert Hart ("the most influential and most upright European the East has ever known") saw the light of day.

Tyrone and Fermanagh

To the south and west the road from Armagh leads to Dungannon and Enniskillen; or the east through Banbridge to the Mournes and Newcastle. Strabane, Dungannon, and Omagh are important towns in Tyrone, the first mentioned being the gateway to Donegal and its highlands. Dungannon is the educational centre, dating from the erection of the Royal School founded by James I. Omagh is the county town and administrative centre. The range of the Sperrin Mountains lies in Tyrone and can be easily explored from Omagh. It provides a magnificent panorama of bleakness and grandeur, of wildness and beauty, that is not always realized. Gortin Gap, Barne's Gap, the Glenelly River, and the village of Sperrin are well worth including in a circular tour from Omagh. The rivers are notable for their angling resources, so that the Mourne and the Blackwater among many others have their devotees of this art.

From Dungannon or Omagh the town of Enniskillen, the capital of Fermanagh, the stronghold of the chieftain Maguires, is on the route to the west. The town has its situation on an island in the river which connects Upper and Lower Lough Erne. It occupies a distinguished place in the annals of the British Army in that two regiments, the 6th Inniskilling Dragoons and the Royal Inniskilling Fusiliers, originated and developed out of the town. Enniskillen, however, has other claims upon our attention in view of its relation to Lough Erne. The lower lough provides a sheet of water studded by innumerable islands covered with trees and a luxuriant growth to the water's edge. This famous lakeland area of Ireland compares favourably with the better-known Killarney, and yields nothing in its appeal as a beautiful picture. An excellent motor road winds for some twenty-five miles along the southern shore to Belleek, noted for its potteries, and on across the border to Ballyshannon, Bundoran, and the Atlantic. The land border can be avoided by diverting at Boa Island and returning to Enniskillen along the opposite shore. A day spent in Tyrone and Fermanagh, in the Sperrin Mountains, on the shores of or afloat on Lough Erne, will provide scenes and experiences reminiscent of Killarney and the Scottish Highlands, or of English lakeland and Yorkshire moors. There is much of interest in and around Enniskillen, but all will wish to see the Round Tower on Devenish Island, the best preserved of

these ancient structures in Ireland. Standing some 80 feet high it retains the beauty of form and perfection as it did in the sixth century when it was constructed by St. Molaise.

There is much else to be seen in Ulster. This sketch, taking at random places of interest and character, serves but to indicate the variety which is available to every type of visitor. Good roads abound for the motorist; the angler will find his paradise in some well-known river or secluded stream; the golfer will test his skill on many courses of different qualities, but always midst beauty and harmony of scene. The archaeologist might spend a lifetime in studying the remains of an ancient civilization, and the historian will find that the history of the Empire has its thread in almost every town and village in the country. The inhabitants are reputed to be dour and undemonstrable, but this is an injustice as they are among the most hospitable of folk, although at times rugged in their character. The journey to Ulster is easily made by fast comfortable channel steamers. Every year there are increasing numbers who "discover" Ulster and return to make further acquaintance with its many attractions, not the least of which are the qualities of its kindly and thrifty peoples.

BRISTOL TUBERCULOSIS CONFERENCE

The twenty-third Conference of the National Association for Tuberculosis took place last week in Bristol by invitation of the City Corporation. The meetings in the University buildings were largely attended by tuberculosis officers and lay members of authorities throughout Great Britain. In the absence, through illness, of Sir Robert Philip, president of the Conference, appreciative messages were sent to him, and the chair was taken at the various sessions by Dr. R. A. YOUNG, Professor LYLE CUMMINS, and Dr. F. C. H. COUTTS.

Methods of Propaganda

Opening the first subject, "Propaganda and Publicity Methods," Dr. HARLEY WILLIAMS stressed the point that propaganda was one of the modern weapons in the fight against tuberculosis and sufficiently utilized. It was the science of good will, and should teach the profession the authorities, and the public the social meaning of the disease. At every turn we were handicapped by wrong attitudes, and these could be minimized by effective propaganda. He was afraid that doctors regarded it as somewhat unbecoming, and perhaps even unprofessional. This was unjustified if propaganda were properly understood. The programme must be regular and persistent, and should teach that disease was not inherited, that the worst victims were among the young, and that most of the cases of the disease were curable, given time and proper treatment.

Dr. VERONICA DAWKINS (East Anglian Sanatorium) described the measures in dealing with young women who had been patients in sanatoria. Health instructions throughout the country varied in amount, and were often omitted. Dr. Dawkins described the more advanced measures of popular treatment at present used in Germany, Italy, and among the negroes of the United States. Efforts in this country lagged considerably behind those of the Dictator nations. Most critics of propaganda were themselves non-constructive.

Mr. PAUL SCOTT RANKINE (Central Council for Health Education) detailed the new national campaign with which the Ministry of Health has entrusted his council. This is the first occasion in England when a Treasury grant has been given to aid popular health education. Its object next spring will be to popularize the use of the health services, and elaborate measures of advertising, newspaper publicity, and the use of films, leaflets, etc., are projected by the Central Council. Mr. Rankine described the many ways in which local organizations can cooperate in making these services fertile in their own areas.

Open-air Schools

The second subject, "Preventive Institutions (with Special Reference to Open-air Schools): (*a*) Environment," was opened by Dr. RALPH P. WILLIAMS (Board of Education), who described in a very lucid way the origin of open-air school methods, and showed lantern slides of the progressive improvements in the design of such buildings. It is evident that school architecture has been considerably influenced in the last thirty years by the open-air school as such. Open air stimulates metabolism, improves the appetite, increases resistance. The following children are chiefly selected for admission: (1) tuberculosis "contacts," (2) children convalescent after respiratory infections, etc., (3) children with defects of speech, eyesight, etc. There are at present in Great Britain only ninety-six day open-air schools and fifty-three residential open-air schools, but over three-quarters of the plans submitted to the Board of Education of ordinary school buildings are considerably influenced in design by the open-air principle.

Mr. GEORGE WIDDOWS (formerly architect to the Derbyshire County Council) described the evolution of open-air school design. Mr. NORMAN WHATLEY (head master of Clifton College) spoke on the conditions which should be provided for adolescent boys. He said that modern school buildings were a great improvement on the older ones, and diet to-day was regarded as a serious business. Sufficient sleep was of great importance, and was the chief advantage the public-school boy possessed over others less fortunate. He was afraid that perhaps conditions in public schools were tending to become too "soft." Physical instruction was popular just now, but probably the English would always prefer games to mere routine exercises. Mr. F. C. WILLIAMS (Bristol Corporation) described the development of specialized institutions under his committee, and the arrangements for staff, feeding, and transport.

Dr. N. T. K. JORDAN (Breconshire) described his experience in a residential institution for sixty boys, aged 5 to 14, in Mid-Wales. The cases were all ambulant, and included contacts with tuberculosis, sputum-negative cases of disease, and convalescents. Schools of this type were the answer to those who said that they were not paying enough regard to prevention in the campaign against tuberculosis. Dr. J. E. WILSON (Mansfield) described the remarkable open-air school at Berry Hill. He emphasized the different nature of the school curriculum as giving more attention to nature study and self-expression. Physical training received there twice as much attention as in ordinary schools. Dr. Wilson said he believed in special teaching of deep breathing to children, and argued that habits so formed are of permanent value. Open-air schools ought to be combined with nursery schools.

Nutrition and Tuberculosis

The second part of the subject dealing with nutrition in tuberculosis, from the preventive point of view, was opened by Professor J. A. NIXON (University of Bristol). Nutrition was not merely feeding; adequate rest, exercise, and emotional factors greatly influenced it. Dietetic measures by themselves would not prevent or cure tuberculosis. Nevertheless correct diet was an important factor in resistance. Professor Nixon emphasized the need for proper balance of the various ingredients, the avoidance of overstuffing and excessive doses of cod-liver oil.

Dr. P. A. GALPIN (West Ham) developed his theme of habit in diet. He found that many of his child convalescents

disliked green vegetables or fats, or were "faddy" in their habits of feeding. This was associated with catarrhal states. He himself followed the policy of controlling the child's diet in the light of physiological facts. Other speakers, notably Dr. MEIXNER (Illinois, U.S.A.), drew attention to those workers who found that children improved greatly when allowed, within limits, to select their own food. Other members of the Conference argued that social and economic conditions were the foundation of the problem. Between these two extremes opinion varied considerably.

The Tuberculosis Dispensary

The third subject, "Equipment and Activities of a Tuberculosis Dispensary," was opened by Dr. CAMPBELL FAILL (Bristol), who described the new central clinic about to be opened in Bristol, which has a population of nearly half a million. The object is to give personal attention to each patient, and adequate clinical and *x*-ray examinations. Dr. Faill said that the making of appointments facilitated the work. Reports in improved fashion were sent to the private doctors. There was complete co-operation and a common filing system with the maternity and child welfare department.

Dr. L. J. SHORT (Somerset) described the arrangements in a large and scattered rural area. There could be few clinic buildings and the scheme must depend largely upon the health visitor and a mobile tuberculosis officer. In some cases travelling expenses for patients were paid by the authority; in others the tuberculosis officer visited the patient at home. A summer camp for boy and girl "contacts" was proving successful in Somerset. Dr. MELVILLE HILEY (Glamorganshire) drew attention to the problems in a much depressed urban area. He emphasized the need for reassurance and the mental relief which accurate diagnosis must give. The general practitioner was still essential in the control of "contacts." In the Rhondda Valley 64 per cent. of the cases referred to the dispensary were found to have no tuberculosis.

Dr. MUNRO (Glenlomond) spoke of *x*-ray examinations, deploring the reliance placed upon a negative film as excluding tuberculosis. Radiology was an important weapon if wisely used, both in the "contact" cases and those who showed no symptoms of the disease, as well as in active patients.

The third day of the Conference was devoted to tours to Frenchay Park Children's Hospital and Ham Green Sanatorium, maintained by the Corporation of Bristol. The delegates also visited Winsley Sanatorium, near Bath—a voluntary institution.

At the annual meeting of the National Association, after the transaction of formal business, Dr. NOEL D. BARDSWELL gave an interesting account of his work on the Special Commission in Cyprus, of which a report appeared last week at page 30.

The following resolution was proposed by Dr. DIXON (Birmingham) and carried with acclamation:

> "That this Conference in the fiftieth year since the establishment of the Tuberculosis Dispensary by Sir Robert Philip, reaffirms its belief in the dispensary method of eradicating tuberculosis, and sends cordial greetings and congratulations to the Founder."

The first of a series of leaflets describing standard methods for the detection of toxic gases in industry has been issued by the Department of Scientific and Industrial Research. It is concerned with hydrogen sulphide and describes a relatively simple method of drawing a known volume of air through paper treated with lead acetate. The presence of hydrogen sulphide is indicated by a brownish staining of the test paper, and the degree of concentration of the gas can be gauged by comparison with a colour chart. The leaflet is obtainable from H.M. Stationery Office (price 3s. 6d. net).

BRITISH ORTHOPAEDIC ASSOCIATION

SPRING MEETING

The British Orthopaedic Association, under the presidency of Mr. W. R. BRISTOW, held its spring meeting in May in Copenhagen and Stockholm. The party consisted of some sixty members and their ladies.

Proceedings in Copenhagen

Three days were spent in Copenhagen, of which two were devoted to visiting the new Orthopaedic Hospital on the outskirts of the city. An attractive programme was arranged by Dr. Paul Guildal and his colleagues, and consisted of operative demonstrations and presentations of short papers.

Dr. GUILDAL gave an account of the functions of the Danish Orthopaedic Hospital, outlining the origin and progress of the treatment of the crippled child in Denmark. The whole service in Copenhagen was financed by the State, and the medical staff were all salaried officials. In a second paper he discussed the principles and results of the orthopaedic treatment of infantile paralysis. His practice and results corresponded closely with British views on this subject.

Dr. BENTZON advocated the use of drilling osteoclasis in preference to osteotomy, chiefly for the correction of outward curvature of the tibiae due to rickets. Through a small incision multiple drill holes were made in a transverse line at the apex of the deformity. The bone was then broken manually or with an osteoclast. Dr. Bentzon hoped that this simple operation would restore osteoclasis to favour, and suggested that experience would probably show that it had an even wider field of application. He next demonstrated the result of an operation for the treatment of paralysis of the gluteus medius. The insertion of the upper two-thirds of the gluteus maximus was brought upwards and forwards to occupy a true lateral position on the crest of the ilium. The patient whom he showed walked without a trace of limp, and could stand on the affected leg with perfect balance.

Dr. KIAER in the treatment of joint contractures had found infiltration with local anaesthesia of the capsule of the affected joint and active mobilization very helpful. Similar methods could be employed usefully in the treatment of recent sprains and of painful scars. He showed two patients who had been treated for sciatic scoliosis. He had found that immobilization of the lumbo-sacral spine in plaster-of-Paris jackets, applied with the patient suspended or bending forwards, gave the most satisfactory results.

Dr. STAERMOSE said that though *coalitio-calcaneo-naviculare* in many people represented no more than a symptomless anatomical anomaly, yet it was occasionally found in association with spasmodic flat-foot. Excision of the bridge between the two bones and the interposition of part of the muscle belly of the extensor brevis digitorum usually resulted in cure of the peroneal spasm. Dr. FOGED demonstrated the results of operations for torticollis. The most universally satisfactory procedure had been open division of both heads of the sterno-mastoid just above the clavicle, followed by a long period of daily stretching and re-education. Dr. CHIEVITZ gave an account of the geographical distribution of tuberculosis in the Danish population, and discussed the relationship between human and bovine types in surgical lesions.

In a brief symposium on osteo-arthritis of the hip Dr. MORVILLE dealt with the classification of this disease from the clinical and radiological standpoints, while Dr. BERNTSEN described his method of drilling ("forage") the femoral neck and head—the procedure described originally by Graber-Duvernay. It was interesting to hear that very considerable relief of pain had followed

this simple operation in over 60 per cent. of his series of patients suffering from osteo-arthritis of the hip.

Dr. THERKELSEN discussed in great detail the indications for and results of "shelf" operations performed in adult life for congenital subluxations of the hip. In contrast with the experience of British surgeons, Dr. Therkelsen had found the operation satisfactory in relieving pain and increasing the stability of the hip.

The visit ended with a tour of the hospital, which conforms with the modern standards of architectural simplicity, having many small wards containing at the most six beds. The British Orthopaedic Association dinner was held at the Restaurant Nimb, and among the guests were the Danish contingent and their ladies. Numerous social functions included tours in and around the city, a reception at the Yacht Club Pavilion by several of the Danish surgeons, and another at the Town Hall by the City Council of Copenhagen. All were keenly enjoyed by the visitors.

Proceedings in Stockholm

In this city two mornings were spent at the new Karolinska Institutets Orthopediska Klinik Vanföreanstalten, where Professor Waldenström and his colleagues and assistants presented a most stimulating programme.

Professor WALDENSTRÖM showed the results of arthroplasties on various joints, and concerning arthroplasties in general said:

"The treatment is, as we all know, difficult. But the difficulty lies not only in carrying out the operation skilfully, but as much in deciding which cases are suitable for operation. It should be undertaken only on the earnest request of the patient, and only after the surgeon has assured himself that the patient will really get more use from a mobile joint than from his present stiff one. We keep all these patients in hospital for some time before making a decision, not only for the purposes of physical examination but also, and still more important, to get an impression of their mentality and their reaction. The post-operative treatment is painful, and the patient must not only submit to passive movements, but he must also carry out energetic active ones many times each day in spite of pain."

Later he presented some of his views on certain hip conditions of which he has made a life-long study. These included coxa plana (pseudo-coxalgia) and coxa magna-valga-luxans. He attributed the latter to a mild local inflammatory process, possibly tuberculous in some patients, which resulted in overgrowth of the femoral head so that it was no longer contained completely within the acetabulum. The relationship between osteo-arthritis and the congenital and youthfully acquired deformations of the femoral head were discussed. Professor Waldenström also performed the operation which has been most successful in his hands for the treatment of recurrent dislocation of the shoulder—namely, the insertion of an autogenous bone graft into a niche along the anterior margin of the glenoid (Eden-Hybbinette operation).

Dr. FRIBERG read a paper on spondylolisthesis, a condition which was being recognized more frequently in Sweden. When it was causing symptoms he advocated fusion of the slipping vertebral body to the spinal segment immediately distal to it through an abdominal transperitoneal approach. He performed his own modification of this operation on a patient during the course of the meeting.

Dr. KNUTSSON gave a brief but detailed account of the radiological findings in sacralization of the fifth lumbar vertebra. He emphasized that symptoms could arise not only from arthritis in the joint between the sacralized transverse process and the sacrum, but also from arthritis in the smaller intervertebral joints of the lower lumbar segments. Dr. Knutsson demonstrated, too, radiographs of many other interesting bone and joint conditions. The very high standard of radiographic achievement in this clinic was commented on by all the visitors.

Dr. SILFVERSKIOLD described the condition known as chondromalacia patellae and its treatment. He regarded it as the commonest form of derangement of the knee, and believed that the cartilage of the patella was the first in the body to undergo degenerative changes. There were crepitations between the patella and femur on movement, associated with attacks of pain and swelling, and peripatellar tenderness. For mild lesions he advised conservative treatment, and for more advanced ones excision of the damaged cartilage in part or in whole, the raw area being covered with a free fascial graft. About seventy patients had been operated on in this way and the majority had perfect function.

Dr. NILSONNE gave an account and showed some of the results of the operative treatment of infantile or congenital coxa vara. He had performed a wedge osteotomy in the trochanteric region on no less than sixty patients suffering from this condition. His best results were in those patients on whom the osteotomy had been done between the ages of 6 and 8. In these cases successive radiographs showed that the femoral neck had reconstructed itself over a number of years until eventually the hip could not be distinguished from the normal either by clinical or *x*-ray examination. This address and demonstration were among the most impressive seen on the Scandinavian visit and excited much appreciative comment.

Other short papers were read: on the rehabilitation of the cripple, by Miss HOJER; on the syndrome of the scalenus anticus and cervical rib, by Dr. WIBERG; on congenital ulnar deviation of the fingers, by Dr. LUNDBLOM; and on the results of the shelf operation for congenital subluxation of the hip in adults, by Dr. SEVERIN.

A COMMEMORATIVE EVENING

The *Medical Officer* was founded in 1908 as a weekly journal for medical men in the Government and municipal services under the editorship of Captain G. S. Elliston, *M.C.*, now Member of Parliament for Blackburn. It has throughout had the support and collaboration of public health officers. Its editor is a son of the late Dr. W. A. Elliston of Ipswich, President of the British Medical Association in 1900, and a brother of Mr. Guy Elliston, who was Financial Secretary and Business Manager of the Association from 1902 until his death in 1918. The *Medical Officer* reached its 1,500th issue a few weeks ago, and in commemoration of this landmark Captain Elliston gave a dinner party at the House of Commons on July 1 to meet the President and Council of the Society of Medical Officers of Health.

The Registration Act, 1837

The host in welcoming his guests said he had chosen a date of great significance to the public health service. On that day one hundred years ago there had come into force the Act for Registration of Births, Marriages, and Deaths, on which the whole structure of our health services had been based. In the hope of finding evidence of the prescience of Parliament he had looked up the contemporary official reports of the debates on the Registration Bill. Unfortunately the speeches of Lord John Russell, Sir Robert Peel, and others gave no indication that legislators could foresee the ultimate effect of their Acts. The only reference to the public health implications of efficient methods of registration occurred in one short paragraph of the report which had prepared the way for the Bill. Happily Dr. William Farr was appointed under the Act as compiler of abstracts in the office of the Registrar-General, and his brilliant reports on the causes of death soon compelled attention. Liverpool led the way by appointing the first M.O.H. in 1847, and in the following year the City of London secured the great John

Simon. The other big towns quickly followed suit, and by 1856 provincial colleagues had founded the Society of Medical Officers of Health. Two years before this Sir John Simon had become the first Government medical officer; then followed the Public Health Act of 1872, which required each of over 1,400 urban and rural district councils to appoint a medical officer of health and a sanitary inspector. Finally in 1888 Lord Salisbury's Act created county councils with county medical officers. Thus, barely fifty years after the passing of the Registration Act the whole country had been covered with the essential staffing for health administration. With the development of these services and the extension from environmental to personal hygiene the creation of the Ministry of Health followed as a natural consequence in 1919.

Captain Elliston coupled his toast to the Society of Medical Officers of Health with the name of the President, Dr. Ernest Ward, who followed with an entertaining speech. Sir Francis Fremantle, M.P., proposed a toast to the *British Medical Journal* and the *Lancet*, coupling with it the names of Dr. N. G. Horner and Dr. Egbert Morland, and paid a tribute to the work and character of the late Sir Squire Sprigge. Sir Henry Brackenbury offered congratulations and thanks to Captain Elliston on behalf of the British Medical Association, which Sir Henry represents on the Council of the Society of Medical Officers of Health. Dr. James Fenton, president-elect of the Society, proposing a toast to Captain Elliston, spoke of the invaluable services he had given to the cause of public health as secretary of the Society for many years, as member of Parliament, and through the *Medical Officer*.

ROCKEFELLER TRAVELLING FELLOWSHIPS

The Medical Research Council has awarded Rockefeller Fellowships to the following for the academic year 1937–8:

Dermid Lockhart Cameron Bingham, M.B., F.R.C.S.Ed., Clinical Tutor, Surgical Out-patient Department, Royal Infirmary, Edinburgh.

Eric George Lapthorne Bywaters, M.B., Assistant Clinical Pathologist, Middlesex Hospital.

Philip Rainsford Evans, B.Sc., M.B., M.R.C.P., Registrar, Medical Diseases of Children, King's College Hospital, London.

John George Sclater, B.Sc., M.B., M.R.C.P.Ed., Tutor in Clinical Medicine, Royal Infirmary, Edinburgh.

Eric Frank Scowen, M.D., M.R.C.P., Assistant Director, Medical Professorial Unit, St. Bartholomew's Hospital, London.

Charles Herbert Stuart-Harris, M.D., M.R.C.P., Sir Henry Royce Research Fellow in Influenza, London.

Graham William Hayward, M.B., M.R.C.P., Resident Medical Officer, National Hospital for Diseases of the Heart, London.

All the Fellows propose to work at centres in the United States. Dr. Stuart-Harris and Dr. Hayward will hold their fellowships under modified conditions, while receiving emoluments from other sources.

In addition, the Rockefeller Foundation has awarded fellowships, on the recommendation of the Medical Research Council, to the following candidates in the special field of psychiatry, neurology, and related subjects:

Edward William Anderson, M.D., M.R.C.P., Medical Director, Cassel Hospital, Penshurst.

Alexander Kennedy, M.D., M.R.C.P., Assistant Medical Officer, Maudsley Hospital, London.

Alan Sutcliffe Kerr, M.B., F.R.C.S., Surgical Registrar, Royal Infirmary, Liverpool.

Denis John Williams, B.Sc., M.D., M.R.C.P., Resident Medical Officer, Hospital for Nervous Diseases, Maida Vale, London.

Alexander Francis Rawdon-Smith, Ph.D., Senior Student, Royal Commissioners for the Exhibition of 1851, working in the Psychological Laboratory, University of Cambridge.

Dr. Anderson proposes to work in Germany, the others at centres in the United States. Dr. Rawdon-Smith will hold his fellowship for six months only.

Reports of Societies

INFLUENCE OF EMOTIONS ON BODILY FUNCTIONS

At a meeting of the Section of Psychiatry of the Royal Society of Medicine on June 29, with Dr. T. A. Ross presiding, Dr. ERICH WITTKOWER of Berlin read a paper on "The Influence of the Emotions on Bodily Functions."

Dr. Wittkower said that the problem of psychosomatic interrelationships could be approached along various paths: his own investigations had been made along two—namely, the study of psychoneurosis linked to organs and the experimental production of psychical alterations and observations of the effect in the physical sphere. He left on one side changes in respiration and in pulse and blood pressure, as these had been considerably investigated by others. A strong emotional disposition reacted on the respiratory organs, even leading to permanent disorders of respiration. As for blood pressure, in pleasurable emotion the blood accumulated in the brain and at the periphery, and in painful emotion in the abdominal organs. His own experimental researches, carried out mainly under hypnosis, had been directed to fluctuations in the size of the heart as seen by *x* rays. The heart in common speech was supposed to be the seat of the emotions; persons were said to be soft-hearted, and cases of "broken heart" were recorded. The wife of one of his colleagues suffered from heart attacks during matrimonial arguments, and on one occasion her husband took an *x*-ray picture of her heart during an argument and found it distinctly smaller than normal. In other persons an enlargement of more than 1 cm. in diameter had been recorded.

Salivary and Gastric Secretion

Changes in salivary secretion, Dr. Wittkower continued, had been found in the particular person to be independent of the type of emotion experienced. Whether the emotions were pleasurable or painful the secretion would be found in one person to increase and in another to diminish. The influence of emotion on gastric secretion had been repeatedly investigated as to changes in acidity and quantity and emptying time of the stomach. Here again different emotions in the same subject always caused uniform changes. One subject to every kind of emotion reacted with hyperacidity, another with hypoacidity, one with a diminution and another with an increase of secretion. The form of reaction seemed to be typologically determined. He had come across certain cases in which there was a family tendency to diarrhoea on the occurrence of any nervous upset. He showed a family tree of twenty-eight persons of whom six suffered from "emotional diarrhoea." He mentioned another case in which an intense gastroptosis disappeared under psychological treatment (the case turned upon the rectification of a sexual difficulty).

Most emotions had a stimulating effect on bile secretion, but during annoyance the flow of bile was inhibited. He had an impression that the bile produced during joyous emotion was specially light in colour. Psychological factors might perhaps assist the onset of jaundice and even of gall-stones.

Urine Secretion

In some of the subjects examined under hypnosis no changes in the composition of the urine could be found in spite of strong emotion being provoked. In subjects in whom changes occurred these generally related most distinctly to quantity, total nitrogen content, and content of uric acid. In some cases a remarkable uric acid storage seemed to take place. A glance at an excited

person suggested a faint reflection of some of the signs seen in Graves's disease—protrusion of the eyes, palpitation, perspiration, and tremors. That the basal metabolism rose during emotion had been well shown, and a rise of blood-iodine content to values such as otherwise were only known in Graves's disease had been recorded.

Finally Dr. Wittkower described an attempt to make use of the psychogalvanic phenomenon in the affect-psychology of the healthy and of neurotics. This short review of the influence of emotions on bodily processes was bound to be incomplete. Emotion caused or was accompanied by a real disturbance of every bodily function, and emotional stress might therefore lead to serious disturbances and eventually to definite organic changes.

General Discussion

Dr. T. A. ROSS, from the chair, said that again and again patients were sent to the psychiatrist with the statement that, among other things, they were suffering from high blood pressure, but in fact on careful examination such high pressure was seldom found. The truth was that the doctor undertaking the first examination had upset the patient, leaving him in a state of doubt about certain things, and in that condition had taken his blood pressure, and inwardly thanked God that at last he had found a physical sign! It was interesting to learn that the reaction of the saliva and of the gastric secretion was the same for the individual—different for different individuals but not for different emotions in the same individual. If the history of these people were investigated it might be found that the direction of the reaction depended upon some accidental circumstance the first time it took place, and thereafter a repetition of any emotion caused the same type of phenomena to appear. The effect on the stomach had been a matter of age-long controversy. There were those who maintained that most indigestions were emotional; and, considering how many people were comparatively easily cured of dyspepsia by psychotherapy, it looked as if in large numbers of people dyspepsia was a neurosis. Some German work, based on *x*-ray observation, had contradicted this view, and had upheld the idea that the condition was a form of gastritis, but he noted that Alvarez, gastrologist to the Mayo Clinic, who began as a strong organistic physician, now said quite definitely that after twenty or thirty years of observation on the stomach he had come to the conclusion that cholecystitis was the commonest organic cause of dyspepsia, but that the commonest of all causes of dyspepsia was neurosis. Finally the speaker reminded his audience of the significant description in the Fifth Voyage of Sinbad the Sailor, how, when the ship on which he sailed was dashed to pieces, "the captain fell on the deck and tore his beard and his hair, and his gall-bladder was swollen with rage and with mortification"!

Dr. C. P. BLACKER asked how many patients were used by Dr. Wittkower in these experiments, whether they were selected as being patients in hospital or students or friends of the investigators, and what precautions were taken to ensure that they were normal members of the population. How were the emotions induced under hypnosis? Had he any standard technique for producing them? Did he detect any significant difference in the reactions of the patients according to age or sex? Dr. TRAVERS SMITH was surprised at the finding that the individual reacted in much the same way to different types of emotional stimulus. Might that be accounted for by the fact that anxiety was common to so many emotions? It would be interesting to know how far the experiment itself caused the emotion.

Professor DAVID SLIGHT pointed out some of the difficulties in such experiments—for example, the difficulty of getting adequate measures of registration, the difficulty of getting adequate controls, and the difficulty of inducing specific emotions experimentally. In some experiments in which he was concerned ten or eleven years ago in endeavouring to see how the effect of emotion could be recorded on the electrocardiogram he and those working with him had to confess that they could get very few changes at all. Their results were negative. As for the usefulness of the psychogalvanic phenomenon, this reflex or skin response was certainly an index of change in the emotional system, but unfortunately it was almost too sensitive, and his own results in this field had been very limited.

Dr. WILLIAM HEWETSON suggested that the greater prevalence of gastric ulcer at the present time was due to excessive worry and excessive use of tobacco. It was the long-distance effects which should be studied. Dr. RALPH NOBLE asked whether the opener had observed any relationship between emotional phenomena and blood disorders, even to the extent of pernicious anaemia. Recently he had seen a number of cases of neurotic patients who were suffering from that condition. Dr. D. N. HARDCASTLE had noticed that in the family tree shown by Dr. Wittkower the six persons who suffered from "emotional diarrhoea" were all females. Was there any difference between the sexes in this respect?

Dr. GERALD RUDOLF referred to certain cases some years ago in which he had injected adrenaline in large doses, and it was a common finding that from seven to fifteen minutes after the adrenaline had been used under the skin a sensation of fear developed. He thought there might be a link between the *p*H of the blood and the excessive secretion in the stomach. Dr. CLEMENT CHESTERMAN said that he had been working among the primitive Bantus in Africa, where emotions were quickly exteriorized. Among these people gastric or duodenal ulcer was extremely rare, and he had never come across a case of Graves's disease except in people who had had syphilis and suffered from hypertension. He had diagnosed one or two cases of diabetes which one was tempted to believe had some relation to an unstable nervous system.

Dr. LETITIA FAIRFIELD had noticed in a certain class of persons a difference in the incidence of nervous breakdown as between the sexes. Both male and female in a certain occupation were subjected to very much the same emotional strain, but breakdowns among the women of this class were very much more common, and it was suggested that the reason was that the men, when annoyed, could discharge their nervous energy by violent language or act, whereas convention forbade such a recourse in the case of the women. She wondered whether Dr. Wittkower had made any observations on a condition closely connected with neurosis—namely, hyperemesis gravidarum. Nowadays one never heard of neurosis in this connexion, but only of albuminuria and other disturbances of pregnancy. Might not the pendulum have swung too far?

Dr. MARGARET LOWENFELD said that it was very striking to note how frequently certain organic conditions in children were associated with extreme inhibition of emotion, but when, on treatment, emotion was released the physical symptoms diminished. She recalled a boy who, according to his mother, had never passed a solid motion. This intense fluidity of the intestinal contents was found to be associated with fear—a very mixed and confused fear in his own mind, of a sexual character. Without the use of any drugs or change of diet the release of the emotion and its expression in certain tangible forms was accompanied *pari passu* with a solidification of the bowel content. Another child had persistent constipation; this was a very shy and timid child, and well-directed psychological treatment, the encouragement of a frank expression, and direct discharge of emotion resulted in the steady clearing up of the condition. Another child of 5 had had an almost uninterrupted stay in hospital with one infectious disease after another, with intervals of bronchitis and dyspepsia. The child was thin, debilitated, completely inhibited, suggestive of a moron, but after a period of play treatment for eighteen months

she had attained normality in weight, general appearance, and expression.

Dr. WITTKOWER, in reply, said that his experiments had been carried out over a period of ten years, and of course the subjects were changed from time to time. The subjects were either patients who had been successfully treated or they were students. It was quite easy to produce emotions under hypnosis. Knowing the history of these people he could produce a specific effect of joy or grief. A considerable increase in the leucocyte count was found under emotional influence. He had had no experience of hyperemesis gravidarum, and in this and in other respects he was fully aware that his findings were incomplete, but he would have the opportunity to continue his studies at the Tavistock Clinic.

BLACKWATER FEVER

A meeting of the Royal Society of Tropical Medicine and Hygiene was held at Manson House on June 17, with the new president, Colonel S. P. JAMES, F.R.S., in the chair. A conjoint paper on blackwater fever in Macedonia was presented by Mr. HENRY FOY and Dr. A. KONDI, and this was followed by one by Dr. N. HAMILTON FAIRLEY and Mr. R. J. BROMFIELD on pseudo-methaemoglobin in blackwater fever and its clinical significance.

Blackwater Fever in Macedonia

Mr. Henry Foy stated that during five years' work in Greece he and Dr. A. Kondi had investigated some 450 cases of blackwater fever in the laboratory. These cases were drawn from the Refugee and Municipal Hospitals in Salonika, the villages and towns in the Plains of Drama and Chrysoupolis, and from Northern Peloponnesus. The disease was particularly prevalent in the Vardar plain and the Struma valleys. When it was remembered that probably not more than 20 to 25 per cent. of cases reached hospital, the magnitude of the problem was evident. From 1923 to 1935 the average monthly admissions of malaria had been 1,779, and for blackwater fever 58.7. Blackwater fever was most frequent from September to January. The two-monthly lag that had already been observed by other workers was present in Macedonia, for the peak of blackwater fever appeared in November, and that for malaria in September and October. Throughout the period the percentage of malaria that was blackwater averaged 3.297. The low incidence of blackwater fever and malaria in 1923 and 1924 was no doubt related to the immigration of large numbers of non-immune refugees from Asia Minor in those years.

As a result of mathematical analysis of the available data, Mr. Foy said, it was perfectly clear from their regression equation that (1) the number of blackwater fever cases in any one year was quite independent of the number of malaria cases either in the previous year or the previous two years; (2) in a population that had already been exposed to malaria for one or two years the number of cases of blackwater fever was significantly correlated with the number of malaria cases of the same year; (3) this correlation did not appear to hold in an unsensitized population, no matter how severe the malaria. Another point which emerged from their figures was that the susceptibility of the population of Macedonia to blackwater fever had been increasing with time, although somewhat irregularly, and that it was gradually working towards an upper asymptote, when the "blackwater-producing capacity" of malaria would become stable. Regarding the parasite rate in blackwater, they had found approximately 40 per cent. of their cases positive, taking as their criterion any case showing parasites up to within fifteen days after the first passage of black urine. The rate was no doubt low on account of the large number of cases that took quinine just before the attack. The positives among 360 cases were 47 per cent. *Plasmodium falciparum* and 33 per cent. *P. vivax*; the remaining 20 per cent. were either quartan or mixed. Ruling out quartan as a producer of blackwater fever and compensating for the improved diagnosis of subtertian malaria, their figures indicated that *P. vivax* and *P. falciparum* were both producers of blackwater fever, and that, contrary to accepted teaching, *P. vivax* was the more potent. This conclusion was consistent both with the regression coefficients which they had found and with the actual parasite rate.

Pseudo-methaemoglobin in Blackwater Fever

Dr. Hamilton Fairley said that in 1934, in conjunction with Mr. R. J. Bromfield, he had described a new blood pigment encountered in the plasma of a severe case of blackwater fever in London, and that a year later they had demonstrated it in another similar case. In November, 1936, under a grant from the London School of Hygiene and Tropical Medicine, they went to Salonika, where Mr. Henry Foy generously afforded them laboratory and clinical facilities for the investigation of this problem. Some twenty-five cases of blackwater fever were personally investigated in hospitals in Salonika and adjacent villages during a period of six weeks, which illustrated the unique potentialities in Macedonia for the study of this disease.

As a routine procedure the plasma and urine were examined on a Hartridge spectroscope set against artificially produced methaemoglobin, and the effects of treatment with Stokes's reagent, ammonium sulphide (10 per cent.), and hydrogen peroxide (10 vols.) were noted. All these reagents dispersed the α band of true methaemoglobin, but not that of the new pigment. In special cases the effect of treatment with sodium hydrosulphite was also determined.

Fourteen cases were investigated in detail. The plasma contained oxyhaemoglobin alone in two mild cases, new pigment alone in two severe cases seen on the third and sixth days respectively, and new pigment and oxyhaemoglobin in the remaining ten. In not a single instance was methaemoglobin demonstrated. From these findings it was evident that all previous workers who had described methaemoglobinaemia in blackwater had really been observing the new pigment, for which the name pseudo-methaemoglobin was now suggested. The urine, on the other hand, never contained pseudo-methaemoglobin in demonstrable quantity. Oxyhaemoglobin was found alone in two instances, and in association with methaemoglobin in ten others; in the two remaining cases the urine contained no blood pigments, though pseudo-methaemoglobin was in the plasma. All available data indicated that, unlike oxyhaemoglobin, the new pigment was a non-threshold substance for the kidney, and that urinary methaemoglobin was derived from oxyhaemoglobin only during or after its passage through the tubules.

The formation of methaemoglobin in sterile blood or haemoglobin solution stored under ordinary conditions or after incubation at 37°–55° C. had long been recognized. To ascertain whether the new pigment could be produced *in vitro*, 4 vols. of sterile plasma from blackwater fever patients were incubated at 37°–40° C. for forty-eight hours with 1 vol. of a concentrated solution of haemoglobin prepared under aseptic conditions from laked corpuscles. Pseudo-methaemoglobin was invariably produced. But, contrary to expectations, when normal plasma was used as a control the new pigment and not methaemoglobin appeared. Pseudo-methaemoglobin was also formed when a solution of artificially prepared methaemoglobin or sulphaemoglobin was incubated with plasma at 37°–40° C. for forty-eight hours. On incubating a solution of oxyhaemoglobin alone, methaemoglobin was invariably formed. These experiments proved that plasma had the power of converting extracorpuscular haemoglobin, methaemoglobin, or sulphaemoglobin into the new pigment when incubated under appropriate conditions.

Pseudo-methaemoglobin contained trivalent iron, and, like methaemoglobin, could not function as a respiratory pigment. It produced a brown-coloured plasma, but was never found within the corpuscles and did not appear in the urine in demonstrable quantity. Its production from extracorpuscular circulating oxyhaemoglobin was a conservative action on the part of the body, since the kidneys were protected from the blockage of the tubules which resulted from the elimination of oxyhaemoglobin in acid

urine. Its formation appeared to be the first stage in a process by which the body disposed of circulating extracorpuscular pigment, and the formation of pseudo-methaemoglobin might be anticipated in any intravascular haemolysis of sufficient magnitude and duration. Since 1864, when Hoppe-Seyler first described methaemoglobin, this pigment had escaped recognition through being consistently confused with methaemoglobin. For this reason the name "pseudo-methaemoglobin" appeared a not inappropriate one.

Discussion

Sir RICKARD CHRISTOPHERS said that both papers broke much new ground. The remarkable figures which Mr. Foy presented regarding the monthly incidence of the disease in Macedonia made this an ideal place to investigate the blackwater fever problem. The new pigment must be of considerable practical importance, and it was of special interest in blackwater as its presence and spectroscopic insensitiveness accounted for the underestimation by previous workers of the total amount of blood destroyed. It, however, threw no new light on the cause of the haemolysis. To the European blackwater fever was the most important of tropical diseases. It gave to Africa the name of "the white man's grave," and prevented the colonization of new areas and many commercial and economic projects.

Professor WARRINGTON YORKE pointed out that the death rate from blackwater fever in Rhodesia had shown no improvement since 1900. Dr. Fairley had explained that evening something which had been very puzzling to himself and all other workers—namely, why the oxyhaemoglobin in the plasma was so small in amount. The speaker had proved that only 10 per cent. of the blood destroyed was eliminated through the kidneys. This, according to Dr. Fairley, was due to the transformation of oxyhaemoglobin into pseudo-methaemoglobin, which was not secreted by the kidney. In other diseases, like babesia, there was much more free oxyhaemoglobin in the plasma than in blackwater fever, and he wondered whether previous hypertrophy of the reticulo-endothelial system might account for the discrepancy. In association with Norris he had also produced evidence that oxyhaemoglobin was secreted by the tubules rather than as a transudate through the glomeruli. He agreed with everything Sir Rickard Christophers had said regarding the importance of blackwater fever in the Tropics, and hoped that every encouragement would be given to Dr. Fairley and Mr. Foy to prosecute their studies in Macedonia.

Professor DE KOCH discussed the allied problem of epizootic icterus in sheep in South Africa. The aetiology was obscure, but the disease was associated with methaemoglobinuria and great blood destruction. Peculiar pigment reticulum cells were found in different organs, and the liver contained a higher percentage of copper than normal. Dr. C. C. CHESTERMAN asked Mr. Foy if quartan malaria in some way gave immunity to blackwater, and whether in his cases of *P. vivax* infection he was not dealing with mixed infections. Major J. S. K. BOYD stated that in his experience in Macedonia during the war every case among the British troops was potentially one of mixed infection. Although one species might be demonstrable in the blood at the time of haemoglobinuria, both parasites had at some time been present.

In reply, Mr. FOY said he could not explain the absence of quartan parasites, but the findings were equally negative whether splenic smears or peripheral blood were examined. Their experience had been that before the onset of blackwater fever the spleen was not loaded with malaria parasites. The parasite rate itself was of little significance in blackwater since it depended on the time and amount of quinine taken prior to onset, the degree of haemolysis as measured by red cell counts, and the interval between the onset of haemoglobinuria and collecting the blood.

Dr. HAMILTON FAIRLEY, in reply, stated that pseudo-methaemoglobin had nothing whatever to do with the fundamental cause of haemolysis in blackwater fever, though it did throw light on subsequent events once haemolysis started. He did not share Professor Yorke's pessimism that nothing could be done therapeutically in blackwater fever. Their clinical and pathological studies in London and Macedonia revealed two types of patient: one dying of anaemia with polyuria and adequately functioning kidneys, the other succumbing to anuria and uraemia. The former could be saved by multiple blood transfusions. Alkalization of the urine was a rational procedure, and the work on pseudo-methaemoglobinaemia entirely supported the experimental findings of Baker and Dodds that methaemoglobin was produced in the tubules, and that there was less "silting-up" effect in the presence of an alkaline urine. In incompatible blood transfusion a pigment occurred with an alpha band in the red spectrum resembling that of methaemoglobin. As a result of *in vitro* experiments he predicted that this pigment would prove to be pseudo-methaemoglobin.

Local News

ENGLAND AND WALES

Medical Art Society

This year's exhibition of the Medical Art Society, held at the Royal Society of Medicine, 1, Wimpole Street, is one more example of the versatility of the medical profession. The general level of the work is very high, but on the whole the water-colours are perhaps the most successful. "Farm Track, Breconshire," by J. F. Robinson, is a very pleasing snow picture, and "A Study of Trees" by the same artist also well repays study. John Hay shows great ability in handling colour and design in "The Cheviots, near Wooler" in oil, and "The Copper Beech" and "St. Ives" in water-colour. "The Chalk Bank" by Charles Pannett is pure in colour and good in drawing and design. R. Hallam shows three lively and amusing sepia sketches: "The Orchestra," "Flower Sellers," and "The Discussion." The pencil sketch "The Lone Tree in Norway" by Humphrey Neame is delicate and decorative. Among many other charming water-colours are "Marram Hills, Norfolk" by E. B. Waggett, "Morston Staithe" by Henry Wilson, "Railroad, New Forest" by Dorothy Hare, "Straits of Messina from Taormina" and "Bou Sada, Algeria" by R. Foster Moore, and "Allotments in Winter" by H. B. Maitland. "Sable Antelope" (tempera) by A. C. Dalzell is a good piece of design. We see here in this exhibition further proof of the versatility of the late Sir Squire Sprigge in his four charming water-colours "Golden Spring," "The Pond," "New Forest Trees," and "Mountain Spring near Bad Gastein." Among the oil paintings "Ship in Distress, Tintagel" is a wonderful representation by A. S. Cobbledick of a storm off the coast of Cornwall. Special attention should also be drawn to the two pictures painted at Walberswick by John Rammell; to "Punta Espada, Pyrenees, Cataluna" by John Rammell; to "Reflected Ramparts, Marra Kech" and "An Olive Grove" by Helena Wright; to "Kingston Harbour, Jamaica" by Leonard Colebrook; and to the "Landscape with Figures" and "Old Village Road, Belgium" by Allan Beale Hewlett. There are also several successful portraits by A. S. Cobbledick, H. Elliott Blake, R. V. B. Emmons, and H. B. Maitland. Among the flower paintings are two delightful screens by Sir Leonard Hill; Emanuel Miller's "Flower Piece" is very successful, and so are the chrysanthemums by W. Wilson and the Christmas roses by Cuthbert Lockyer. There is also some interesting sculpture; the standing figure by L. Spira is virile and

well balanced, and the plaster casts "Rest" and "The Diver" by E. S. Tait are rhythmical and pleasing. The flower studies by Arthur Edmunds in silver filigree and enamel are most decorative. The exhibition will remain open each day (Saturdays excepted) from 12 noon to 6.30 p.m. until July 14. Admission is free without ticket.

University of Durham Centenary

The centenary celebrations of the University of Durham, postponed from 1932, were held last week at Durham and Newcastle-upon-Tyne. Former students from various parts of the country spent the morning of Thursday, July 1, in visiting the Castle and the College at Durham, and at noon attended a service in the Cathedral, at which the Bishop, Dr. Hensley Henson, was the preacher. In the afternoon the honorary degree of D.C.L. was conferred by the Chancellor, Lord Londonderry, on a number of distinguished men, including Sir Cuthbert Wallace, Bt., President of the Royal College of Surgeons of England. Luncheon parties were held in the great hall of University College, with the Vice-Chancellor, Sir Robert Bolam, in the chair, and at the Town Hall, where Lord Londonderry took the chair as Mayor of Durham. On Friday, July 2, the celebrations were continued in Newcastle at the College of Medicine and Armstrong College.

St. Mary's Hospitals, Manchester

In the report for 1935 of the maternity department of St. Mary's Hospitals, Manchester, Dr. E. A. Gerrard analyses 3,294 cases attended during the year. In-patients numbered 2,374, and 920 patients were delivered in their own homes. There were thirty-one maternal deaths, eight in "booked" cases and twenty-three among the emergency cases, representing a mortality of 0.76 per cent. of the total in-patients, while the mortality in all "booked" deliveries, including the "district" cases, was 0.4 per cent. The morbidity rate, estimated by the British Medical Association standard, was 5.9 in "booked" cases and 7.6 in emergencies. Of the 157 cases showing puerperal morbidity, forty-three had Caesarean section and thirty-eight had normal labours. The cause of the morbidity was puerperal sepsis in no less than 101 of these cases. The maternal mortality in 112 breech deliveries was 1.6 per cent. and the foetal mortality was 41 per cent. Corresponding figures for sixty-two cases of placenta praevia were 6.3 and 33.8 per cent. Of 234 cases of abortion, the process was incomplete in 102, inevitable in seventy-seven, and therapeutic in forty-four. In these last cases abortion was induced on account of phthisis in thirteen cases and cardiac insufficiency in seven. Classical Caesarean section was performed in sixty-five cases, and the lower segment operation in seventy-seven cases.

One of the aims of the British Health Resorts Association is to make more widely known the medical climatology of British coast resorts, and in pursuance of this aim a special chapter on climatology by a recognized expert is included in the latest (1937) edition of *British Health Resorts*, the association's handbook. In reply to questionaries issued in 1935 and 1936 the Association has collected some interesting reports on the "invalids winter" on the coast, and from these a valuable analysis of the atmospheric conditions from month to month has been prepared. The handbook also includes a synopsis of the attractions afforded by British resorts during the "invalids winter." To the section dealing with health resorts in the Dominions and Colonies has been added information concerning the island of Cyprus. The whole of the material has been carefully revised by an expert subcommittee of the association. Altogether a most valuable handbook which no medical man can afford to be without.

Correspondence

Tubo-uterine Implantation for Sterility

SIR,—I have read with interest Mr. Green-Armytage's excellent paper in the *Journal* of July 3 (p. 6) on tubo-ovarian implantation, and I thank him for his handsome reference to my work.

I began to do the operation in 1921, and naturally have changed my technique from time to time since then. Latterly I have adopted a method which, I think, renders the passage of silkworm gut down the implanted tubes unnecessary. It has been urged against tubo-uterine implantation that the new internal ostia do not remain patent, and, having regard to the small calibre of the isthmic segments, it is obvious that very little would be required to close them. The placing of strands of silkworm gut in the implanted tubes is done to prevent this. The ampullary segments of the tubes, on the other hand, have a much larger calibre, and post-operative closure of the new internal ostia is much less likely if, after cutting away the whole of the isthmic segments, these segments be implanted. This is what I have been doing for some time now.

It raises the question, For what purpose does Nature form the isthmic segments? Why do the ova have to traverse such long and narrow passages? It may be suggested that the purpose is to delay the entry of the fertilized egg-cell into the uterus until the capsule that envelops the early cell divisions has disappeared and the cell mass is free to attack the surface of the endometrium. If this was so, then an egg-cell that entered the uterus too soon after fertilization would fail to graft. The many recorded cases in which intra-uterine pregnancy has occurred after removal of both tubes down to the uterine cornua directly negative this, while primary ovarian gestation shows that for the purpose of pregnancy it is not necessary for the egg-cell to traverse the tube at all. It is believed that ordinarily the sperm blends with the egg-cell in the tube. Whether blending ever occurs in the uterus, or, occurring there, is followed by grafting, is unknown; but the cases to which I have referred suggest that it may very well happen.

Of the various causes that bring about blockage of the tubes there is one that is of particular importance in this connexion—namely, congenital impatency. These cases are far from uncommon, and in most of them (but not all) the uterus is smaller than normal. It is often described as "infantile," and the patient's sterility is ascribed to her small uterus—the fact being forgotten that pregnancy can occur in the far smaller Fallopian tube. The real cause of the sterility in these cases is a congenital lack of patency of the tubes, which an operation reveals to extend along the whole length of the abnormally thin isthmic segments. In such patients the surgeon *has* to implant the ampullae, as he also has to do in those cases in which a previous salpingitis has produced the same condition.—I am, etc.,

London, W.1, July 3. VICTOR BONNEY.

Present-day Methods of Sterilizing Dressings

SIR,—Dr. M. J. Oliver, in his letter published in the *Journal* of May 22 (p. 1089), confirms my opinion that the process of dressing sterilization leaves much to be desired. My impression is that manufacturers are aware of the facts and literature quoted by Dr. Oliver. They

lay great stress on the preliminary expulsion of air before exposing the dressings to steam, and presumably design sterilizers accordingly. The Grampian Engineering Co., Stirling, issue an interesting booklet containing the conclusions of most of the workers mentioned by Dr. Oliver.

My experiments were conducted on sterilizers of first-class make, with the object of proving their efficiency according to a bacteriological standard, which may possibly be regarded as too high, and when using them in accordance with the manufacturers' instructions. After verbal conversation with the manufacturers, and after reading their literature, I accepted the fact that all air was expelled providing the instructions were followed. Five sterilizers were tested by control tubes and were found to be inefficient. Four were tested with the electric control, and only one—of Indian manufacture—was found to be efficient. (Group IV Exp. Vacuum Hospital B.) The publication of all the experiments was curtailed owing to lack of space.

If it is accepted that the discrepancies in these experiments and in those of other observers are due to air contained in the dressings, it is clear that: (1) either the sterilizers tested are inefficient or the working instructions are incorrect; (2) my statement that the electric control provides absolute safety is incorrect, as under the above conditions it could only indicate when the temperature reaches 115° C.; (3) the conclusions to be drawn from the experiments made are worse than at first thought. As dressing sterilization is carried out in a closed machine, and as there are so many pitfalls in the technique, I suggest that it is logical to ask for proof that the contained air in dressings is driven off, and that steam penetrates through the contents of the dressing containers. Until this is done we cannot accept the process as satisfactory.

Dr. Oliver points out an error in my statement "dry, saturated, or moist steam." Through an error in typing commas have been inserted after "dry" and "saturated." —I am, etc.,

S. N. HAYES,
Major, I.M.S.

Kashmir, June 18.

The History of Surgery

SIR,—Although it is as true to-day as in 1894, as Osler then stated, that "we are even impatient of those who would recall the past and would insist upon the importance of its recognition as a factor in our lives, impatient as we are of everything save the present with its prospects, the future with its possibilities," it is equally true that "in a continual remembrance of a glorious past, individuals and nations find their noblest inspiration." It is perturbing, therefore, to one who is an examiner in several universities to find that many candidates for degrees in surgery lack the barest knowledge of those members of the mighty dead who have made the great contributions to their subject. Candidates who successfully ligature the femoral artery in Hunter's canal when called upon to do so, and who show an accurate knowledge of the surgical anatomy, not infrequently lack all knowledge of who Hunter was, and, incredible though it may seem, I have even met students to whom Lister's name was a blank. The sad thing is that to such men there can be little or no romance in their subject. The fault appears to lie early on in the student's career. In the amassing of a wealth of detailed knowledge of anatomy and physiology and related subjects he may well lack the time and energy to pursue independent investigations as to what manner of men were the contributors whose names are mentioned in his textbooks. The foramen of Magendie, Poupart's ligament, the bundle of Vicq d'Azyr, are to him a foramen, a ligament, and a strand of nerve fibres respectively.

"A primrose by a river's brim,
A yellow primrose was to him,
And it was nothing more."

If, however, the writers of his early textbooks would only publish, however briefly, a few small-type footnotes referring where they appear in the text to the men whose names are household words, the student would, I believe, be helped not only by the addition of some human interest to what may possibly be dry-as-dust material, but also by the production of an association of ideas which would assist his memory of detail.—I am, etc.,

LAMBERT ROGERS.

Cardiff, July 1.

Technique in Knee-joint Operations

SIR,—It would be nice to know whether skin towels are a shibboleth or a sheet-anchor. Perhaps the question is best viewed from three aspects: (1) their efficacy in preventing inoculation of the subcutaneous fat with subepithelial organisms; (2) their efficacy in preventing contact between gloves, instruments, and suture material with the skin surrounding the operation wound; (3) the duration of surface sterilization resulting from preparatory dressings.

In a previous communication I suggested that they were not only useless but positively dangerous, inasmuch as they rapidly become damp and smear organisms into the deeper parts of the wound. I advocated as a substitute the antiseptic method which I learned from Mr. Naughton Dunn, and which he still practises, according to his letter in the *Journal* of July 3 (p. 34). The second aspect presumably depends on the duration of the operation, the permeability of the skin towels, the dexterity of the operator, as well as on the particular method of preparation used for the skin. The third point has probably been investigated, but I have no references.

There are two ways in which the question might be settled: (1) by comparison of operative results done by different methods (Cotton's "end-result idea"—see preface to his book, *The Shoulder*—points the way, but in our present unenlightened state we have no figures); (2) by experimental bacteriological work carried out during routine operations under different conditions.

Mr. Blundell Bankart, in your issue of June 12 (p. 1227), does not follow either method, but presents his opinions as facts. He assumes that stitch abscess must always be due to infected catgut, and that the infection occurs from the skin. I submit that both these are unproved, since catgut can be infected in many ways and a sterile abscess may even result from over-hardened suture material. His second assumption—that because I advocate a different technique I must therefore get more stitch abscesses than he does—is charmingly uncharitable. Surely one may give a list of post-operative complications without having one or all of them wished off upon oneself?

I fear that until such time as the "end-result idea" becomes something more than an idea, or until the bacteriologists do some fresh work on this subject, we shall continue to confuse our shibboleths and sheet-anchors.—I am, etc.,

ERIC I. LLOYD.

London, W.1, July 2

Treatment of Rheumatic Conditions

SIR,—From the physiological point of view it is, I think, likely that the movements of stiff and painful joints carried out by the patients themselves but guided by skilled nurses are of more benefit than massage when given after treatment by heat, light, or electricity. A great deal of time and labour can be saved by substituting exercises for massage. The greater benefit of exercises is attested to by a colleague experienced for many years in treatment of rheumatic cases by methods of physical medicine.—I am, etc.,

St. John Clinic and Institute of Physical Medicine, June 30. LEONARD HILL.

Prevention of Constipation

SIR,—I am surprised that the correspondence on the prevention of constipation has not produced any reference to the early initiation of the human body into the pernicious practice of purgation. My own thoughts on the subject were crystallized by an admirable monograph by Dr. L. G. Housden—*The Breast-Fed Baby in General Practice*—a Sir Charles Hastings Prize winner.

Almost every breast-fed baby causes concern during its first few months of existence on account of "constipation"—that is, infrequent bowel motions. The absence of residue in its diet and the frequency of slight underfeeding lead the child to empty its bowel at widely spaced intervals, especially in these days of zealous regimentation, when infants are fed on calories, minutes, and ounces.

When I am told that a healthy breast-fed baby is "constipated" I ask whether the motion is hard or normal. If it is hard I know that purgatives have already been given. If it is normal I explain to the mother that the baby is not constipated, and warn her against any interference with the natural bowel function such as is certain to be urged by her friends. I have many records now of babies who have for a time, often extending up to weaning, had their bowels moved even at such infrequent intervals as a week, and not one has ever had constipation or subsequently developed it. Many of these children have never had a purgative in their lives, and the maternal pride when weaning brings three motions a day is gratifying if amusing. Often the crying of a slightly underfed baby is attributed to the infrequency of the bowel evacuation; purgation follows, and depletes it still further. In an effort to retain its fluids the body extracts more water from the intestine, and true constipation results, and is followed by further purgation.

The old practice of giving babies castor oil even on such flimsy pretexts as to get rid of the meconium is dying out, but there are still attendants who derive great "kudos" from curing icterus neonatorum by means of grey powder. Indeed, almost any excuse to give a purgative is seized, and life-long addiction may result.

The healthy breast-fed baby whose bowels move once a week needs an occasional drink of water and nothing more.—I am, etc.,

Newcastle-upon-Tyne, June 27. FRANK STABLER.

Toxic Focus with Ophthalmic and Dermic Reactions

SIR,—Trying to find an elusive toxic focus is so often tedious and unfruitful, despite the greatest perseverance, that some of your readers may be interested by an account of a successful case in which there were two types of reaction—ophthalmic and dermic. Probably in many of the unsuccessful searches investigations are started when the original focus has already cleared up, though the results of the damage done elsewhere are still evident.

A married woman, aged 32, was first seen by me in June, 1936. In 1911 she had had scarlet fever; in 1919 and in 1926 erythema nodosum of both legs; in 1926 psoriasis on the back, arms, knees, and scalp, which resisted treatment; and in 1932 episcleritis in the right eye.

When I first saw her I found her to be suffering from episcleritis in both eyes and psoriasis on her back, arms, knees, and scalp. She appeared to be in good general health. The episcleritis responded to treatment and cleared up, but at the end of September she developed a fresh attack in the right eye, which improved under treatment before relapsing and developing into scleritis with iritis.

By the middle of October iridocyclitis supervened with a profuse keratitis punctata. These cleared up but left an area of sclerosing keratitis, with vascularization at the corneal margin. During this time she had a slight scleral inflammation of the left eye which responded to treatment and was cured within a few days. Taking into account the history, the prognosis was grave, and serious loss of vision might be anticipated ultimately unless the active focus could be definitely found. All investigations had proved fruitless; the Wassermann reaction was negative.

The condition of the teeth and gums did not arouse suspicion. She had recently attended a dentist, but a further dental opinion suggested that some of the teeth which showed a mild chronic condition might be worth investigation. A tooth was extracted and a culture made from the root and socket. This showed a profuse growth of *Streptococcus viridans*. As part of the routine treatment an autogenous vaccine was given. Further extractions were done; the teeth exhibited apical infection.

No further inflammatory reaction has since occurred in either eye, and the corneal opacities resulting from the sclerosing keratitis are fading. Vision is now full (6/5) in each eye.

The patient has put on weight, and looks very well. The skin conditions, which previously had run a chronic course resisting treatment, are now showing very satisfactory progressive improvement. I feel that sufficient time has elapsed for us to assume that the cause of her troubles was located and eradicated. I am indebted to Dr. Hardy Kingston and to Mr. Jacobs for their help in this case.—I am, etc.,

Bristol, June 30. J. EDWARD MARTIN, Honorary Surgeon, Bristol Eye Dispensary.

Ionization for Hay Fever

SIR,—In the correspondence on this treatment two subjects have been discussed: hay fever, which is seasonal, and paroxysmal rhinorrhoea, which is not. In the former allergy plays the major part; in the latter a less obvious one. For hay fever I have abandoned desensitization for zinc ionization by Mr. Philip Franklin's method. It is simpler, less costly, and more effectual, but it requires meticulous care in application. I have had few failures, and have rarely had to give more than one treatment during the season. But in addition it is always worth while to stop milk during the season and to give calcium gluconate or lactate. Some fibrinous exudate is troublesome for the first few days after treatment, but it is probably this and weakened ciliary action that explains the benefit, the entry of pollen protein into the blood being lessened or prevented. At all events the rhinorrhoea diminishes or disappears, though the eosinophilia may remain high. American writers have imputed permanent ciliary damage to ionization. Such damage I have not seen, though it may conceivably happen from over-treatment. The nose of a doctor treated success-

fully last year was quite normal when he returned for treatment before the beginning of this season.

For paroxysmal rhinorrhoea ionization is mostly futile and the cautery often harmful. The late Dr. Arthur Hutchison of Brighton many years ago sent me a relative, aged about 50, who had been troubled with paroxysmal rhinorrhoea for the great part of her life and had had cauterization and other treatment from himself and colleagues in London. The condition promptly cleared on her taking calcium gluconate. One form of this affection is on the increase since the present vogue of *raw* milk for school children began. This "milk rhinorrhoea" promptly stops with stopping of the milk, and will not stop otherwise. This I have proved over and over again, and it can be verified by anyone who tries it. Whether this is a form of allergy I am not here going to discuss, beyond repeating what I have often said: that while milk is *the* food for babes man is the only animal that takes it after weaning, and that, although it contains no histidine, it is apt, as Koessler and Hanke showed, to promote the formation of histamine in the intestine provided certain coliform bacilli and an acid locus are also present.

Most cases of paroxysmal rhinorrhoea will clear up if four points are observed: (1) milk stopped; (2) an open-air life followed; (3) calcium gluconate or lactate given daily, together with cod-liver oil and malt extract and perhaps parathyroid; (4) a mercurial given weekly. Is there, for some forms of allergy at all events, a better desensitizing agent than a regular blue pill? For, as Mr. Frank Coke hints, whether the antigen is inhaled, as in hay fever, or ingested, as in some forms of vasomotor rhinitis, there is a general condition, a soil, which renders the individual prone to allergy, and the general measures I have indicated help to alter this. The interesting question is left with regard to these nasal affections and to asthma—Why should the respiratory tract be the favourite route for the "excretion" of histamine and eosinophils? —I am, etc.,

Glasgow, July 3. JAMES ADAM.

Excitability

SIR,—Your editorial on the action of acetylcholine on the central nervous system (May 29) requires further notice. Some time ago I collected together in my book *Excitability* the evidence of fact from which one could deduce the laws that govern the natural stimulation of beating hearts, and know their modes of behaviour when so stimulated. Up to that time, it should be noted, physiologists had only investigated the unnatural electrical excitation of cardiac muscle, and that usually in the unnatural state set up by a Stannius ligature. In some medical schools those artificialities still pass muster as the "properties of heart muscle."

In my book I also point out that the reactions of living nervous structures in the body to their natural stimulation were precisely the same as those of beating hearts when stimulated by hormones or drugs. Evidence concerning the latter not then being available, I had to leave matters at the point of formulation of a new doctrine of the inherent rhythmical activity of structures in the living body.

Such ideas were then strongly condemned by your own expert in physiology because they were "in defiance of all the established canons of physiological thought." Undoubtedly they then were. Your editorial indicates, however, that what was then a heresy is now on the way to graceful orthodoxy—a not unusual state of affairs in medicine. I may also mention that some of my predictions concerning how living neurones must act have been brilliantly confirmed by Professor Adrian of Cambridge. I mention that to fortify the opinion that investigators of these matters will not be able to evaluate their facts adequately until they learn how *beating* hearts react to natural stimulation.—I am, etc.,

King George's Medical College, Lucknow, June 20. W. BURRIDGE.

Electromedical Equipment and Radio Interference

SIR,—It has come to my notice that the British Standards Institution has formed a subcommittee for investigating the possibilities of suppressing radio interference due to electromedical equipment. I am not in a position to state what the terms of reference of this subcommittee are, nor do I know of its exact constitution. I have, however, been able to ascertain that although such a body as the British Institute of Radiology is represented the medical profession as such is not.

It seems to me that if the interests of those who employ the apparatus are to be safeguarded the British Medical Association should be represented by two members of the British Medical Association. In my opinion these should be a member of the Physical Medicine group, preferably an electrologist, and a surgeon, again preferably one who is alive to the importance of the application of diathermy in surgery.—I am, etc.,

London, W.1, July 1. PH. BAUWENS.

What is Osteopathy?

SIR,—As my brother, Dr. Kelman Macdonald, is at present in America, and therefore unlikely to see and be able to reply to Sir Ernest Graham-Little's letter in your issue of June 26, I shall be most grateful if, in his absence, you will allow me to reply on this occasion. I would particularly like to point out that I do not want to enter into this discussion on my own account, as the arguments that have been brought up are already sufficiently complicated. I ask to be allowed to reply more particularly in view of the fact that Sir Ernest's letter not only contains one serious misstatement of fact but is otherwise liable to create misunderstanding.

Surely Sir Ernest and his medical colleagues are more concerned with public safety in the future than with "old, unhappy far-off things." It is, therefore, to use his own expression, "idle" for him to go on saying that the British Osteopathic Association gave its "fullest sanction and support" to the British School of Osteopathy—it is surely of greater importance that the B.O.A. is not officially represented on the Governing Board of the School. But it is more than idle, it is positively inaccurate, for him to say that the British Osteopathic Association has not begun to comply with the present Prime Minister's requirement that it should establish reputable educational facilities. Really Sir Ernest, if he is going to indulge in public controversy of this nature, might do his opponents the courtesy of acquainting himself first with the facts.

The British Osteopathic Association examined the position thoroughly in its special College Committee, and in 1935 a limited company was registered called Osteopathic Trusts, charged specifically with the task of establishing a college and hospital which would conform in curriculum and equipment with the requirement referred to by Sir Ernest and with the standards stipulated by the General Council and Register of Osteopaths. This body now employs a full-time official who is engaged on a plan

of campaign, and the profession has further applied itself to the difficult problem of the provision meanwhile of adequate post-graduate training for those osteopaths whose previous training is not held by the General Council of Osteopaths to qualify them for the Register. It surely ill becomes Sir Ernest Graham-Little and those who think with him to taunt us with the accusation of doing nothing when we are merely taking that reasonable care which he has been accustomed to imply has been the distinguishing mark of the orthodox school.

If Sir Ernest cares to read Sir Robert Stanton Woods's presidential address, from which my brother quoted briefly, he will find there that Sir Robert differed strongly from him with regard to at any rate one of the six important schools. I will not take up space by quoting the actual words.—I am, etc.,

London, W.1, June 29. GEORGE MACDONALD.

Air Raid Precautions

SIR,—Dr. Colquhoun's suggestion in the *Journal* of June 26 that there should be established a medical committee to go fully into the measures adopted by the Government to protect the public against the effects of air raids is a good one, for many reasons. It would interest a large section of the medical world in the details of the present air raid precautions scheme; it would refute the destructive criticisms of medical members, many of whom, one feels, have not got first-hand information on the subject, or who, perhaps influenced by pacifist ideals, do not look upon the protection of the lay public in the same light as others do. Further, some constructive help might be forthcoming for those problems in the subject which are as yet unsolved.

I feel that no one is in a position to discuss the question who has not taken out the complete course of lectures. To the medical man whose time is limited I would recommend the concentrated course which is given in the Great Central Hotel, London, once a month in the winter months. It takes place on a Saturday afternoon and all day on Sunday, and in this time the complete series of eight to ten lectures is given by experts, and the difficult points and problems which have been raised by correspondents in this column have all been answered. In many of these letters there is loose thinking and confusion, owing to the subject not being fully understood, and hence the claims of the Government have been exaggerated.

There are three main types of bombs: the high explosive, the incendiary, and the gas bomb. For the first of these there is no guaranteed treatment—either preventive or therapeutic. Diffusion and scattering of the population, so that concentration of casualties cannot take place, is all that is advised. No claims are made by the Government in this direction at all. For the incendiary bomb, which produces a fire that cannot be extinguished, and can only become harmless by being allowed to burn out, the suggestion is made to form a safe surface of sand or clay to allow this to take place rather than provide a suitable inflammatory material to start the whole house on fire. The suggested treatment may not sound infallible, but it is up to the critics to suggest a better rather than to decry what methods have been suggested, and certainly few in the hour of danger would consider the laying of a layer of sand on the floor of the upper room a task of great difficulty.

For the gas attack the gas mask has been proved a protection for all known non-blistering gases, and the protective clothing for these latter. It is suggested that it is an impossible task to train the "whole" general public—this is admitted—but it is no reason to stop training as many as possible. If a nucleus in every crowd were so instructed the knowledge would be quickly disseminated, and the common sense which they possessed would soon act as leaven in the presence of mass panic, which is one of the greatest dangers of gas attack. The problem of the child, the aged, the delicate and ill (for instance, pneumonia), and the mentally deficient is constantly raised as a reason for not instructing the sane and healthy adults. Surely such a section of the community would not be a street problem in the time of a gas attack.

Another point that is raised, that such instruction is productive of a desire for war, is surely not correct. I would say that a total unpreparedness in this country would make a war from the enemy's point of view a much more attractive proposition. One might as well say that the man who goes out with an umbrella and waterproof is asking for trouble, yet many of us know that this is done frequently by those who claim that it is the surest way to ensure a fine day!

If this subject is to be considered fairly and scientifically it must be divorced from the political bias with which many of the letters so far contributed have been tainted. For this reason I think the suggestion of Dr. Colquhoun, that the subject should be considered by a medical committee, is a good one and worthy of consideration.—I am, etc.,

Belfast, June 28. IAN FRASER.

SIR,—Surely some of your correspondents are missing the main point raised by Dr. Leys. He did not suggest that a doctor should refuse to treat air raid casualties or that the general public or the doctors should refuse to wear gas masks where these are available. His protest was directed against the use of the medical profession as an instrument of Government propaganda in what he considered a deliberate deception of the people of this country. This propaganda is designed to keep up the war spirit of the general population by persuading them that they can be protected against wholesale destruction from the air not only by gas but by high explosive and incendiary bombs. In so far as it is successful this diverts the attention of the public from any effort to enforce the removal of the causes of war and from the general ineptitude of European statesmen, whose only refuge seems to be the madhouse of competitive rearmament. Medical men need make no claim to special knowledge of the causes of international unrest, but they are entitled to refuse to be prostituted for political purposes.

It is surely irrelevant to cite the fertility of Asiatics as an argument against Dr. Frewen Moor's contention that poverty in the modern world is not due to lack of goods. The fact remains that the recent world depression was not due to a lack of the primary consumption goods but to a lack of purchasing power for these goods.—I am, etc.,

Rabley Willow, Herts, July 2. DOUGLAS MCCLEAN.

Incidence of Deafness in England and Wales

SIR,—I was much interested in the article on the above subject by Mr. A. G. Wells, which appears in your issue of July 3, and I note that there is a marked difference in the degree of deafness that is recorded by the audiometer and by tests of hearing of the conversational voice.

We are told, for example, that Grade I covers children who can hear and understand conversational voice at

20 feet or over in ordinary classrooms. If we assume that the ordinary conversational voice can be heard at a maximum of 50 feet, to hear it at 20 feet shows a diminution of hearing power of about six decibels, but we are also told that the hearing loss with the pure tone audiometer is thirty-five decibels in this grade. Now a difference of six decibels means that the sound can be heard at half the normal distance and a difference of thirty-five decibels means that the hearing distance is diminished to about one-fiftieth of the normal. We cannot accept both. We can assume that the diminution is thirty-five decibels, and that the hearing of the patient is 2 feet for the conversational voice and that he lip reads; but we cannot assume that the record for the hearing of the voice is correct, for this would mean that the voice employed could be heard at fifty times twenty —that is, one thousand feet—by the normal ear.

It is probable, however, that this discrepancy arises because the patients were not tested with the audiometer in a specially constructed silent room, in which alone the audiometer records are correct. If the tests are carried out with an audiometer in an environment of even minor degrees of noise, the records given by the instrument are very much too high, and in fact are unreliable for assessment of the degree of deafness from which the patient suffers.

I hate to suggest that there is a discrepancy when Mr. Wells has done so much, but audiometer records and the results of voice tests so frequently show similar discrepancies that it would be very valuable if Mr. Wells could clarify this point.—I am, etc.,

London, W.1, July 5. A. LOWNDES YATES.

Obituary

Dr. HORACE SWORDER died on June 18 at Guildford, where he was living in retirement. Born in 1854, he was educated at Epsom College and at St. Mary's Hospital, London, qualifying M.R.C.S.Eng. and L.S.A. in 1875, and L.R.C.P.Lond. in 1877. After holding the usual resident appointments at St. Mary's he entered into partnership with Dr. Grover at his native town of Luton, continuing there in general practice until he retired in 1924. For thirty years Dr. Sworder served Luton, with great acceptance, as a part-time medical officer of health; his yearly reports were stimulating and progressive, always provoking debate and often opposition. The Luton Children's Hospital is his permanent memorial; it was begun, at his suggestion, in 1889 and formed the chief interest of his life. Childless himself, he was passionately devoted to children, sparing no effort in their service. For sixteen years he acted as medical superintendent of the Children's Home, as it was at first called, and for long years after was the driving force behind the sustained efforts needed to ensure its permanent establishment and success. He conceived and organized a Children's Guild of Kindness with its motto, "Live not for Yourselves Alone," which proved invaluable not only by substantially helping the finances of the institution, but also by establishing a habit of giving and of service among the men and women of the future. In late years Dr. Sworder was a member of the court of the Society of Apothecaries. He was a member of the British Medical Association for sixty years, having been elected in 1877, and he played his full part in all its local activities. In 1898 he was president of the South Midland Branch, and in 1907 chairman of the Bedfordshire and Hertfordshire Division.

J. W. B.

Medico-Legal

DAMAGES FOR SHORTENED LIFE

When a person dies as a result of an unlawful act or omission by someone else his representatives may now sue the offender for damages on behalf of the estate. Originally a cause of personal action died with either of the parties to it, but the law was changed by the Law Reform Act, 1934. The change has spread much concern among doctors, whose families may now, as in the case of Connolly *v.* Rubra (*British Medical Journal*, 1936, **2**, 1174; 1937, **1**, 1099) be ordered to pay damages for the negligence of a doctor who has since died. One of the factors which the court takes into account in assessing the damages is the extent to which the expectation of life of the injured person was shortened by the negligence of the offender. The judgement of the House of Lords on appeal in Rose *v.* Ford, which became a leading case as soon as it was tried by Mr. Justice Humphreys in 1935, is therefore directly important to medical men.

The Case of Rose v. Ford

Miss Rose, aged 23, was seriously injured on August 4, 1934, in a road accident for which Mr. B. J. Ford was to blame. On August 6 her right leg was amputated and on August 8 she died from her injury. Her father, Mr. Alfred Rose, as administrator of her estate, claimed damages under the Fatal Accidents Acts, 1846–1908, for the benefit of himself and his wife in respect of the death of his daughter; and also on behalf of his daughter's estate under the Law Reform Act, 1934, to recover such damages as his daughter would have been entitled to at the moment of her death. Mr. Justice Humphreys awarded £300 damages under the Fatal Accidents Acts, and on behalf of the daughter's estate awarded £29 special damages, including funeral expenses, and £500 for pain and suffering and the loss of the leg. He would not award damages for loss of expectation of life, as he considered that the only ground for such damages could be mental suffering caused by the contemplation of early death, and that in the present case no such suffering had been proved.

Mr. Ford appealed against the award of £500 and Mr. Rose cross-appealed asking for damages for loss of expectation of life. The Court of Appeal, on October 28, 1935, reduced the £500 to £22 on the ground that Miss Rose had lived for two days only after the amputation. On the cross-appeal the court agreed that Mr. Justice Humphreys had been wrong in thinking that the ground for damages for loss of expectation of life was mental suffering. Thereafter, however, they disagreed. Lord Justice Slesser and Lord Justice Greene decided that the claim for damages for the shortening of the expectation of life was in substance a claim for the loss of the life and therefore not maintainable under the Law Reform Act, for damages must be calculated without reference to any loss to the estate consequent on the death. Lord Justice Greer disagreed with this decision, holding that the right to such damages vested in the injured person at the moment of injury and survived to the administrator.

Judgement by House of Lords

The House of Lords gave judgement in Mr. Rose's appeal on June 25, 1937. Lord Atkin, the president of the court, referred to the recent case of Flint *v.* Lovell, 1935 K.B. 354, in which the Court of Appeal held that, if a person suffered personal injuries from negligence, the damages could include a sum for the shortening of his normal expectation of life. Mental suffering was not a necessary ground. Shortening of expectation of life had always been a usual element in the assessment of damages for personal injury. He saw a substantial distinction between damages awarded to a living person like Dr. Flint because his life was shortened and damages awarded to a third person because of some other person's death. If a living person could claim damages for loss of expectation of life that right was vested in him in life,

and on his death under the Act of 1934 passed to his personal representatives. Lord Atkin did not see any reason why the fact that the expectation was realized and that death came at the time anticipated or sooner should make any difference. It was not necessary for him to assess the damages, for the Court of Appeal had stated in their judgement that if they were wrong and damages were recoverable, the amount should be £1,000. Lord Atkin therefore expressly left open such questions as whether a rich man's life has greater potentialities of pleasurable enjoyment than a poor man's; or the extent to which physical weaknesses other than those caused by the accident and not affecting the duration of life should be considered; or whether the damages should include a sum for loss of income which the deceased would have received if he had lived a reasonably long time but would not have saved so as to increase his estate. He thought that the award of £1,000 assumed a normal two-legged life, so Mr. Rose could have no more damages for the loss of his daughter's leg. He expressed no opinion whether on another basis of calculation the Court of Appeal would be right in fixing the damages for the loss of the leg for four days only.

It is therefore law that a court may award to the representatives of a deceased person substantial damages for loss of expectation of life, even though the person only lives a few days. The case also illustrates one of the most admirable features of our judicial system, for Mr. Rose, though he sued as a poor person, has been able to appeal successfully to the House of Lords at the expense of the State and of the counsel and solicitors concerned.

The Services

ALEXANDER MEMORIAL PRIZE

Lieut.-Colonel R. F. Bridges, R.A.M.C., has been awarded the Alexander Memorial Prize for the year 1936, consisting of a gold medal and a sum of £40. The prize is awarded annually to an officer of the Royal Army Medical Corps for professional work of outstanding merit.

LEISHMAN MEMORIAL PRIZE

Major A. G. Harsant, O.B.E., R.A.M.C., has been awarded the Leishman Memorial Prize for the year 1936, consisting of a silver medal and a sum of £30. The prize is awarded annually to an officer of the Royal Army Medical Corps, or of the Army Dental Corps, for work of outstanding merit.

NORTH PERSIAN FORCES MEMORIAL MEDAL

R. Lewthwaite, D.M., Colonial Medical Service, has been awarded the North Persian Forces Memorial Medal for the year 1936 for his paper on "The Pathology of Tropical Typhus (rural type) of the Federated Malay States," published in the *Journal of Pathology and Bacteriology*, January, 1936. The medal is awarded annually for the best paper on tropical medicine or hygiene published in any journal during the preceding twelve months by a medical officer, with less than twelve years' service, of the Royal Navy, Royal Army Medical Corps, Royal Air Force, Indian Medical Service, or Colonial Medical Service.

DEATHS IN THE SERVICES

Colonel WILLIAM ALLAN MAY, C.B., late R.A.M.C., died at Bath on May 18, aged 86. He was born at Stoke Damerel on September 18, 1850, was educated at Guy's, and took the L.S.A. in 1873 and the M.R.C.S. in 1874. Entering the Army as surgeon on September 30, 1874, he reached the rank of colonel on March 22, 1903, and retired on September 18, 1907. He served throughout the South African War from 1900 to 1902, when he held the rank temporarily of full colonel while principal medical officer of an infantry division, took part in operations in the Transvaal, the Orange River Colony, and Cape Colony, was present at the actions of Biddulphsberg and Wittebergen, was mentioned in dispatches in the *London Gazette* of April 16, 1901, and received the Queen's medal with three clasps, the King's medal with two clasps, and the C.B. He rejoined for service in the war of 1914–18 immediately it began, from August 6, 1914.

Universities and Colleges

UNIVERSITY OF OXFORD

The following candidates have passed in the examinations indicated:

MATERIA MEDICA AND PHARMACOLOGY.—G. Ashforth, H. M. Balfour, J. T. Burrowes, J. P. Childs, D. H. Davies, R. G. Eager, F. Fulton, A. G. Hardy, S. J. S. Hughes, W. G. J. Hughes, R. M. Lattey, J. A. L. Leeming, E. J. L. Lowbury, D. Micklewright, E. S. Nicholson, F. P. Powell, L. G. C. E. Pugh, R. J. Rossiter, A. J. L. Smith, E. Smith, W. A. H. Stevenson, R. W. Tibbets, R. V. Young, O. C. Sandys.

FORENSIC MEDICINE AND PUBLIC HEALTH.—L. B. Bok, R. C. Browne, S. E. Furber, O. I. Green, R. M. Hugo, E. L. James, J. G. Jamieson, J. B. Longmore, J. E. Lovelock, H. Muller, J. A. Partridge, M. A. Partridge, J. C. Prestwich, R. Roaf, T. R. Savage, N. E. Stidolph, C. M. F. Walters, D. Whitteridge, W. E. Young, R. Billig.

PATHOLOGY.—J. C. G. Abraham, J. M. Almond, J. S. Astbury, J. B. Atkins, D. R. Cargill, D. L. P. de Courcy, C. Exell, L. G. C. E. Pugh, E. B. G. Reeve, J. Scholefield, A. Shannon, E. P. S. Snell, S. F. Taylor, R. R. Wethered, L. L. Whytehead, A. M. L. Isabella, A. C. Kohn-Speyer.

MEDICINE, SURGERY, AND MIDWIFERY.—R. G. Blackledge, W. W. Coppinger, D. I. Crowther, A. C. Grey, G. F. C. Hawkins, M. H. Hughes, D. Jefferiss, J. Mason, R. B. Niven, A. R. Norton, M. A. Partridge, I. F. Rose, A. F. Smith, T. B. Snell, R. H. S. Thompson, B. M. Thornton, C. B. I. Willey, W. Wynne Willson, A. L. Young, W. B. Young, A. J. M. T. Barnes, R. Billig, J. M. Sherring.

M.CH.—M. W. C. Oldfield.

DIPLOMA IN OPHTHALMOLOGY.—C. A. Buchanan, M. M. A. Dubash, V. B. Mankad, J. D. Maude, Y. K. C. Pandit, M. J. Philip, E. V. W. Pockley, L. R. C. Rose, C. A. Stanley.

UNIVERSITY OF CAMBRIDGE

Dr. David Keilin, F.R.S., has been re-elected Quick Professor of Biology. Mr. J. D. Boyd has been appointed university lecturer in anatomy, and Dr. W. A. H. Rushton has been reappointed university lecturer in physiology. Mr. S. J. R. Reynolds and Dr. C. D. P. Jones have been appointed university demonstrators in anatomy, and Mr. A. L. Hodgkin university demonstrator in physiology. Dr. G. N. Myers has been reappointed university demonstrator in pharmacology. All these appointments are for three years from October 1, 1937.

Applications for the Gwynaeth Pretty studentship, the holder of which shall devote himself to original research in the aetiology, pathology, and treatment of disease, with particular but not exclusive reference to diseases which cripple or disable in childhood or early life, should be sent, with copies of papers containing published work and testimonials and references, before August 1, to Professor H. R. Dean, Department of Pathology, from whom further information may be obtained. This studentship, of the annual value of £200, is tenable for three years.

Applications for the Nita King scholarship, the holder of which shall devote himself to original research in the aetiology, pathology, and prevention of fevers, should be sent, with copies of papers containing published work and testimonials and references, before August 1, to Professor Dean. This scholarship is of the annual value of £60.

The Benn W. Levy research studentship in biochemistry will become vacant on October 1. Applications for its tenure should be addressed to Sir F. G. Hopkins, F.R.S., at the School of Biochemistry, before July 24.

At the congregation held on June 19 the following medical degrees were conferred in addition to those reported in this column on June 26:

M.B., B.CHIR.—*E. H. Platts.

M.B.—*M. P. Morel, *S. H. B. Platts, J. W. W. Jepps, M. H. Harding, C. L. Heanley.

* By proxy.

UNIVERSITY OF LONDON

The University Studentship in Physiology for research in physiology, of the value of £100, has been awarded to Juan Pete Quilliam of University College.

Dr. A. A. Miles, F.R.C.P., has been appointed to the University Chair of Bacteriology tenable at the University College Hospital Medical School, and Professor J. H. Dible, F.R.C.P., to the University Chair of Pathology tenable at the British Post-Graduate Medical School, both from October 1.

UNIVERSITY OF BIRMINGHAM

At a congregation held on July 3 the following degrees were conferred:

HON. LL.D.—Sir Gilbert Barling Bt., C.B., C.B.E., F.R.C.S.
M.D. (STATE MEDICINE).—*Ex Officio:* H. P. Newsholme.
M.B., CH.B.—I. Ackerman, Enid I. M. Addenbrooke, *†N. Ameli, †T. E. D. Beavan, R. H. F. Brain, *J. W. Brown, V. H. Cooper, Enid Cyriax, C. M. Fenn, E. R. S. Grice, J. B. W. Hayward, A. C. Houghton, Joanna M. Hughes, Joan J. Lockley, M. Meir, *G. Mitchell, *C. P. Nicholas, W. H. Osborn, H. G. H. Richards, E. J. Richardson, *†Frances B. Robinson, R. L. Sadler, J. H. Sangster, *J. M. Small, O. E. Smith, *† C. W. Taylor, F. H. Vollam, M. A. G. Ward.

* Second-class honours. † Distinction in medicine.

The following scholarships, medals, and prizes have been awarded: *Queen's Scholarship* (third year), J. C. White; (fourth year), P. H. Davison; (fifth year), W. G. Mills; (final year), N. Ameli. *Ingleby Scholarship* (final year), J. M. Small. *Arthur Foxwell Memorial Medal* (final year), T. E. D. Beavan. *Sampson Gamgee Memorial Medal in Surgery* (final year), and *Priestley Smith Prize in Ophthalmology* (final year), R. H. F. Brain. *Russell Memorial Prize,* N. Ameli. *Leith-Newman Prizes in Pathology* (fourth year), Medical, B. A. E. Johns; Dental, S. J. Webb. *Peter Thompson Prize in Anatomy* (third year) and *Bertram Windle Prize in Anatomy,* H. A. Shaw. *John Barritt Melson Gold Medal in Physiology* (third year), J. C. White.

UNIVERSITY OF DURHAM

In convocation on June 29, with the Vice-Chancellor, Sir Robert Bolam, M.D., presiding, the honorary degree of Doctor of Science was conferred on Sir Henry H. Dale, M.D., F.R.S., director of the National Institute for Medical Research, Hampstead; and the honorary degree of Doctor of Surgery on Dr. R. P. Ranken Lyle, emeritus professor of midwifery and gynaecology in the University of Durham.

UNIVERSITY OF ST. ANDREWS

On June 30 the honorary degree of LL.D. was conferred on Angus MacGillivray, M.D., D.Sc., Assessor of the General Council on the University Court, and on William Ogilvy Kermack, D.Sc., of the Laboratory of the Royal College of Physicians of Edinburgh.

UNIVERSITY OF GLASGOW

The King, on the recommendation of the Secretary of State for Scotland, has approved the appointment of Noah Morris, M.D., D.Sc., F.R.F.P.S.G., to be Regius Professor of Materia Medica in the University, in the place of Professor Ralph Stockman, resigned.

UNIVERSITY OF WALES

The following candidates have been approved at the examination indicated:

M.D.—Ll. M. Edwards, Dorothy M. James.

The following candidates have satisfied the examiners in the examination indicated:

DIPLOMA IN PUBLIC HEALTH.—(*Part I*): R. M. Dykes, W. J. M. Evans, D. T. Richards, B. A. Thomas, D. A. O. Wilson.

NATIONAL UNIVERSITY OF IRELAND

UNIVERSITY COLLEGE, CORK

The following candidates have been approved at the examinations indicated:

M.B., B.CH., B.A.O.—*J. N. Twohig, *J. Burke, †J. F. J. Hickey, †M. Lentin, †R. G. G. Barry, †J. J Martin, J. Galvin, H. Gremson, J. P. Lane, Margaret M. Loughnan, J. J. McCarthy, D. F. Murphy, T. K. Murphy, P. L. O'Neill, T. Sheahan. *Part I:* Ellen M. M. Murphy. *Part II and Pathology:* C. Marchment, P. J. Ryan. *Part II:* P. O'Flynn. *Pathology:* D. O'Keeffe.
D.P.H.—M. J. McCarthy, J. O'Herlihy.

* First-class honours. † Second-class honours.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—W. D. Brinton, O. D. Gilmore, F. H. Holder, R. Robins-Browne.
MEDICINE.—J. R. Audy, G. R. Hopper, R. Robins-Browne.
FORENSIC MEDICINE.—J. R. Audy, R. Robins-Browne.
MIDWIFERY.—J. B. Alexander, B. M. Hulse, L. De C. Kite, H. A. N. Passmore, G. G. Sahasrabuddhe.

The diploma of the Society has been granted to J. R. Audy, G. R. Hopper, R. Robins-Browne, and G. G. Sahasrabuddhe.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Election to the Council

Three Fellows were elected on July 1 into the Council to fill the vacancies caused by the retirement in rotation of Sir Holburt Waring, Bt., Mr. C. H. Fagge, and Mr. W. Sampson Handley. The result of the poll was as follows:

	Votes
WILLIAM SAMPSON HANDLEY (Middlesex) ...	665
CHARLES HERBERT FAGGE (Guy's)	605
CECIL PEMBREY GREY WAKELEY (King's College)	480
James Ernest Helme Roberts (St. Bartholomew's)	367
Vincent Zachary Cope (St. Mary's)	359
Sir Lancelot Edward Barrington-Ward (Great Ormond Street)	287
William Hugh Cowie Romanis (St. Thomas's)	248
Walter Goldie Howarth (St. Thomas's) ...	217

In all 1,227 Fellows voted; in addition thirteen votes were found to be invalid. Mr. Fagge, Mr. Handley, and Mr. Wakeley are all elected for the full period of eight years.

Medical Notes in Parliament

The Royal Assent was given on July 1 to the Children and Young Persons (Scotland) Act, the Widows', Orphans', and Old Age Contributory Pensions Act, the Public Health (Drainage of Trade Premises) Act, and other Acts, and on July 6 to the Exportation of Horses Act, the Road Traffic Act, and the Hydrogen Cyanide (Fumigation) Act.

The Hairdressers (Registration) Bill, introduced by Lord Strabolgi, was read a first time in the House of Lords on July 2. On July 6 the Physical Training and Recreation Bill passed through committee of the House without amendment, and the Cinematograph Films (Animals) Bill and the Teachers (Superannuation) Bill were read a second time.

The Vote for the Ministry of Labour, the Finance Bill, and the Agriculture Bill have been the chief business of the House of Commons this week. The Cinematograph Films (Animals) Bill was read a third time by the House on June 29.

Sir Frank Fox, secretary of the Empire Rheumatism Council, and Dr. W. S. Copeman addressed the Parliamentary Medical Committee at the House of Commons on July 1. They explained that the Empire Research Council was being established on the lines of the British Empire Cancer Campaign, and as a result of a report by a special committee of the Royal College of Physicians. At the same meeting Dr. Davies, professor of pathology in the University of Hong Kong, spoke about a report made by a committee to the Hong Kong Government, which suggested a general curtailment of the university and, in particular, of the medical faculty and its research work. Sir Francis Fremantle, who presided at this meeting of the Parliamentary Medical Committee, and Mr. K. W. M. Pickthorn, who was invited to attend as a member for Cambridge University, went after the meeting to put the facts about Hong Kong before Mr. Ormsby Gore, who arranged for the matter to be brought before the Education Advisory Committee at the Colonial Office.

The Local Government Superannuation Bill was read a third time in the House of Commons on July 2, after a discussion about its application to officials whose military service during the war was voluntarily extended after November 11, 1918.

On July 2 also the Trade Marks (Amendment) Bill passed through report and third reading. Allusion was

made to the use of such trade names as "aspirin," "aspro," and "yeast-vite."

On July 5 the Hydrogen Cyanide (Fumigation) Bill passed through committee of the House, and the Agriculture Bill was read a second time.

The report by the Government Actuary on the Fourth Valuation of the Assets and Liabilities of Approved Societies was laid on the table of the House of Commons on July 5.

Health Services of Scotland

Dr. WALTER ELLIOT, in the House of Commons on June 24, brought forward the estimates for the Department of Health for Scotland, including a grant-in-aid of the Highlands and Islands Medical Service and grants under the National Health Insurance Acts. He said no one in Scotland was completely satisfied with the position in that country. Improvements would have to be made in the health services and in housing. There was no reason for despondency but every reason for action. Since the estimates were last considered a report had been received on public health services from an inquiry carried out under the chairmanship of Professor Cathcart. There had also been an inquiry carried out by the Department itself into the working of the block-grant system. This had been followed by legislation which improved the central grants to Scottish local authorities to the extent of nearly £1,500,000 a year. The Maternity Services Act had recently passed through Parliament, a vote for physical training had been carried, and a Bill had just been presented to close the gap between leaving school and entrance into health insurance. Infant mortality last year was 82 per 1,000 births. That was higher than the rates for the previous three years, but lower than the rates before 1933. The rate over the whole country for the first quarter of 1937 showed a marked improvement over that for the similar period of 1936, while the rate for sixteen large Scottish towns over five months of 1937 showed that the improvement had continued. Notified cases of influenza in Scotland rose from 43,000 in 1935-6 to 123,000 in 1936-7. Cases of whooping-cough—a serious malady last year in Scotland—rose from 1,144 in the first quarter of 1936 to 8,417 in the first quarter of 1937. In spite of these epidemics the health of Scotland continued to improve taken generally.

The Department was taking action on some of the lines recommended by the Committee on Scottish Health Services, and action would have to be taken on many more. The committee dealt with the need of a new sanitary code and the organization of hospital services. That work was proceeding. It dealt also with the need for extended general practitioner service, and recommended medical benefit for the dependants of insured persons. The most important of the committee's recommendations referred to maternity and child welfare. The Government had passed the Maternity Services (Scotland) Act, 1937, which came into force on May 16. There was no case under the Act in which a certified midwife would not be present during the whole time of labour, and in addition a medical man would be notified and would hold himself in readiness to attend. The maternity figures for Scotland had come down this year, and maternal mortality was at present the lowest recorded in Scotland; there was a saving of some sixty lives over the figure for the previous year.

SLOW HOSPITAL REORGANIZATION

Reorganization of hospitals under local authorities was not proceeding as quickly as they would wish. Some of the bigger authorities had taken steps for comprehensive schemes under the Act of 1929 and many were taking steps of their own to bring their hospital service up to date. A scheme which would give Lanarkshire as a whole a new general and a new maternity hospital as well as improved care of infectious diseases would have been well on its way, but unfortunately the large boroughs would not combine with the county council. Further provisions were being examined by the county council and two of the boroughs, three of the boroughs having decided to stay out. Provision was being made for a new municipal hospital at Greenock for the care of the general sick. Unfortunately Port Glasgow decided not to participate in the scheme on the ground that it would not have a share in the management of the institution. In Dumfries and Galloway arrangements were going more smoothly. There the local authorities were in negotiation with the voluntary hospitals as well, which was very desirable. In the north some six local authorities had jointly agreed to maintain a consulting physician at the Northern Infirmary, Inverness. Four schemes adopted under Section 27 of the Local Government Act, 1929, covered 800,000 of the people of Scotland, the authorities in question being Edinburgh, Dundee, Aberdeen Borough, and Bute. It seemed odd that the desirability of a general scheme of this kind should so far have appealed only to six authorities.

In the Highlands and Islands the schemes under discussion were extensions of hospitals at Lerwick, Kirkwall, and Stornoway. At Lerwick, with Treasury approval, the Department of Health had promised the managers of the Gilbert Bain Hospital a grant of 80 per cent. of £45,000, the estimated cost of a new hospital. In Kirkwall the Balfour Hospital trustees had applied for a grant to enable them to extend the hospital at a cost of £10,000, and the application was receiving sympathetic consideration. At Stornoway the managers of the Lewis Hospital had been promised a grant of £14,000 from the Highlands and Islands Medical Fund for extension of the hospital.

HEALTH OF SCHOOL CHILDREN

So far as school children were concerned the big constructive measure in addition to medical inspection was the milk-in-schools scheme. In certain areas the increase in numbers under the scheme had not been what was wished. In Lanarkshire, in the spring of 1936, 67,000 children were having milk in the schools, but since then the figure had dropped to 35,000. He did not know the reason for such a decline, which showed itself in areas where a great quantity of the milk was supplied free as well as in areas where half-price was charged. This was not satisfactory and required further consideration. Nevertheless in Scotland 294,000 school children were getting a ration of milk every school day. This would manifest itself in improved health, particularly in the condition of the teeth. The condition of the teeth of the people of Scotland was bad and that of the school children was unsatisfactory, and a supply of mineral salts must show itself in improved dentition and ultimately save expense to the local authority or to the individual. Since this subject was last before the House Berwickshire, Roxburghshire, and Selkirkshire had been brought within the ambit of the scheme. Further surveys were being undertaken by Professor Cathcart and Sir John Orr, and the northern survey under Sir John Orr was being supplemented by assistance from the Carnegie Trust. The fullest co-operation was afforded by the Education Department and the Departments of Health and Agriculture. It was worth remembering how far Scotland had advanced in the health of school children. As recently as in 1901 the mortality of children between 5 and 14 was 3,700 deaths. Last year the figure was about 1,500. In 1870 6,000 children between 5 and 14 died in Scotland, although 40 per cent. of the population was then rural as against 20 per cent. at present, showing that fresh air was not sufficient to produce health.

Turning to the question of water supplies, Dr. Elliot said regional schemes were in progress in the rural areas of Dumfries and Kirkcudbright, and similar schemes were under consideration by other county councils. He hoped an increase in money available under the block-grant would form a source from which these desirable reforms could be accelerated. Assistance had been given by the Commissioner for the Special Areas to water supply schemes totalling £225,000, and the Committee on Scottish Health Services recommended a special grant for water supply in the Highlands and Islands, where there was a special problem. In the past seventeen years they had built in Scotland about 250,000 houses, which meant that nearly one million people had obtained better accommodation, but another 250,000 houses were required, and they could not take another seventeen years to build

them. There were 100,000 houses in Edinburgh, and they had to build a new city of Edinburgh every four years. At present they were only building at the rate of a new city of Edinburgh every eight years. Local authorities were doing their utmost to apply the principles of town planning to the new areas which were being built—in some cases not satisfactorily.

REDUCTION MOVED

Mr. TOM JOHNSTON, moving a reduction of the Vote, said that the annual report stated that infantile mortality was 30 per cent. worse in Scotland than in England and Wales. They also know that in the chief infectious diseases Scotland was two and a half times worse than England and Wales. On the other hand, the health conditions of school children were improving, although the evidence of the county of Angus, which included the city of Dundee, showed that in secondary schools boys were 2 inches taller and 5 pounds heavier in weight at the age of 12 than were boys in the burgh schools. Similar figures had previously been supplied by the medical officer of health for Glasgow and by medical officers of health in other parts of the country. Under the scheme for supplying milk to schools every child between 5 and 14 years during school life received milk at 1s. per gallon, but in the case of the child of 4 who was not at school 2s. a gallon was charged for the milk. How could that be justified? Milk was delivered in bulk to institutions at 1s. 2d. a gallon and only 4d. to 6½d. a gallon was charged to the manufacturers. It had been said that disease cost us three hundred million pounds a year. It would pay to supply milk at 1s. a gallon to the mothers and babies instead of handing it over at 6d. a gallon for the purpose of chocolate manufacturers. If Dr. Elliot took up this question he would have the active sympathy of both the Scottish and English Milk Boards. If the price of milk was reduced to 1s. a gallon it would increase by 3s. 9d. a week the purchasing power of the average family of five units.

HIGHLANDS AND ISLANDS: INADEQUATE HOSPITAL ACCOMMODATION

Sir ARCHIBALD SINCLAIR expressed his appreciation of the prominence Dr. Elliot had given to the hospital services that day for the first time in debates on the Scottish Health Department. Progress in those services was slow, and he hoped the Secretary of State would press it on. He was delighted to hear that a consulting physician had been appointed to the hospital at Inverness and was sure his services would benefit the Highlands. The Department of Health in its report for 1936 quoted a section of the report of the Committee on Scottish Health Services which acclaimed the Highlands and Islands Medical Service as an outstanding success. The Medical Service Committee, however, had made a recommendation for the improvement of the service. They said additional hospital accommodation and specialist services for medical and maternity patients should be provided, and also additional nurses and a further equipment of nurses with motor cars. He would like to know whether these recommendations were being pursued. He did not see anything in the Health Department's report about extended provision for refresher courses for nurses and little about the improvement of nurses' housing conditions. An additional grant-in-aid of the local authorities' health services in the Highlands and Islands was an urgent matter.

Mr. WELSH said the number of rural houses in Lanarkshire was 57,675. Of these, in the year 1936, only 1,177 were inspected, and of those inspected 46 per cent. were found to be unfit for habitation. Of the 57,675 rural houses 22,252 were overcrowded by the Department's own standard. At the end of 1936 not a single house was being built in the rural areas of Lanarkshire for the purpose of dealing with overcrowding.

Mr. KIRKWOOD said he had just come back from a cruise round the Western Isles and had never seen healthier and happier children, largely owing to the medical services that have been instituted in the Highlands and Islands. The doctor at Stornoway had drawn his attention to the fact that the hospital accommodation was inadequate. The doctor told him that at the sanatorium in Lewis they could not get fresh eggs, although there was no reason why they should not be supplied.

Mr. LEONARD said the dental condition of school children according to the Department's report was one of the major problems of the school health services, yet only fifty-one full-time and thirty-one part-time dentists were engaged. That meant only one person attending to 12,000 children, although there should be one qualified dentist to every 5,000 children. There were only fifty nursery schools in Scotland attended by 1,800 children, and of that number thirty-six were run by voluntary bodies. The death rate from pulmonary tuberculosis was the lowest on record—55 per 10,000—but the death rate from the disease was the same as last year—74 per 100,000. Had anything been done by the Department to bring to the notice of the competent authorities the special report on the need for greater co-operation and the general advancement in the treatment of tuberculosis?

Mr. WEDDERBURN replied for the Government, and said the Department of Health had drawn the attention of local authorities to the need for providing the fullest supplies of milk in maternity and child welfare centres. The Department would probably issue another memorandum dealing comprehensively with this point. Administrative action on milk prices that could be taken through the agency of the Milk Marketing Board would have to be discussed on the vote for the Department of Agriculture. Mr. Kirkwood would be glad to know that the hospital at Stornaway would not be delayed through the pressure of other building works.

On a division the motion for reduction of the Vote was defeated by 118 to 84.

Trade Effluents

The Public Health (Drainage of Trade Premises) Bill was considered on report in the House of Commons on June 23 and was read a third time. On the third reading Admiral BEAMISH said the Bill was capable of reducing the pollution of rivers, but he asked whether the laws which existed apart from this Bill could and would be enforced. At present the Rivers Pollution Prevention Acts were not put into force. They were full of legal loopholes, and there was overlapping responsibility on almost every river in the country. Authorities concerned with the enforcement of the anti-pollution laws were often pollutors of the streams themselves. Sir KINGSLEY WOOD said he would endeavour to see that the Bill was put into operation properly, and he relied on the co-operation of the local authorities. The Bill had received general approval.

Marriage Bill

The Marriage Bill, which has already passed the House of Commons, was before the House of Lords on June 24 when Lord ELTISLEY moved its second reading and explained its provisions. He said divorce would be permitted where the spouse was of incurably unsound mind. Such persons must have been continuously under medical care and treatment for not less than five years immediately preceding the presentation of the petition and must have been found by the court to be incurably insane. With these safeguards there could not be legitimate ground for alarm. Clause 6 prescribed new grounds on which a marriage could be set aside by reason of nullity. All these grounds had been recommended by the majority of the Royal Commission of 1912. One ground was that either party at the date of the marriage was of unsound mind or epileptic, and another that the respondent was suffering from venereal disease. If proceedings were instituted under these headings the petitioner must have been ignorant of the facts at the time of the marriage.

Lord FITZALAN OF DERWENT opposed the Bill.

The ARCHBISHOP OF CANTERBURY said he could not support the inclusion among grounds for divorce of insanity as defined in the Bill, and he believed the proposal marked a retrograde step in medical science, which increasingly regarded this disease as one capable of cure. He was prepared to support the nullity grounds for divorce.

Lord SNELL referred to the position of the man with children whose wife had become mentally sick and for whom there was no relief, and he appealed to the House to give the Bill an uncontested second reading.

Lord ATKIN said the clause about nullity was unusual in providing that the spouses might have their marriage annulled if there had been recurrent attacks of epilepsy, or if one of the spouses was suffering from venereal disease. There was no definition of the latter. It did not mean communicable venereal disease because that would be cruelty which would be enough to secure divorce. The causes he had mentioned, which were entirely new, might not be discovered within twelve months.

The BISHOP OF DURHAM said that when he looked at the conditions under which insanity was to be declared a ground for divorce, and when he consulted medical authorities, he found the probability of the insanity being cured was so slight that it really would be irrational to make that a basis for refusing relief which might fairly be claimed by a large number of people.

Lord ALNESS said the majority report of the Royal Commission on Divorce was entirely in favour of making insanity a ground for divorce. It pointed out that insanity differed from most other maladies in that in involved a complete break-up of the household and removal of the patient perhaps for years. If it were said that insanity was due to misfortune rather than to fault, he had yet to learn that decrees of divorce were handed out as a reward or a punishment.

On June 28 the debate was resumed by the BISHOP OF BIRMINGHAM, who said he was in favour of the provision that insanity, on the conditions laid down, should be a ground of divorce.

The MARQUESS OF SALISBURY opposed the Bill, and asked why, if they were to include as a ground for divorce insanity because it made marital relations impossible, they should not include every other disease that made marital relations impossible. Who was to say when insanity was incurable? It could only be a matter of opinion of one or more doctors. Persons suffering from melancholia would have cruelly added to the weight and burden of their fears the anxiety that their melancholia might become incurable, that divorce would then be hanging over them, and that they might be deserted in a time of great need.

LORD DAWSON OF PENN'S VIEWS.

VISCOUNT DAWSON OF PENN said that collusion, adultery, and perjury, injuring as they did the characters of the people who resorted thereto, and having the further objection of damaging respect for the law in the eyes of the public, were very great evils. Some of the speakers were disposed to say that collusion and adultery were due to a weakening of the fabric of the moral sense. One speaker had even referred to licentiousness as being the cause. Were not the causes of our present troubles to be found in the changes in thought and in mind which had taken place in the course of the years? Changes must come, whether they were in thought or conduct, and what was to him so difficult to understand was why the idea of marriage should alone be expected to remain static. Where the kernel of marriage had been lost, the tendency of the present age was to throw away the husk—and could we say that it was wrong? The law, having lost its social sanction, was increasingly disregarded. Surely the cure was to adapt the law to the prevailing mind of the community, and this was what this Bill seemed to do.

The increase in divorce did not mean a corresponding increase in marriage failures, because in former days more married people lived with their failures. To-day these failures were jettisoned when they were so irremediable as to make family life a pretence and a damage to the children. Further, in the past the wife had no more equality in sex than she had under the law. Often she was but the passive recipient of her husband's sex needs, while her own sex life was too often submerged by repeated and alternating periods of pregnancy and lactation. In the years preceding the war freedom and equality were coming to women, and with this an increase in sex-consciousness. The war accentuated these changes, and henceforward men and women had a freedom of companionship hitherto unknown. The result of women being more sex-conscious was that a woman expected a sex-satisfied life, just as she demanded equality of companionship, and if deprived of this discontent and a sense of failure were apt to follow. It followed, therefore, that women did contribute more to marriage failures than they did in days gone by, when woman was a more submissive partner. On the other hand, it was his belief that marriages which were successful to-day reached a higher level of happiness than at any previous period.

Passing to the clauses of the Bill, Lord Dawson said that the object of the five-year clause, as he understood it, was to prevent the break-up of marriage for a cause which was transient and curable. He suggested that five years was too long. New attachments would be very apt to arise during the waiting period, and he had his doubts whether they would stand the test of five years' celibacy. That was a reasonable term, perhaps, for someone in their early twenties, but it became a much more serious matter if a woman of 28 was asked to wait five years. It would carry with it the grave disadvantage that it would be destructive of the possibility of a second marriage. He regretted that the Bill did not attempt to deal with or devise means of disentangling and remedying the causes of marriage disharmony in their early stages. Members of his own profession knew full well how many were the misfits of marriage. The trouble might be physical, it might be psychological, which come to them in the guise of ailing health, and how often by imparting knowledge and understanding an endangered marriage might be put straight. Ways and means for making such help widely available would be well worthy of exploration.

INSANITY AS GROUNDS FOR DIVORCE

Lord Salisbury had touched on the subject of insanity, and had said it was impossible to depend on the opinion of doctors. Lord Dawson's answer was that in this imperfect world we had in all our daily relations to trust to those who were expert in the varied branches of knowledge and experience. The care with which matters of insanity were considered by his profession, checked and controlled as they were by their colleagues of the law, gave greater security to the sufferers from mental disorders than was given in any other country in the world. When we came to insanity, he agreed that we were up against difficulties. If we limited the period of continuous treatment to three years he thought we might exclude the chances—and the reasonable chances—of recovery. There was this further reason against making the period too short—that the patient might have a knowledge that he or she was in danger of divorce, and, in some instances, anxiety as to a possible divorce might prejudice the patient's recovery. He had a suggestion to make which he thought was a substantial one. It should be either a continuous period of five years or—and he regarded this as very important—whenever a recurrent form of mental disease had been established. If we increased the period and paid special attention to the feature of recurrency we should provide a just solution for both the patient and the patient's home. There were certain forms of insanity which were cyclical.

There was one important omission from the Bill—homosexuality should be made a cause for divorce alike for men and women. He regretted also the omission of inveterate alcoholism and inveterate drug-taking. Only members of his profession knew the desperate state of fear in homes when one of the partners was the victim of inveterate and incurable drug addiction or alcoholism. Drug addiction, though more subtle than alcoholism, could bring destruction to families with an ease which we all wished to avoid. He supported the second reading of the Bill. With certain amendments it would make, in his judgement, more firm the institution of marriage, and make life more honest, more just, more in accordance with the facts of life.

Lord MAUGHAN said that there was an elaborate insanity definition in Clause 3. The number of persons who recovered

after five years' continuous treatment in one of the places mentioned in the clause was very small. In the committee of the House of Commons it was stated to be 1 per cent., but he thought that was a mistake. It should be put a little bit higher. But assuming that 2 per cent. recovered after five years in a place of detention, the question they had to ask was this: "How many of these 2 per cent. are persons of whom the doctors in charge of the institution would declare on oath that they had shown no signs of improvement during the five years?" He did not think that the two conditions could possibly be fulfilled so as to leave open cases where there would be future recovery. The number of those who would recover after five years being as small as it was, and the fact that if there was ever going to be an improvement it would be observable during the five years, their Lordships might be satisfied that not one case in a thousand would slip through the two-fold qualification necessary to fit the case as one within the Bill, if the Bill passed in its present form.

The Bill was read a second time without a division.

Delusional Insanity in Dartmoor Prisoner

Mr. D. N. PRITT asked on June 24 whether the system called "knock" whereby prisoners under punishment were awakened by a warder knocking on their cell door at short intervals throughout the night was, or had recently been, in operation at Dartmoor; whether it had official sanction and, if so, in what circumstances. Sir SAMUEL HOARE replied that there was no foundation whatever for the suggestion that such a system existed, or had recently existed, at Dartmoor or any other prison.

Mr. PRITT also asked if the attention of Sir Samuel Hoare had been drawn to the case of a prisoner at Dartmoor who had a crippled arm and was certified insane and removed to Broadmoor; whether that prisoner was still at Broadmoor; whether he was now sane, and, if not, from what form of insanity he was suffering; whether his insanity was brought about wholly or partly by his treatment in Dartmoor; whether his arm became crippled as a result of an attack upon him by a prison officer at Dartmoor; and whether any inquiry had been, or would be, held into the circumstances under which his arm was crippled. Sir SAMUEL HOARE presumed that the case referred to was that of a prisoner who in April of last year sustained a deep cut on his right forearm from broken glass. The circumstances were fully investigated at the time by the Board of Visitors, whose inquiry showed that there was no foundation for the suggestion that he had been attacked by a prison officer. The suggestion that the prisoner subsequently became insane owing to his treatment in prison was equally unfounded. His mental condition had improved but he was still unfit to leave Broadmoor Asylum. He was suffering from delusional insanity.

Death following Diphtheria Prophylaxis

On June 24 Mr. LEACH asked the Minister of Health whether he was aware that an Irish jury attributed a death from generalized tuberculous infection following prophylactic inoculation against diphtheria to the presence of tubercle germs in a bottle of prophylactic supplied by the English firm of chemists who supply most of the diphtheria prophylactic used by public authorities in England and Wales; and whether he would have a searching inquiry made into this matter in view of the seriousness of the allegation made.

Mr. BERNAYS: I have seen a Press report to the effect stated in the first part of the question. As to the second part, careful inquiry concerning the prophylactic supplied by the firm referred to has already been made by medical officers of my Department, and the result leads to the conclusion that no tubercle bacilli were present. As the matter is somewhat technical I will send the hon. member further particulars.

Medical Supplies to Bilbao

On June 28 Miss WILKINSON asked the Secretary of State for Foreign Affairs whether it was upon instructions from the Foreign Office that medical supplies were not allowed to be sent back in the *Habana* on its return to Bilbao, although the invoices showing that the boxes only contained medical supplies were shown to the Foreign Office.

Mr. EDEN: The Foreign Office was approached by the Spanish Medical Aid shortly before the *Habana* was due to return to Spain from this country at the end of last month with a request for permission to place medical supplies on board. In view of the clear assurances given to the insurgent authorities that Spanish refugee ships receiving the protection of His Majesty's ships should return to Spain in ballast, it was decided that to agree to this request might prejudice future evacuation arrangements. At the same time His Majesty's Government offered to provide information regarding sailings to Bilbao of British merchant ships which might be willing to carry medical supplies.

Physical Training and Recreation Bill

The Physical Training and Recreation Bill (the provisions of which were summarized in the *Supplement* of April 3, p. 166) received a second reading in the House of Lords on June 29. Earl STANHOPE, who moved the second reading, said that the demand for increased opportunities for physical training and fitness, particularly among the younger generation, was one of the most striking phenomena of the present day. He based the demand for physical training and fitness on the results of national education. For many years they had been improving physical training, and whereas only some two hours a week used to be given for playground exercises and gymnastic activities, at present it was not uncommon in elementary schools for a period of physical activity to be provided for every day. Since the war they had been pressing for a wider and more varied syllabus of physical training to include an adequate daily period of exercise, organized games, swimming instruction, and gymnastics. The result had been that children had left school with a desire for physical exercise, which had been passed on to many of their elders. When the House of Lords debated the question of national physique last November, Lord Dawson of Penn remarked that they ought to distinguish between physical education and physical recreation. He (Lord Stanhope) wanted both. He wanted the physical education given in schools compulsorily, and in such a way that it would become a hobby and a physical recreation to children when they left school and in their later years. It was to provide facilities for physical development after leaving school that the Government had produced this Bill.

The scheme was entirely voluntary. It was based on existing organizations. The object was to mobilize voluntary effort and to join it with the extremely valuable work already being done by local authorities. The tradition of the best voluntary organizations was not that the training should be purely physical. They had also aimed at training minds, and their objective had been a healthy mind in a healthy body. That fitted in with the aim which had been constantly before the Board of Education for many years—that a child should be made fit mentally, physically, and socially for the life which lay before it. The scheme was in no sense military.

Although there was no mention of a drill hall in the Bill there was mention of gymnasia. In this country, being so largely urbanized, it was very difficult to provide open spaces where games could readily be played, and it was difficult for those who worked in great cities to find the time to get away when their work was over to play games except at the week-ends. Therefore a good deal of physical training had to be done in gymnasia. Particularly was that true during the winter months. In foreign countries they had always started with gymnasia and gymnastic clubs, and it was only comparatively recently that they had taken to games and outdoor sports. We in this country started at the other end, and it was only recently that we had realized the value of gymnastic training. While it was possible to become very fit by gymnastic training alone, or even by home training, this was extremely dull, and a national system which confined itself solely to gymnastic training and physical jerks would never be a success. Therefore gymnastic training would be joined with outdoor sports and outdoor games.

The Bill filled a very widely felt want. The knowledge of the value of physical training and physical culture was growing very rapidly throughout the country, and people needed greater facilities than they had at present. Even now that knowledge was nothing like so widespread as it should be. A very large number of people, including those who sometimes were responsible for the better-known public schools of the country, had not yet realized the value of physical training. A good deal had yet to be done to make its value more widely known, and power was taken in Clause 3 for the Board of Education, in consultation with the National Advisory Council and with the recommendation of the Grants Committee, to spend money on publicity and propaganda.

ADEQUATE NUTRITION BEFORE PHYSICAL TRAINING

Lord STRABOLGI welcomed the Bill. He said there ought to be a separate Ministry for the whole range of sport and physical culture, and everything in connexion with that side of human activities. With more and more people living in great cities something of that kind was absolutely necessary. They could spend money upon and organize, encourage, and stimulate physical culture, physical exercises, and recreation as much as they liked, but if they had a large section of the people undernourished or suffering from malnutrition all that would be wasted. Wholesome and sufficient food was more important for many of the poor people to-day than physical jerks. At present a large section of the population did not get sufficient food of the right quality to keep them in proper health.

Viscount BLEDISLOE said that on returning after five years' residence in New Zealand he was shocked at the relative neglect of national physique in this country. As president of the National Council of Social Service he welcomed the Bill because it definitely combined Government action with the work of voluntary organizations. He had had the opportunity, during the last two years, of seeing some admirable work of voluntary associations in every sphere of social activity, including physical training and welfare, in different parts of the country, and notably in the Special or Distressed Areas.

Lord ABERDARE said that the ideal behind this campaign was that of personal fitness: fitness for the greater enjoyment of life. He agreed with the whole structure of the Bill. He foresaw as a result of it a great strengthening of the moral fibre and character of the citizens of the country. That, among other things, should go a long way to reduce the number of inmates of the prisons and asylums. He foresaw better health, which would mean less medicine and drugs, and should go far to relieve the pressure on the hospitals. He foresaw better mental balance and alertness, which should have very far-reaching effects, even so far perhaps as to reduce the number of deaths on the roads. He (Lord Aberdare) would like to see all exercise taken in the fresh air, but with our climate gymnasia were generally a necessity. The Council on Physical Training was also concerned to provide for swimming, walking, cycling, and all forms of sport and exercise.

FUNCTIONS OF THE NATIONAL COLLEGE

The Government was taking steps to improve nutrition, which meant better housing and better working conditions as well as supplying extra food in certain cases. This country was one of the best fed in the world. No school child need be underfed, and ample powers and machinery existed for feeding children who needed it. The machinery could be used, and the responsibility lay largely with the teacher, who had emergency powers to put a child on the food or milk list until a doctor could be seen. No one would purposely put children through a course of physical training which would be too much for them, but this subject had been over-stressed and did not really arise under the Bill. A recent routine examination in London schools showed that of 184,733 children examined - these were unselected children—only 122 were found to be seriously ill-nourished, and only 1,500 seriously under-nourished. Recently he was told by a reliable social service worker that he saw no sign of under-nourishment in Battersea.

At the National College there must be an adequate supply of teachers, leaders, and organizers. It was necessary to see that facilities throughout the country were properly used, and to keep people enthusiastic. The National College was a vital necessity, not only for this purpose but for carrying out the essential medical research. Perhaps the College was the mainspring of the whole movement. The Council must arouse a personal ambition in everyone to be fit and healthy. For this purpose they would need to use all the resources of modern publicity, such as posters, booklets, and films. They must keep physical training and recreation steadily before the people and encourage them to use their leisure hours wisely.

LORD DAWSON AND A CREATIVE POLICY

Viscount DAWSON OF PENN said he agreed with Lord Aberdare that this Bill was of vast importance, because it gave method and structure to a policy which would aim at the promotion of the fitness of the nation. It was not only necessary in the interests of the present generation but of future generations that they should be given the best opportunity to turn those great potentialities which are particularly notable in the British race into actualities. We had only to go back to the time of the war to visualize what powers were in our blood. His belief was that if the youth of the nation got the opportunity of a training in fitness they would create a surprise by the rapid way in which they would respond, for they had a certain elasticity, not only of body but of mind, which made them respond very easily to advantages in the way of physical education.

Not only was this an important matter to the present generation, but a higher standard of physical fitness was necessary for the preservation of the nation in future generations. In securing a fit race in days gone by Nature did a large part of the work. She killed off the unfit, and only the fit survived. We were gradually undoing Nature's efforts by our developed sense of greater humanity and a more acute conscience towards those who were in distress and those who were weak. If we were to continue that policy of looking after the weaker brethren—he could not conceive anybody doubting that that was a right policy—we must remember that we were at the same time undoing Nature's plan for discarding the weaklings. It therefore became doubly important for us to set up a policy which would create fitness. If we created fitness and gave the proper opportunities it was inevitable that the more fit and efficient would come to the fore. Consequently, the more fit and efficient would lead the nation. The young were all hero worshippers, and would follow the leaders of their own generation. If, therefore, the opportunity was given to those who were most fit to move forward, as they inevitably would, in the company of their generation, they would set the pace of conduct and the standard of fitness for those who came after them.

He agreed with Lord Aberdare that from one point of view the National College was the pivot of this scheme. If we had a suitable college—he hoped it would be within reach of London—and if that college was erected in suitable and large enough grounds, we should be able to have a community of students, where they would learn the technique of their business, where men and women who were going to take up physical education as a whole-time job would be trained, and, in addition, where organizers and leaders for the voluntary organizations could receive a training of lesser duration and less strenuousness. He hoped also that we should be able to choose the best of the boys who were passing into adolescence and give them at this college a special six months' training, so that we might test out those who were potentially fit and be able to give those who turned out to be fit the opportunity of becoming the leaders of their generation in the walks of life which they individually pursued.

INSTRUCTION IN CHOOSING AND COOKING FOOD

On the subject of nutrition Lord Dawson said the distribution in this country of what was called malnutrition, but was, he thought, very often more accurately called undernutrition, was patchy. If one went to the London elementary schools one was very much impressed with the great change

in the children. They were for the most part well nourished, even in the poorer districts; they were well dressed; they were a different generation from the children we used to see years ago. On the other hand, if one went to the distressed areas, where unemployment was rampant, he agreed that there were places where under-nourishment might be found, and in some places one could not get away from it; it was quite obvious. In connexion with under-nutrition we were apt to lose sight of the fact that so many of the people of this country who were the heads of households had never been taught how to choose food. They did not know how to spend their weekly earnings to good advantage. Further than that, so few of them know how to cook the food. If one compared this country with certain countries on the Continent the difference was manifest. If one went into the homes here one might see children sitting round a table, and instead of wholesome food which had been cooked for their consumption one saw tinned fish, tinned vegetables, and many other things which avoided the trouble of cooking. It was not only because the parents were unwilling to cook, in many instances they had never been taught how to cook. The result was that the homes of those of the industrial classes showed, more than one could wish, an under-nourishment which was partly due to their want of education in this particular. It was not due to any carelessness or to want of love for their children, because there was nothing more striking than the devotion to the children to be found in most homes in all classes in this country: it was due to want of knowledge. One of the best investments the Government could make would be to provide travelling vans to go about the country giving lessons and lectures on the choice and cooking of food. People were ready to receive such instruction, because they were beginning to understand that the choosing and cooking of food were no small matters in securing the proper nourishment of the young.

Earl STANHOPE, replying to the debate, said that the question of nutrition had been very adequately dealt with by Lord Dawson of Penn. He found himself in entire agreement with everything that Lord Dawson had said. He had not been very long in his present office, but he had already been making inquiries in the direction of which Lord Dawson spoke, and his view was that it was a question of education much more than a question of lack of money. A great deal could be done in that direction. Many people were inclined to quote the very high physical development in Germany, and yet the younger Germans were those born either during or just after the war, when the question of nutrition in Germany was one of great difficulty and when practically no children, whatever their class or wealth, had much chance of getting adequate food. The improvement had been due not to better nutrition so much as to physical training and physical development given by the sort of methods proposed under the Bill.

The Bill was read a second time.

Prevention of Silicosis

On June 29 Mr. JAMES GRIFFITHS asked the Secretary for Mines if his attention had been called to the discovery by research in Canada of a method of preventing silicosis by the use of certain dust mixtures. Captain CROOKSHANK replied that he had as yet no information except short general references in the Press. Until he had received and studied full particulars of these researches, which his Department was obtaining, he would not be in a position to make a statement.

Tuberculosis Care Committees in Wales.—Tuberculosis care committees have been established in six counties and one county borough in Wales. Sir KINGSLEY WOOD, who stated this on June 17, added that he had asked all the county and county borough councils in Wales to give early and careful attention to the provision for after-care.

Notes in Brief

The number of beds available in local authority institutions in Scotland for cases of infectious disease, including tuberculosis, was approximately 11,350 at the end of 1935 and 11,600 at the end of 1936.

Medical News

Dr. Thorvald Madsen, chief of the State Serum Institute of Copenhagen, has, for the seventh time, been elected president of the Health Committee of the League of Nations.

At a festival dinner in support of the Princess Elizabeth of York Hospital for Children, Shadwell, to be held at the Mansion House on July 15, with the Lord Mayor, Sir George Broadbridge, in the chair, the principal speaker will be the Archbishop of Canterbury.

The introductory address for the hundred and second session of the Middlesex Hospital Medical School will be given by Dr. George E. Beaumont on Wednesday, July 21, at 3 p.m. in the Scala Theatre, Charlotte Street; and the prizes will be distributed by Viscount Dawson of Penn.

The nineteenth annual meeting of the Mental Hospitals Association will be held at the Guildhall, London, on Tuesday, July 13, at 11 a.m. Papers will be read by Dr. T. C. Graves on "The Treatment of the Patient—First Things First," and by Dr. W. J. S. Reid on "The Outpatient Clinic for Treatment of Early Mental Cases."

The International Balneological Congress at Budapest has been postponed until October 7 to 14.

The postponed eleventh International Congress of Psychology will be held in Paris from July 25 to 31, with Professor Pierre Janet as honorary president, Professor Henri Pieron as president of the Executive Committee, and Professor I. Meyerson as general secretary. The headquarters of the Congress are at the Laboratory of Psychology of the Sorbonne.

Dr. George F. Buchan, medical officer of health for the borough of Willesden, was among those who received the distinction of honorary life membership of the Canadian Public Health Association conferred at its twenty-sixth annual meeting held recently in Toronto.

At Cheltenham College on Speech Day (July 3) Lord Willingdon unveiled a memorial tablet to Dr. E. A. Wilson on a wall of the new science laboratory. This bears the inscription "Edward Adrian Wilson, M.B., biologist and explorer; from boyhood a lover of Nature. He died with Scott on the return from the South Pole, March, 1912. Strong in will to strive, to seek, to find, and not to yield."

During the world exhibition at Paris 237 Congresses will be held, 18 of them medical.

The German State Medico-Historical Association intends to arrange an exhibition of medical caricatures in the autumn. Further information can be obtained from Kaiserin-Friedrich Haus, Robert Koch-Platz 7, Berlin, N.W.7.

Mr. Herbert Eason, M.S., F.R.C.S., who took up the duties of Principal of the University of London on July 1, has accepted the invitation of Lord Crewe and the committee to become a member of the Executive Committee of the British Institute in Paris in place of the late Sir Edwin Deller.

The Committee of Management of the Infants Hospital, Vincent Square, Westminster, S.W., announces that the age limit for patients at this hospital has been raised to 12 years, and that children from birth to 12 years of age are now eligible for treatment there.

The issues of the *Münchener medizinische Wochenschrift* for June 25 and of *Die medizinische Welt* for June 26 are devoted to the history of Göttingen University on the occasion of the 120th anniversary of its foundation.

The Japanese Government has recently appointed a committee to discuss the question of establishing a Ministry of Health for Japan.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Finance Department.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

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QUERIES AND ANSWERS

Mastitis of Puberty in the Male

Dr. F. E. COOMBES (Forest Gate, E.7) writes: In connexion with Dr. W. Paterson Brown's letter (*Journal*, June 5, p. 1188), a case of mine may be of interest. A male, aged 18, had mastitis of the right breast which did not respond to treatment; he was therefore sent to a surgeon. The night before his visit he had an acute attack of abdominal pain. The surgeon found an undescended testicle in the inguinal canal. When this was dealt with the mastitis cleared up spontaneously.

Reducing by the Book

"C. W. A." writes: With reference to Surgeon Lieutenant D. P. Gurd's note (June 12, p. 1240) headed "Reducing by the Book," I should like to ask what weight the book should be? The *Medical Directory* is about 6 lb.; is this sufficient?

Income Tax

University Examiner—Travelling Expenses

"OFFICIAL" inquires whether he can deduct the cost of travelling to act as a university examiner at a fee of £20 for the academical year. The work involves staying in the university town for a day or two.

*** An examinership is technically an appointment, and the emoluments are assessable under Schedule E. The expense of travelling, etc., to the place where the duties are performed is not allowable. It was refused by the High Court (Ricketts v. Colquhoun) in the case of a barrister incurring similar expenses in connexion with an appointment as Recorder. The harshness of the rule in such circumstances was recognized in the report of the recent Committee on the Codification of the Income Tax.

Tax on Official Quarters

"W. G." is a medical officer in one of the Government services, and as such has to occupy an official residence. He cannot sublet it, and regards it not as an official emolument, but rather as the reverse. He has been assessed for tax on the "annual value" of the premises. Is that correct?

*** In similar circumstances a bank manager or other employee not in Government service would not be liable. Unfortunately the position of an individual in the service of the Crown is specifically provided for in the statutes (Schedule A, No. 7, Rule 11), and we have to advise our correspondent that he is legally liable to the tax. We may perhaps add that we understand that the amount on which the tax is payable ranks for pension, so that the Government is at least consistent.

LETTERS, NOTES, ETC.

"V.U.A."

Mrs. CLARA HARDY (7, Darley Avenue, West Didsbury, Manchester) writes: Shocked by newspaper accounts of children fatally burned through being left in a house alone, I formed the society known in London as Voluntary Unofficial Aids. These women, without any charge, mind children for short periods, visit the lonely and the sick, and escort children to hospitals, etc. There are now eight branches in different parts of the country, but London needs a new honorary organizer. There are no funds, but a certain amount of time and money is needed by the organizer. I will gladly give details to anyone willing to undertake this interesting work.

A Remedy for Hay Fever

Dr. REGINALD F. WHITE (Nailsea, nr. Bristol) writes: As a sufferer for many years with hay fever I have naturally tried all the recognized remedies, with very little or no relief, and would suggest a simple remedy which I have devised and tried with considerable success. Two small plugs of "sorbo" sponge are cut to suitable size so as to fit comfortably inside the nostrils. These are worn continually during the day and are removed only for cleansing. I have worn such plugs for a whole day without changing and without the slightest discomfort. As an added safeguard, to prevent the plugs being accidentally drawn into the nose by a sudden violent inspiration, they can be easily fastened across the septum by fine silk. I do not advise the plugs to be worn at night, but as an alternative a thin gauze mask is tied over the nostrils. The advantages of this remedy are: (1) easy and rapid cleansing; (2) minimum amount of discomfort; (3) minimum interference to respiration; (4) simple cleansing in cold water only is necessary; (5) maximum comfort and relief. My own routine consists of the above, combined with 1/4 grain of ephedrine by mouth two or three times a day. The above procedure has enabled me to do my work in comfort, and, furthermore, I have been able to enjoy the open air and sunshine, which was otherwise absolute misery.

Counting Respirations

Dr. J. P. HASTINGS (Auckland, N.Z.) writes: It is with no little diffidence that I venture to write this letter. Some time back an article appeared in the *Journal* the purport of which was to encourage general practitioners to write concerning their medical experiences. This is my excuse for bringing under your notice an auscultatory method of counting the respirations. For some years now, in diseases of the respiratory tract, I have made a practice of noting the respiratory rate by means of listening with the stethoscope for a period of at least one minute. I have found this method more satisfactory than the usual clinical procedure.

Short-wave Therapy

Dr. P. P. DALTON (London, W.1) writes: I am glad to see by Dr. H. J. Taylor's letter in your issue of June 26 that his previous letter was not intended to be a counterblast to my published work. I do not follow the rest of his letter. What D'Arsonval claimed for diathermy in 1891-6 seems to me to be as relevant as is what Gladstone said in 1888! Short-wave therapy had never been heard of in 1891-6, and what D'Arsonval then claimed for diathermy has nothing to do with what I now claim for low-intensity short-wave therapy, which is not a diathermic effect at all. I deny the statement that I am putting forward "claims" as "evidence," old or new. I have put forward "evidence" on which to base a "claim"—namely, that with low-intensity short-wave therapy "an influence has been exerted and an effect obtained." The fact that Audiat, Delherm, and Fischgold made similar claims surely does not prove my claim to be false. Dr. H. J. Taylor professes to be unable to see "that any new evidence has arisen because such claims have been made before." Surely the making of a claim does not prevent new evidence arising. He having published his opinion that short-wave therapy has no specific effect does not want, as he expressed himself to me after seeing one of my experiments, "to be forced to eat his own words"; but, as I told him in reply, "it is better that one scientist should be forced to eat his own words than that science should be deprived of knowledge." I appeal to Dr. Taylor to look at the new evidence with a seeing, not an unseeing, eye.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

22 Epidemic Myalgia and Epidemic Poliomyelitis

B. DE RUDDER (*Klin. Wschr.*, April 24, 1937, p. 585) notes that these diseases have (1) epidemiological similarities, both showing an August to September peak in the frequency curve in the northern, and a February to March peak in the southern, hemisphere; (2) a geographical distribution which is similar and "equitorifugal"; and (3) a similar variability of contagiousness in different epidemics. Clinically it has been reported that the abortive or non-paralytic form of poliomyelitis is some ten to twenty-five times as frequent in an epidemic as is the paralytic form, and that many abortive cases are associated with severe neuralgia or myalgia. The findings in the cerebro-spinal fluid in acute myalgia with meningism in children, as recently reported by Lindberg, resembled those of poliomyelitis with a mixed-cell pleocytosis, a luetic gold curve, and a normal or increased sugar content. It is suggested that the one disease may be a harmless pathomorphic variant of the other, and that testing the serum of patients convalescent from epidemic myalgia against poliomyelitis virus might be instructive.

23 Vitamin C Deficiency in Gastric Disease

W. THIELE (*Dtsch. med. Wschr.*, May 28, 1937, p. 855) maintains that the conventional treatment of various diseases of the stomach with a diet consisting exclusively of milk, eggs, rusks, white bread, etc., over a long period may be a potent cause of serious vitamin C deficiency. He has demonstrated that such a deficiency is the cause of many gastric haemorrhages. He controls the vitamin C metabolism in the body by quantitative tests of the ascorbic acid in the urine. In a consecutive series of 725 examinations of patients suffering from diseases of the stomach he has studied the excretion of ascorbic acid given parenterally or in the form of various foods rich in vitamin C. When patients were on a conventionally sloppy diet of milk, bread, etc., he found the daily excretion of ascorbic acid was often under 30 mg. The figure became higher when this diet was replaced by an ordinary one. When ascorbic acid was given by parenteral injection to patients with vitamin C deficiency, at first only a small fraction of the ascorbic acid could be recovered from the urine, but as the injections were continued the amount excreted rose, showing that the metabolism of vitamin C in the body had improved. These investigations, conducted in a public hospital in Dresden, led to the treatment of various gastric conditions with foods rich in vitamin C, such as the pressed-out juices of grapes, tomatoes, carrots, spinach, etc., in addition to the conventional dietary for such cases. In carcinoma of the stomach the excretion of ascorbic acid was found as a rule to be much below normal, and this was evidently because anacidity or achylia had interfered with metabolism of the vitamin C given in the food. The acidity of the gastric juice should therefore be determined, and if anacidity is found, the administration of vitamin C by the parenteral route considered.

24 Diagnosis of Pulmonary Tuberculosis

U. GAD (*Nord. med. Tidskr.*, May 22, 1937, p. 815) has undertaken gastric lavage on two consecutive mornings, using 300 c.cm. of water, in 271 patients admitted to a Danish hospital for tuberculosis. All these patients presented no radiological evidence of active pulmonary tuberculosis. In as many as thirty-four cases tubercle bacilli were found by this means, and the patients were classified in five groups. Out of ninety-seven patients in the first group who were admitted to hospital for observation, although the radiological picture was perfectly normal, there were eleven in whose stomachs tubercle bacilli were found. In the second group of sixty-six patients there was a history of pulmonary tuberculosis earlier in life, but the radiological picture showed no sign of active disease. The gastric lavage, however, yielded tubercle bacilli in five of these cases. In the third group of seventy-five patients suffering from pleuritis there were twelve whose stomachs contained tubercle bacilli, although in none of these cases was there any radiological evidence of a tuberculous focus in the lungs. In the fourth group of ten cases in which the radiological findings were indicative of hilus tuberculosis, but in which there was no sign of any infiltration of the lungs, there were as many as six whose stomachs contained tubercle bacilli. In the fifth and last group of twenty-three patients, representing a great variety of morbid conditions such as erythema nodosum, spontaneous pneumothorax, emphysema, bronchitis, etc., there was not one case in which gastric lavage yielded tubercle bacilli. Thus it was only in this last group that the radiological and bacteriological tests agreed in being invariably negative. The author concludes that the radiological examination of the lungs often fails to detect active pulmonary tuberculosis, and that in many cases gastric lavage repairs this diagnostic failure.

25 Dental Trigeminal Neuralgia

W. BAUER (*Wien klin. Wschr.*, May 22, 1937, p. 681) distinguishes between true trigeminal neuralgia and the neuralgia caused by dental affections, although this may in its later stages simulate the true trigeminal neuralgia. The main causes of the dental type are chronic inflammatory conditions of the dental pulp and of the paradental tissues. These affections may give rise to changes in the Gasserian ganglion. In all cases of trigeminal neuralgia a thorough examination of the teeth and jaws is indicated, particularly by means of radiology. The dental trigeminal neuralgia usually subsides after the affected teeth have been attended to; on the other hand a very severe trigeminal neuralgia may follow a dental operation in an otherwise healthy patient. These neuralgias, however, are usually cured in from three to fourteen days; *x*-ray treatment combined with aconitine therapy may be of value.

Surgery

26 Gastro-duodenal Ulcer

P. SAVY, R. FROMENT, A. CHAPUY, and M. JEUNE (*Presse méd.*, April 21, 1937, p. 609) describe the common signs and symptoms of gastro-duodenal ulcer, including pain in the epigastrium with dorsal or thoracic radiation, which appears some time after meals and is relieved by the ingestion of food. Pain usually lasts for about three weeks, with intervals of remission for several months. As a result of observation in 215 cases of peptic ulcer certain anomalies have been noted. In some cases the pain may be felt in an unusual region, such as the dorso-lumbar, and instances are given in which a duodenal ulcer caused pain of the pseudo-nephritic type or pain in the left lumbar area. Hypogastric and pseudo-intestinal types were also seen, in the first of which the pain started in the left iliac fossa and in the second in the appendicular region. In other instances the pain originated in the thoracic region before extending to the abdomen. It was noticed that in certain cases pain was not relieved by eating, and on occasion it occurred soon or immediately after taking food. Anomalies regarding the duration of the attacks were also observed: two cases are quoted in which they lasted only three days, and another

in which a period of quiescence lasting for eighteen months was followed by pain several times a day with only an interval of one or two days between. Other anomalies which may lead to a mistaken diagnosis include raised temperature, vomiting, and pain simulating that of cholecystitis. In those cases which do not present the typical symptoms of peptic ulcer radiography is necessary in order that a correct diagnosis may be made.

27 Thyroidectomy

A. SEBASTIANI (*Policlinico*, Sez. Prat., May 17, 1937, p. 953) refers to the recent paper by Antonucci (ibid., March 29, p. 601) and records his observations on nine cases of hypertension in which thyroidectomy was performed with the following results. In four cases the operation had a hypotensive effect which seemed to be permanent; in two this effect lasted for a few months and then there was a return to the pre-operative condition. In one case there was no effect, and in two there was a rise of pressure, but in one of these the patient had been taking a hypertensive drug for a long period, and in the other a retrosternal goitre was discovered. Sebastiani states that, although his series is too small to be conclusive, such a severe operation as thyroidectomy is not justifiable except in very severe cases.

28 Electro-resection in Prostatic Hypertrophy

K. SCHNEIDER (*Z. Urol.*, 1937, **31**, 5, 313) summarizes the results of resection of the hypertrophied prostate in 128 cases treated during the last three years at the hospital of the Göttingen University. The results were good in 73 per cent. and unsatisfactory in 15 per cent. The mortality amounted to 12 per cent., but whereas the mortality from electro-resection amounted to 2.5 per cent. only, that from surgical resection was 27 per cent. The mortality among patients treated by conservative means was 29 per cent. Electro-resection showed also a larger proportion of good therapeutic results than did the surgical resection. In 50 per cent. of the cases treated by electro-resection the operation was carried out in one sitting. The disadvantage of this method of treatment is that the resection is incomplete and the adenomatous tissue is left behind which may ultimately become carcinomatous. But this disadvantage is largely compensated for by the lower mortality among the patients treated in this way. Also, electro-resection can be carried out with beneficial results in patients unable to stand the strain of surgical resection.

Therapeutics

29 Serum Therapy in Scarlet Fever

H. LUTZ (*Med. Welt*, May 8, 1937, p. 641) reports on 1,659 cases of scarlet fever of which 1,127 were treated with serum and 532 symptomatically. Three types of sera were used: (1) an anti-toxic and anti-bacterial horse serum to which 0.5 per cent. phenol was added to conserve it; (2) an anti-toxic horse serum without phenol; and (3) an anti-toxic and bactericidal streptococcal serum. The best results were obtained with the first of these. The sooner the patient received serum therapy the better was the result. Seventy-three per cent. of cases showed a good or moderately good result when injected on the first day, but this was reduced to only 20 per cent. when injections were given after the fourth day of the disease. Patients treated with serum had a normal temperature and no rash usually about twenty-four hours sooner than non-treated patients. The effect of serum treatment in the second stage was not marked. The most common complication, lymphadenitis, was found in 50 per cent. of treated and non-treated cases. Lutz believes, however, that complications in treated cases ran a milder course than those in non-treated cases. Serum disease occurred in 10 per cent. of cases. Serum therapy did not appear to influence the mortality rate, which in treated cases was 1.1 per cent. and in non-treated cases 1.7 per cent. The author advises the administration of serum in every case of scarlet fever admitted within the first four days of the disease, and in those in which the temperature has not fallen to normal on admission. 25 c.cm. of serum are injected intramuscularly in adults and 10 to 15 c.cm. in children.

30 Gonococcal Arthritis

P. LOUP (*J. Urol.*, March, 1937, p. 238) refers to the serious complications, reported by Dr. Marsan, which have followed the introduction of radio-active substances, particularly when intravenous injections of thorium X have been given, in cases of gonococcal arthritis. Anaemia has sometimes resulted, and in one instance a patient developed an osteosarcoma of the right femur, from which he died, several years after intravenous injections of thorium X had been given. Two personal cases are reported in which this treatment was successful and without complications up to the present. In the first a young man, aged 19, was suffering from a severe attack of gonorrhoea which was affecting the joints of the hand. A subcutaneous injection of anti-gonococcal serum was given with success. The patient only attended irregularly and returned after several days with severe arthritis of the right knee, which was swollen, painful, and useless. Further injections were given and local treatment applied, but the condition of the knee became steadily worse. Intravenous injections of a solution of thorium X were given, and the knee, which had been ankylosed before the injections began, could soon be flexed to a right angle, and after three months' movement was completely normal. Seven years later the patient was in perfect health with no disability of the knee-joint. In the second instance a woman, aged 28, had been receiving an intravenous injection of "gonocrine" every other day, but in spite of this a typical arthritis developed in the wrist with a synovitis of the right thumb. Anti-gonococcal serum was given daily without any effect on the arthritis, and so injections of the same solution of thorium X were tried, with the same good result as in the former case. After three years the patient was still in good health. The danger of this form of treatment as emphasized by Dr. Marsan is a strong deterrent to its universal use.

Neurology

31 Acute Primary Polyneuritis

S. DRAGANESCO and E. FAÇON (*Paris méd.*, May 8, 1937, p. 411) describe a series of cases of acute primary neuritis, of unknown origin, which occurred in Rumania, and almost amounted to an epidemic. The onset was of an acute nature, but the symptoms and development of the disease did not appear to be connected with any particular infection such as poliomyelitis or encephalitis lethargica. The majority of the patients were between the ages of 20 and 50. The first symptoms were those of a general feverish attack which lasted for three to five days, and was followed by paraesthesia of the limbs, particularly in the distal parts, with sharp pain radiating along the course of the nerves. In the majority of cases there were motor disturbances in the lower limbs with partial or complete paralysis. The cranial nerves were affected in some cases, and in three instances evidence of an ascending paralysis was found. The tendon reflexes disappeared in the affected areas. The skin reflexes were usually abolished and pressure over the muscles caused acute pain, while difficulty with micturition was sometimes present. In the majority of the cases the condition lasted from three to five months, and in nearly every instance there was a complete recovery with no sequelae. Examination of the cerebro-spinal fluid showed typical changes with albumino-cytologic dissociation and sometimes an increase in the albumin and globulins present. It is thus evident that

the meninges were involved in the pathological process. The Wassermann reaction was negative. It is considered that this was a primary infection of the nervous system due to an ultra-virus acting on the peripheral nerves through the nerves themselves, the spinal ganglia, or the nerve roots. Thirteen cases are reported, in all of which recovery took place.

32 Hypothalamus in Diabetes Mellitus

L. A. MORGAN *et al.* (*J. nerv. ment. Dis.*, February, 1937, p. 25) describe constant changes which they found in the hypothalamus in cases of diabetes mellitus. The brains of fifteen diabetic patients were compared histologically with those of five controls. A personally modified iron haematoxylin stain was used and special attention was paid to the cells in the region of the third ventricle. It was found that the nucleus paraventricularis showed definite pathological changes in all the fifteen cases examined. There was marked loss of nerve cells, which averaged 40 per cent. of the normal throughout the series. The changes were diffuse throughout the nucleus; the cells that remained showed all stages of chromatolysis; only a small proportion could be classed as normal. Changes in the other hypothalamic nuclei were inconstant, but in six cases the substantia grisea and the nucleus tuberis lateralis showed cell damage. It is remarkable that Morgan and Gregory have found similar alterations in these nuclei in cases of psychosis, and that in five of the six cases described definite mental changes were also observed. The relation of these pathological findings to the other evidences of a centre in the hypothalamus regulating carbohydrate metabolism is discussed.

33 Paroxysmal Trigeminal Pain due to Acoustic Neuroma

H. L. PARKER (*J. Neurol. Psychopath.*, January, 1937, p. 256) records two cases of acoustic neuroma in which very severe pain was complained of. The pain was paroxysmal and simulated true tic douloureux very closely. It was situated in the distribution of the second and third division of the trigeminal nerve. In one case an injection of alcohol relieved the pain completely. It is observed that pain exactly simulating tic douloureux has been described in cases of disseminated sclerosis, and plaques have been demonstrated in two of these cases at the root entrance zone of the fifth nerve on the side of the pain. Here also the pain was relieved by alcohol injections or by fifth nerve section. In trigeminal neuralgia the cause of the pain is unknown, although Harris's postulate that it is due to septic neuritis of the terminal filaments of the nerve has been widely accepted. In acoustic neuroma and in disseminated sclerosis a definite site of damage to the nerve can be demonstrated, and an identical pain is produced and relieved. It is suggested that in all these conditions a state of exaggerated excitability of the fifth nerve exists, and that the explosion of pain depends entirely on comparatively slight incoming stimuli, which are abolished by section of the nerve, even if the nerve section is distal to the position of damage to the nerve. When this pathological state of hyperexcitability exists something in the nature of facilitations may occur in the nerve fibres to translate trivial peripheral stimulation into excruciating pain.

34 Meningeal Reactions

E. BOZZI (*Ann. Oto-laryng.*, February, 1937, p. 98) discusses the many methods which have been recommended in the treatment of brain abscess, from free incisions of the dura to drainage by needle puncture. The main preoccupation of surgeons has been (1) to cause the formation of adhesions of the dura, arachnoid, and pia mater round the surface area through which the abscess has to be reached; and (2) not to interfere with any protective adhesions which have already formed in the course of the disease process. The author experimented with rabbits and studied the defensive reactions of the meninges and of the cerebral substance in the presence of rubber tubes, acting as foreign bodies. In a first series of animals a circular piece of bone with a diameter of 1 cm. was removed from the parietal bone. The dura was pierced by an ordinary Record syringe needle, which was pushed into the brain substance for a distance of 7 to 8 mm. A hollow sound was then substituted, and finally a small rubber tube. This procedure imitates the operative technique of Lemaitre. In a second series of rabbits a small tampon soaked in a 10 per cent. solution of tincture of iodine was placed against the dura for forty-eight hours. After this time had elapsed the dura was pierced and the drainage tube placed in position. In a third series much larger pieces of bone were removed, the dura was incised by a fairly large cross-shaped incision, and two drainage tubes were placed in position side by side. In a fourth series the author used the iodized tampons for forty-eight hours before practising the large incision. The surviving animals were killed after eight days, and the condition of the meninges and brain round the drainage tract was examined histologically. The animals of the first and second series had survived in good condition. Those of the third series usually died thirty-six hours after the intervention, with signs of encephalitis and meningitis, a large cerebral hernia forming and extruding the drainage tube. Those of the fourth series were alive after forty-eight hours, and the tube was maintained in position in spite of some encephalitis and herniation.

35 Surgery of Cerebral Apoplexy

A. KAPLAN (*N. Y. St. J. Med.*, May 15, 1937, p. 934) points out that cerebral apoplexy may occur in patients without hypertension, syphilis, or renal disease. If the intracerebral haemorrhage is small they may live for years handicapped by a residual paralysis, if large they succumb to the initial vascular disturbance. Although in the latter surgical intervention is rarely considered, Kaplan has found records of several cases in the literature in which recovery followed operation. He adds two successful cases of his own, which were operated on because of a remote possibility of subdural haematoma following trauma in one case, and because cerebral abscess, neoplasm, or thrombosis was suspected in the other. The differential diagnosis between cerebral haemorrhage and thrombosis is not always easy, and the author lays stress on the following points: cerebral haemorrhage is most frequent between 40 and 50; it is commonly heralded by sudden severe headache or vomiting; the progression of signs is more frequent in it, and coma and convulsions are twice as frequent as in cerebral thrombosis; stiffness of the neck and increased cerebro-spinal pressure (over 300 mm.) is very much more common in cerebral haemorrhage; peripheral and retinal arteriosclerosis is further advanced in cerebral thrombosis. Kaplan concludes that the criteria for surgical intervention in cases of cerebral haemorrhage are still indefinite, but it is justifiable in young or middle-aged patients who survive for twenty-four to forty-eight hours and whose symptoms are progressing. It is contraindicated in those with advanced hypertension or renal disease, or those with massive haemorrhage as revealed in the cerebro-spinal fluid. A preliminary ventriculogram for precise localization of the lesion is advisable before operation.

36 Neurological Complications of Vaccines and Serum Therapy

L. J. ROBINSON (*New Engl. J. Med.*, May 13, 1937, p. 831) states that, although rare, neurological complications following the administration of every type of vaccine and serum have been described. He reports fully a personal case of peripheral nerve paralysis after the prophylactic administration of T.A.B. vaccine. The usual clinical picture is that of a lower motor neurone paralysis occurring between one and sixty days after the injection. Any peripheral or cranial nerves, and less commonly the spinal cord or higher centres, may be affected. Serum sickness,

urticaria, and atrophy may be present, but are not invariable. Residual paralyses persist in a large number of cases. Central nervous system involvement may show itself in the form of an anaphylactic response, some bizarre nervous manifestation, or some typical clinical picture of central nervous system disease. The prognosis is guarded as to recovery in peripheral involvement, and bad in central nervous system involvement. In the differential diagnosis anterior poliomyelitis, lead poisoning, diabetes, alcoholism, avitaminosis, and diseases of the cord and higher centres must be borne in mind. The exact aetiology of these neurological complications is unknown. It was thought that they were due to perineural oedema, a foreign protein reaction, a specific neurotoxin, or a local manifestation of an attenuated virus disease. The author thinks that they may be due to phenol, which is the preservative used in vaccines and sera, and the effect of which is almost entirely confined to the central nervous system. Necropsy material is scanty and the findings varied and inconclusive. Neurological complications cannot be foreseen, but should not contraindicate the administration of vaccines or sera. When they do occur rest is indicated in the early days, followed by infra-red therapy, gentle massage, passive then active movement, and, later, interrupted negative galvanic current.

Obstetrics and Gynaecology

37 Oestrin in the Urine

B. QUENTAL (*Ann. bras. Ginec.*, April, 1937, p. 307), employing Siebke's technique, showed that the excretion of oestrin in the urine passed between the thirteenth and seventeenth day of the intermenstrual period by sixteen women, aged from 18 to 32, with a normal menstrual rhythm, varied from 116 to 164 mouse units in the twenty-four hours. In four cases of primary amenorrhoea he found that the excretion of oestrin was lowered to less than 60 units; in each of thirty-eight cases of secondary amenorrhoea, the duration of which had varied from a few months to a few years, the excretion of oestrin was lowered; and in twenty-three cases of oligomenorrhoea the excretion was also diminished. In three specimens of urine from cases of excessive menstruation 460 units were found in the first, 612 in the second, and 244 units in the third.

38 Menstruation after Hysterectomy

H. FUCHS (*Zbl. Gynäk.*, May 1, 1937, p. 1027) describes successful results in the preservation of menstruation after supravaginal amputation (1) by the insertion of a free endometrial transplant in the cervical wall, and (2) by the implantation of a Fallopian tube in the cervical canal. The first method is specially suitable when the oviduct is diseased and unavailable for transplantation, the latter when the corporeal endometrium is unhealthy. The true menstrual nature of the cyclical bleedings which follow in the second case is open to discussion, although considerable evidence pointing to tubal menstruation has lately been forthcoming; practically, however, it ensures that the patient escapes a "psychical trauma." The endometrial transplant is sutured to a freshened area of the posterior cervical wall by stitches passing through the whole of the latter and uniting it to the posterior surface of the stump; all are covered by vesical peritoneum with the object of preventing subsequent ectopic gestation. When this procedure is chosen it is important to exclude the possibility of malignant disease. Careful examination of both corporeal endometrium and cervical epithelium should be made and should include a microscopical examination if the appearances arouse suspicion. This transplantation was followed by regular periods in thirteen out of twenty-three cases and by irregular menstruation in six, although the average age was 41, and half of these myoma-bearing patients had ovarian cysts or other benign ovarian tumours. Fuch's second method —namely, cervical implantation of a Fallopian tube—is similar to Strassmann's tubal grafting into the amenorrhoeic atrophic uterus. Strassmann's operation was successful in all his six cases, whereas Fuchs had four satisfactory results in seven patients of an average age of 39.

Pathology

39 Cerebro-spinal Meningitis

T. PACKALÉN (*Finska LäkSällsk. Handl.*, April, 1937, p. 313) gives an account of an outbreak of cerebro-spinal meningitis in a guards regiment in Viborg, where he undertook bacteriological examinations of the patients and their contacts, as well as of non-contacts. It was significant that meningococci were found with equal frequency in the throats of healthy soldiers whether they were contacts or non-contacts, old soldiers or raw recruits, officers or men. In 111 contacts the incidence of the carrier state was 43 per cent., whereas it was 40 per cent. for the 156 non-contact soldiers, 44 per cent. for old soldiers, 40 per cent. for recruits, and 37 per cent. for officers. While the frequency of the carrier state in Viborg was invariably high, ranging from 37 to 45 per cent., a search among soldiers and medical students in Helsingfors showed only 10 to 12 per cent. to be carriers. In all the cases of cerebro-spinal meningitis the meningococci found in the cerebro-spinal fluid and throat conformed to the characteristics of the English types I or III; and while the meningococci found in two-thirds of the contacts belonged to one or other of these two types, this was the case with only about 3 per cent. of the meningococci found in non-contact carriers. The strains cultivated from the throat which did not belong to one or other of these types could not as a rule be found to correspond to any other English type. The author considers that these at present unclassifiable strains may be regarded as more or less avirulent.

40 Sclerodermia

R. GANTENBERG and H. ROSEGGER (*Med. Welt*, May 1, 1937, p. 597) believe that only the careful reporting of individual cases will elucidate the complicated pathogenesis of sclerodermia with its manifold symptoms. Sclerodermia has been held to be due to (1) a lesion of the central nervous system with damage to the nervous supply of superficial blood vessels; (2) a lesion of the superficial blood vessels themselves; (3) peripheral neuritis; (4) endocrine dysfunction—namely, hyperparathyroidism; (5) metabolic dysfunction—namely, disturbance of fermentation in the gastro-intestinal canal; and (6) infection following focal sepsis, scarlatina, etc. The authors report one case of localized and one of generalized sclerodermia. In both cases the condition began with acrocyanosis. The fingers became cyanotic, then pale, and later red. Sensory disturbances were marked, and finally the fingers were thickened and the patients experienced difficulty in closing the fist. In both cases pigmentation occurred. In the case of generalized sclerodermia subfebrile temperatures were found. In both chronic inflammatory changes were present which were regarded as non-specific allergic reactions. Eosinophilia was found in both cases. Hypercalcaemia was not observed in either case, nor any abnormal changes in the blood chemistry. The values of Weltmann's coagulation test were increased, denoting cirrhotic changes. The authors believe that this may be a valuable test in the differential diagnosis between sclerodermia and other forms of acrocyanosis. Dysfunction of anterior pituitary and ovary were noted in both cases. The authors believe that their two cases tend to confirm the allergic, infectious, and endocrine theories of pathogenesis rather than the neuritic and metabolic.

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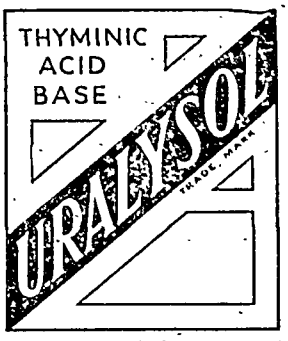
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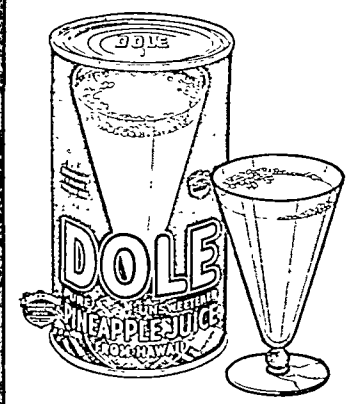
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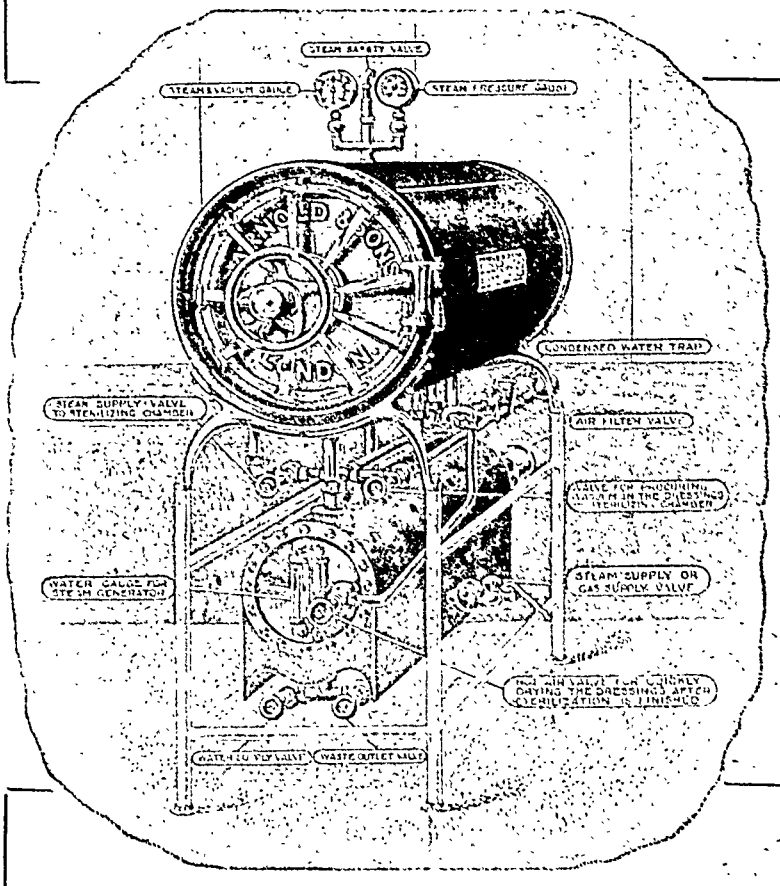
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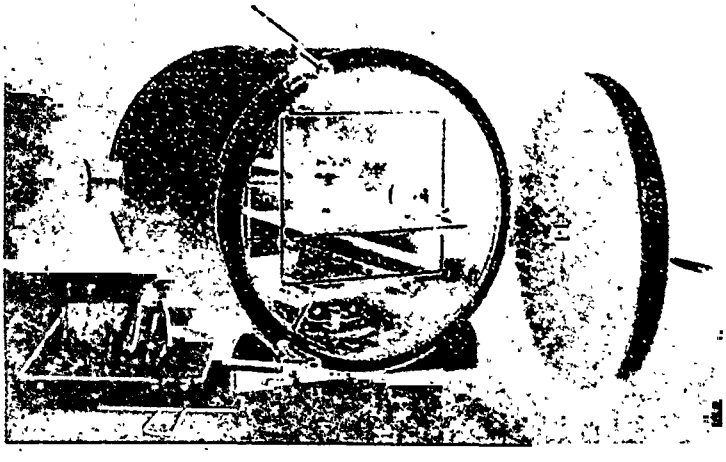
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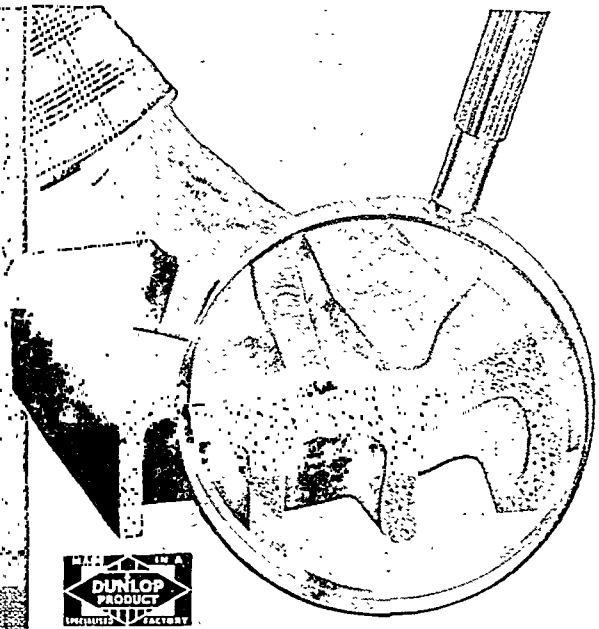
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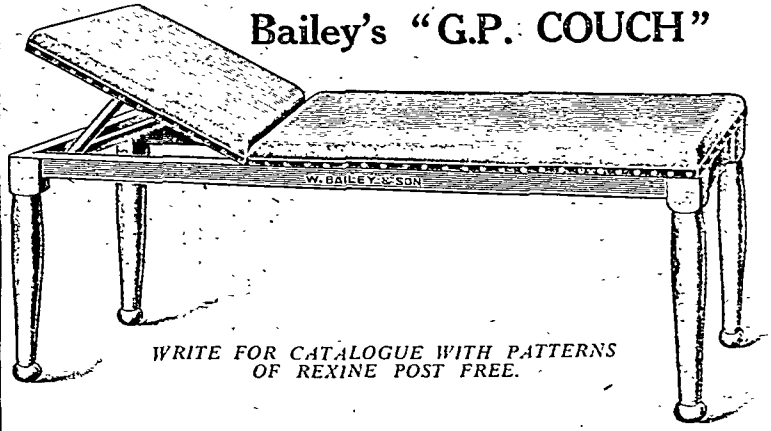
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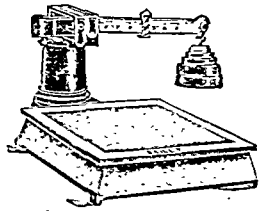
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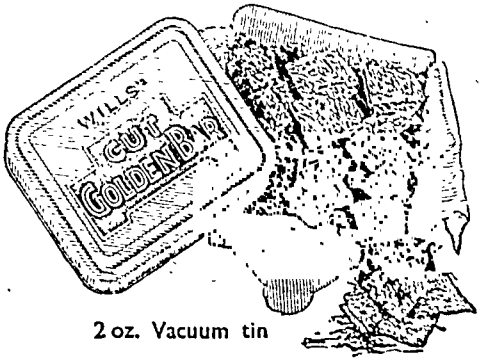
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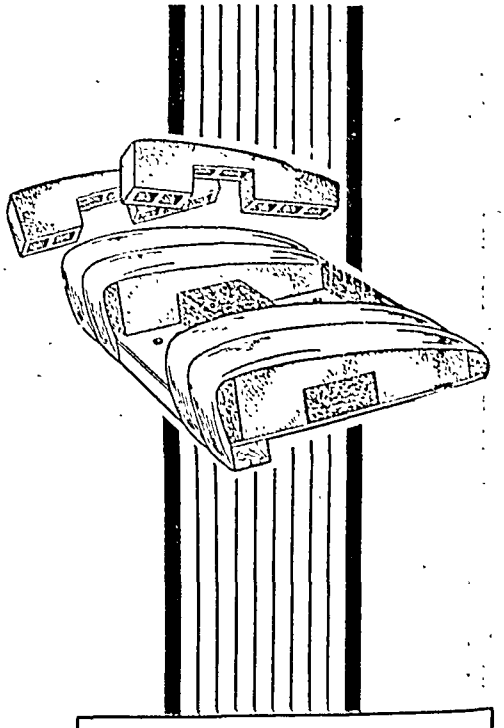
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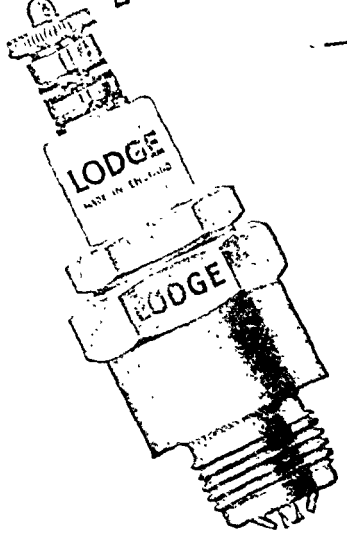
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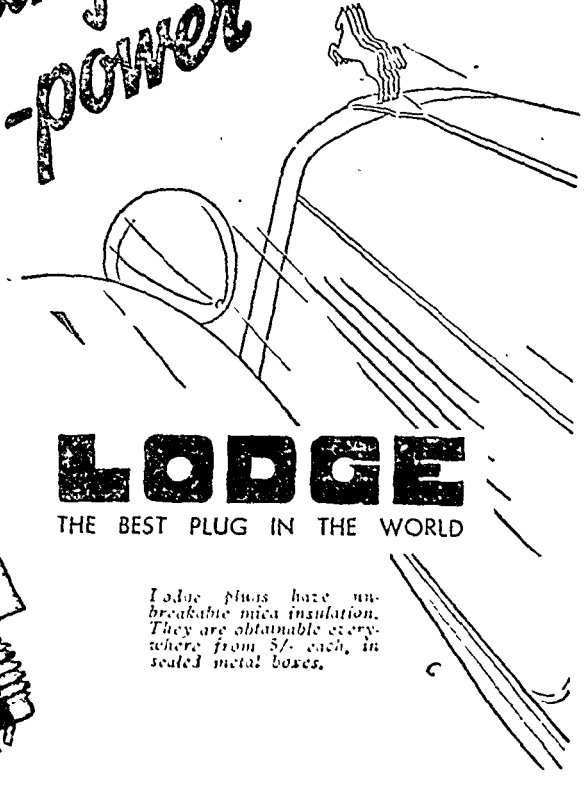
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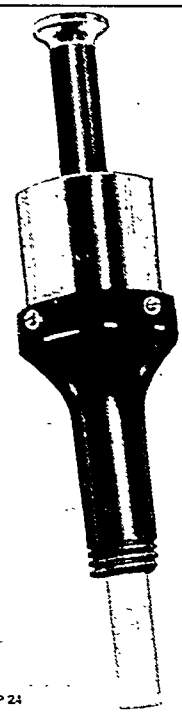
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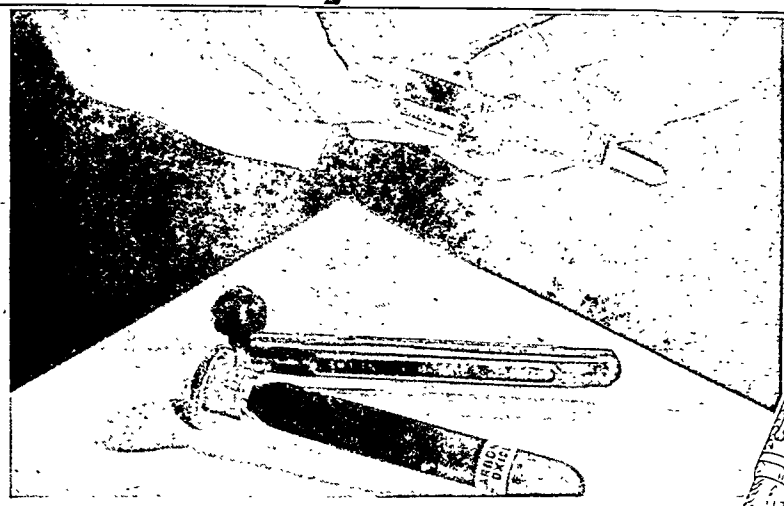
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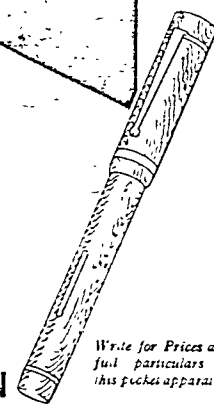


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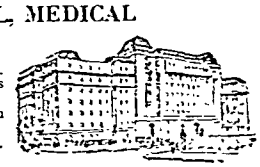
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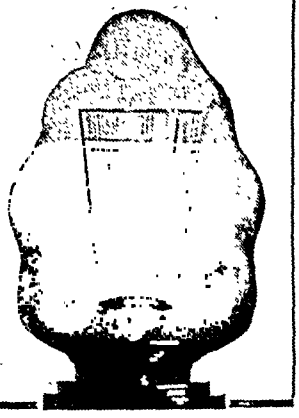
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F.R.C.S.

A Course of Instruction for the FINAL FELLOWSHIP EXAMINATION will begin on Monday, August 30th, 1937. Fees (exclusive of Operative Surgery), 25 guineas. Operative Surgery, 10 guineas.

Further particulars may be obtained from:—Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, London Hospital Medical College, Turner Street, London, E.1.

A DVICE ON THE CHOICE OF SUITABLE SCHOOLS AND TUTORS for BOYS and GIRLS with prospectuses of recommended establishments will be given free of charge to parents stating age of pupil, district preferred, range of fees and type of school required

J. & J. PATON
143, Cannon Street, London, E.C.4
Publishers of
Paton's List of Schools & Tutors. Post free 5/6.

THE CHARTERED SOCIETY OF MASSAGE AND MEDICAL GYMNASTICS

CHARTERED MASSEUSES and MASSEURS receive Hospital Training. They are qualified to administer MASSAGE, REMEDIAL EXERCISES, ELECTRICAL and LIGHT TREATMENTS.

The Society was granted a Royal Charter in 1920 in recognition of the high standard of work maintained. C.S.M.M.G. members do not advertise individually and pledge themselves to treat patients only under medical direction. All members of the Society are eligible for enrolment on the National Register of Medical Auxiliary Services.

Names and addresses of members practising in any district can be obtained from :—
The Secretary, C.S.M.M.G., Tavistock House (N.), Tavistock Square, London, W.C.1.
Telephone : Euston 1676-8.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2
(University of London)

THE WINTER SESSION WILL BEGIN ON OCTOBER 1st, 1937.

The Medical School provides courses in Preliminary, Intermediate and Final Subjects, and Students can join at once after matriculation.

SITUATION.—Between a large population providing clinical material, and one of the best residential districts, thus enabling students to live in close proximity to their work.

NEW BUILDINGS.—The new buildings, which cost £250,000, are now in use.

CLINICAL UNITS IN MEDICINE AND SURGERY.—Certain members of the medical and surgical staff devote their whole time to teaching and research.

NEARLY 1,000 BEDS available for teaching—additional clinical material being provided by affiliation to an Infirmary and other Institutions.

ENTRANCE AND RESEARCH SCHOLARSHIPS to the value of £1,200 are awarded annually.

APPOINTMENTS, varying in value up to £750 per annum, open to students after qualification.

For further particulars and illustrated prospectus apply to the School Secretary.

C. M. WILSON (M.C.), M.D., F.R.C.P., *Dean.*

F.R.C.S. (Edin.).

POSTAL and ORAL COURSES.

Full details of above and Private Tuition.—H. C. ORRIN, F.R.C.S., Surgeon's Hall, Edinburgh.

NORTH-EAST LONDON POST-GRADUATE COLLEGE.

PRINCE OF WALES'S GENERAL HOSPITAL, N.15.

The Practice of the Hospital is limited to Medical Practitioners. Particulars from J. BROWNING ALEXANDER, M.D., Dean

EXPERIENCED COACHING IN PHYSIOLOGY, Pathology, and Medicine, by M.D. Lond. (Hons.), M.R.C.P.Lond., B.Sc., Physiology, Lond. All exams. Classes held.—Address, No. 7502, B.M.A. House, Tavistock Square, W.C.1.

GOVERNMENT OF INDIA

Applications are invited for the appointment of DIRECTOR OF THE ALL-INDIA INSTITUTE OF HYGIENE AND PUBLIC HEALTH, CALCUTTA. The Director also acts as Professor of Hygiene and Public Health Administration.

A Diploma in Public Health of a recognized University and ability to teach the subject of Hygiene in its widest aspects are essential qualifications.

The appointment will be made on agreement for five years in the first instance, extensible on such terms and for such periods as the Government may decide. Pay Rs. 2,500 (£2,250 per annum approx.), rising by biennial increments of Rs. 50 to Rs. 2,750 a calendar month (£2,475 per annum approx.) plus Overseas Pay of £13 6s. 8d. a month. Free passage to India and return on satisfactory termination of services. Provident Fund. (Return passage and Overseas Pay admissible only to officer of non-Asiatic domicile.) Rupee = 1s. 6d. approx.

Applications will be accepted from officers of the Indian Medical Service and of Provincial Services under Government in India, in respect of whom special conditions will apply.

Further particulars and forms of application may be obtained, on application by postcard, from the High Commissioner for India, General Department, India House, Aldwych, London, W.C.2. Last date for receipt of applications July 24th, 1937.

MEDICAL RADIOLOGY.

DIPLOMA COURSES

ST. BARTHOLOMEW'S HOSPITAL,
E.C.1.

A complete course of study for:—

(a) The ACADEMIC DIPLOMA of MEDICAL RADIOLOGY, University of London, and

(b) The DIPLOMA of MEDICAL RADIOLOGY, Conjoint Board,

is held annually at St. Bartholomew's Hospital, E.C.1. The course, which covers both Part I and Part II of the examination, begins in October each year and occupies nine months.

FEE : 50 Guineas. As the number of students that can be taken is limited, applications for admission should be made soon. They should be addressed to the Dean, St. Bartholomew's Hospital, E.C.1.

BOROUGH OF LUTON.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOLS MEDICAL OFFICER.

Applications are invited from registered medical practitioners for the above-mentioned appointment, at a *commencing* salary of £500 *per annum, rising* by annual increments of £25 to £700 per annum, with a car allowance of £40 per annum.

Applicants must hold the diploma of Public Health and have had experience in infectious diseases work. Experience in school medical and child welfare work will be an advantage. The duties will be largely clinical, but the post will offer an opportunity for experience in all the usual *public health duties.*

The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the successful applicant will be required to pass satisfactorily a *medical examination.*

Forms of application and full particulars relating to the appointment may be obtained from the undersigned, to whom applications, together with copies of three recent testimonials, enclosed in an envelope endorsed "Assistant Medical Officer of Health," must be delivered not later than Tuesday, July 20th, 1937.

Canvassing, directly or indirectly, will disqualify.

Town Hall, W. H. ROBINSON,
Luton. Town Clerk.
July 7th, 1937.

LIVERPOOL ROYAL INFIRMARY.
(Medical School. 336 Beds.)

Applications are invited for the whole-time appointment of MEDICAL TUTOR AND REGISTRAR as from October 1st, 1937.

Salary £200 per annum.

Applications, giving details of academic qualifications and experience, should be sent to the undersigned.

WM. RUTTER,
Gen. Supt. and Sec.

COUNTY BOROUGH OF OLDHAM.

THE MUNICIPAL HOSPITAL.

RESIDENT SURGICAL OFFICER.

Applications are invited from fully qualified *Medical Practitioners for the position* of *Resident* Surgical Officer at the Municipal Hospital

The appointed candidate will work under the direction of the Medical Superintendent and the Visiting Surgeons.

The duties are mainly surgical (general) and emergency), and preference will be given to candidates possessing the F.R.C.S. or other higher surgical qualifications and previous surgical *experience.*

The appointed candidate will deputise for the Medical Superintendent when required, and undertake such duties as the Council may direct

He must devote his whole time to the duties of the office, and will not be allowed to engage in private practice.

The salary will be at the rate of £500 per annum, rising by annual increments of £25 to £550, together with board-residence and laundry. All fees and emoluments of every kind whatsoever must be handed over to the Corporation.

The appointment is for a period of two years, and is terminable by two months' notice on either side. It is also subject to the passing of a satisfactory medical examination

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be forwarded to the Medical Officer of Health, Town Hall, Oldham, and endorsed "Resident Surgical Officer," so as to reach him not later than July 26th, 1937.

Canvassing in any form will be a disqualification.

JOSEPH J. WILLIAMS, LL.D.
Town Hall, Town Clerk
Oldham.
July 5th, 1937.

BRIDGEND URBAN AND PENYBONT RURAL DISTRICT COUNCILS.

JOINT APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH FOR MATERNITY AND CHILD WELFARE.

The above Councils invite applications from fully qualified medical men or women for the post of whole-time Assistant Medical Officer for Maternity and Child Welfare work.

Candidates should have had three years' (at least) experience in the practice of their profession and special experience in

(a) Child Welfare
(b) Ante-natal work,

subsequent to qualification.

It is desirable that candidates should have—
(1) had experience in general practice,
(2) a diploma in Public Health.

The salary will be at the rate of £360 per annum, rising by increments of £25 per annum to £700 per annum. Two-thirds of the salary will be subject to a deduction of 5 per cent. in accordance with the provisions of the Local Government and Other Officers' Superannuation Act, 1922. Travelling expenses in the Penybont area will be paid by the Penybont Rural District Council.

The person appointed will be required to give his or her whole time to the work, and must not engage in general practice.

The appointment will be determinable by three months' notice on either side.

Applications, on forms to be obtained from me at the address below, are to be received by me at the same address not later than 10 a.m. on Monday, July 19th, 1937.

By Order,
Penybont Offices, W. E. BEVAN,
Coity Road, Clerk to the Penybont
Bridgend, Glam. Council.
July 5th, 1937.

ROYAL NAVAL MEDICAL SERVICE.

Vacancies exist for Medical Officers in the Royal Navy, and applications are invited for entry in October, 1937.

Candidates below the age of 28 years are preferred, and they must be registered under the Medical Acts. No examination in professional subjects will be held, but candidates will be required to attend for interview by a Selection Board.

Selected candidates will be entered for Service for a period of three years in the first instance, which may be extended to five years at the discretion of the Admiralty.

At the end of three years' service officers may retire with a gratuity of £400, but those who serve for five years will receive £1,000.

At the end of five years' Short Service permanent commissions will be given to selected officers who wish to make the Naval Medical Service their permanent career. Officers transferred to the permanent list will receive a gratuity of £1,000 (less Income Tax).

Opportunities are available for officers on the permanent list to specialise, and ample provision is made for Post-Graduate study.

Copies of the regulations for entry and conditions of service, including rates of pay and allowances, may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1, and from the Deans of all Medical Schools.

Applications for entry from intending candidates must be received not later than August 31st, 1937.

THE KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION.

ASSISTANT TUBERCULOSIS MEDICAL OFFICER (Resident).

Applications are invited from duly registered medical practitioners (male, single) for the post of Assistant Tuberculosis Medical Officer (Resident) at the Sully Hospital, Sully, Glam. (300 beds for the treatment of pulmonary tuberculosis), situate between Penarth and Barry.

Salary £500 per annum, rising by annual increments of £25 to £700 per annum, less the value of emoluments amounting to £100 per annum.

Preferably candidates should have had six months' resident experience in a special institution (hospital or sanatorium) for the treatment of pulmonary and/or non-pulmonary tuberculosis, with eighteen months' experience in general clinical work, of which six months should have been spent in a hospital not confined to the treatment of tuberculosis. Experience in anaesthetics also desirable.

The person appointed to the above post will be required to pass a medical examination and to contribute 5 per cent. of his salary to the Superannuation Fund of the Association. Applicants not already in the service of the Association must be under 45 years of age.

Applications, stating age, qualifications, experience, etc., together with copies of three recent testimonials, should reach the undersigned not later than Thursday, July 15th, 1937.

Memorial Offices, Westgate Street, Cardiff. D. A. POWELL, Principal Medical Officer.

DURHAM COUNTY AND SUNDERLAND EYE INFIRMARY.

HOUSE SURGEON wanted; outdoor; from middle August. Must have ophthalmic experience. Salary £350, rising by annual increments of £50 for two years.

Applications, with copies of three recent testimonials, to be sent to JOHN BUTTERFIELD, Secretary, Eye Infirmary, Stockton Road, Sunderland.

MERTHYR GENERAL HOSPITAL. (118 Beds.)

RESIDENT HOUSE SURGEON required for a period of six months.

Salary at the rate of £150 per annum, with board and laundry. Applications, stating age, nationality, qualifications and accompanied by three (copies only) recent testimonials should be addressed to the Secretary of the Merthyr General Hospital on or before July 20.

CITY OF PORT-OF-SPAIN.

APPOINTMENT OF A MEDICAL OFFICER OF HEALTH.

The Port-of-Spain City Council invite applications for the post of Medical Officer of Health for the City of Port-of-Spain.

The duties of the office are as set forth in the bye-laws made by the Central Board of Health and published in the Trinidad Royal Gazette of October 25th, 1917, page 1975-77.

Every applicant must be, or entitled to be, a member of the Medical Board of Trinidad and shall be the possessor of a Diploma of Public Health, Sanitary Science or State Medicine, registered or entitled to be registered in Great Britain and Ireland.

The office is a whole time one and pensionable under the provisions of the Municipal Corporations (Pensions) Ordinance, No. 29 of 1936. The salary attached to the post is £800 per annum, rising by equal annual increments of £25 to £1,000, with a travelling allowance of £75 a year.

The person appointed will be required to furnish a bond in the sum of £100 for the due performance of his duties.

Applications, stating age, qualifications and experience, should reach the undersigned at the Town Hall, Port-of-Spain, Trinidad, B.W.I., not later than July 31st, 1937.

The Town Hall, Port-of-Spain, Trinidad, B.W.I. April 29th, 1937. E. PRADA, Town Clerk.

GLOUCESTERSHIRE JOINT COMMITTEE FOR TUBERCULOSIS.

Standish House Sanatorium, Stonehouse, Glos.

Applications are invited from registered medical men for the post of JUNIOR ASSISTANT MEDICAL OFFICER at the above Institution. No previous professional experience is necessary.

There are at present 250 beds, including men, women and children. There is an orthopaedic block.

The salary is £250 per annum, with board, furnished apartments, and laundry in addition.

The appointment is for six months (with the possibility of extension for a further period of six months), and may be terminable within that period by one month's notice on either side.

Applications, stating qualifications and age, and accompanied by copies of three recent testimonials, should be received not later than July 14th.

Shire Hall, Gloucester. RICHARD L. MOON, Clerk of the Joint Committee. June 24th, 1937.

COUNTY BOROUGH OF CROYDON.

PUBLIC HEALTH DEPARTMENT.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER FOR OBSTETRICS.

Applications are invited from qualified Medical Men or Women for the post of ASSISTANT MEDICAL OFFICER FOR OBSTETRICS. Candidates must have had practical hospital experience in Gynaecology and Obstetrics, and of ante-natal and post-natal clinics.

The appointment will be for twelve months, and the salary will be £300 per annum, with board, residence and laundry valued at £140. The successful candidate will have quarters at Mayday Hospital, Thornton Heath.

The Officer appointed will be on the staff of the Medical Officer of Health, and work under his administrative supervision.

Application forms may be obtained from the Medical Officer of Health, Town Hall, Croydon, on receipt of a stamped, addressed foolscap envelope, and should be returned to him not later than 11 a.m. on Monday, July 19th, 1937, together with copies of three testimonials of recent date. Canvassing in any form is prohibited.

Town Hall, Croydon. JOHN M. NEWNHAM, Town Clerk. June 23rd, 1937.

DEVON COUNTY COUNCIL (Medical Department).

Applications are invited from duly qualified medical practitioners for the appointment of ASSISTANT COUNTY MEDICAL OFFICER.

The salary, which is in accordance with the Askwith Scale, will be £500, rising by annual increments of £25 to £700.

The appointment will be subject to three months' notice on either side.

The person appointed must have special post-graduate experience in refraction work.

The successful candidate must provide a motor car for his work. Travelling and subsistence allowance will be paid in accordance with the Devon County Council Scale.

The successful candidate will be required to pass a medical examination and will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922.

Forms of application and conditions of appointment may be obtained from the undersigned, to whom they should be returned completed by July 17th, 1937, together with copies of not more than three recent testimonials.

4, Barnfield Crescent, Exeter. L. MEREDITH DAVIES, County Medical Officer.

LONDON COUNTY COUNCIL.

Applications invited from Medical Practitioners of at least one year's standing to undermentioned positions. Candidates must have held resident appointment in a general hospital for at least six months. Married quarters not available.

ASSISTANT MEDICAL OFFICERS (Grade IV.—Salary £350—£25—£425, with board, lodging, and washing.

(a) LEWISHAM HOSPITAL, Lewisham, S.E.13.—Surgical duties. Experience in obstetrics and gynaecology essential.

*(b) ST. ANDREW'S HOSPITAL, Devons Road, Bow, E.3.—Medical duties.

*(c) ST. CHARLES' HOSPITAL, St. Charles' Square, Ladbroke Grove, W.10.—Surgical and gynaecological duties.

*(d) ST. CLEMENT'S HOSPITAL, 2a, Bow Road, E.3.—Medical duties. Experience in mental diseases essential.

*(e) ST. MARY ABBOTS HOSPITAL, Marloes Road, Kensington, W.8.—Experience in obstetrics and gynaecology essential.

*(f) ST. MARY, ISLINGTON, HOSPITAL, Highgate Hill, N.19.—(Two positions) (1) Medical duties; (2) Surgical experience essential.

(g) ST. OLAVE'S HOSPITAL, Lower Road, Rotherhithe, S.E. 16.—Surgical duties, including fractures.

ASSISTANT MEDICAL OFFICERS (Grade II).—Salary £250 a year, together with board, lodging, and washing. Appointment for one year only in first instance (renewable for a second year under certain conditions).

*(h) LAMBETH HOSPITAL, Brook Street, S.E.11. Medical duties.

*(i) ST. FRANCIS' HOSPITAL (previously Constance Road Institution), East Dulwich, S.E.22.—Medical duties.

*(j) ST. GEORGE-IN-THE-EAST HOSPITAL, Raine Street, Wapping, E.1.—Duties mainly medical, experience in anaesthetics essential.

*(k) ST. NICHOLAS' HOSPITAL, Plumstead, S.E.18.—Duties mainly medical and experience in anaesthetics essential. Experience in midwifery desirable.

*(l) ST. STEPHEN'S HOSPITAL, 369, Fulham Road, S.W.10.—Duties mainly medical. Experience in anaesthetics essential.

(m) ST. OLAVE'S HOSPITAL, Lower Road, Rotherhithe, S.E.16.—General medical duties.

(n) ST. CHARLES' HOSPITAL, St. Charles' Square, Ladbroke Grove, W.10.—General medical duties.

* No accommodation for a woman.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health, Staff Division, 2A, County Hall, S.E.1, returnable by July 19th.

Canvassing disqualifies.

COUNTY BOROUGH OF READING.

BATTLE HOSPITAL.

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from registered medical practitioners for the appointment of resident assistant medical officer (male) at the above hospital, at a salary of £300 per annum, with board, residence, etc.

Candidates must be single and should not be more than 30 years of age.

The selected candidate will be required to work under the direction of the Medical Superintendent.

The appointment will be for a period of one year, and preference will be given to candidates who are reading for higher qualifications.

Forms of application may be obtained from the undersigned and must be returned, duly completed, together with copies of three recent testimonials, not later than Monday, July 19th, 1937.

Canvassing, either directly or indirectly, will disqualify.

Town Hall, Reading. July 7th, 1937. C. S. JOHNSON. Town Clerk.

CITY OF BIRMINGHAM EDUCATION COMMITTEE.

APPOINTMENT OF SCHOOL MEDICAL OFFICER.

Applications are invited from Registered Medical Practitioners for the appointment of School Medical Officer. Salary £1,100 per annum, rising by biennial increments of £50 to a maximum of £1,400 per annum.

The appointment will be subject to the provisions of the Birmingham Superannuation Scheme, 1926 (Local Government and other Officers' Superannuation Act, 1922).

Further particulars, with forms of application, may be obtained from the undersigned, to whom applications should be delivered not later than first post on the morning of Saturday, August 7th, 1937.

Canvassing disqualifies.

P. D. INNES. Chief Education Officer.

Education Office, Margaret Street, Birmingham, 3. June 26th, 1937.

LONDON COUNTY COUNCIL.

Applications invited for appointment as RESIDENT MEDICAL SUPERINTENDENT, Eastern Hospital, Homerton Grove, E.9 (621 beds), for acute infectious cases. Person appointed will be under direction of Medical Officer of Health, and must assist at other establishments of the Council if so required.

Salary £1,100—£50—£1,350, with unfurnished quarters, rate free. Candidates must have been qualified medical practitioners for at least five years, have been house physician or house surgeon in public general hospital and have had experience of administration of a hospital for infectious diseases. Experience in smallpox desirable, but not essential.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Clerk of the Council, County Hall, S.E.1, returnable by July 15th.

Canvassing disqualifies.

COUNTY BOROUGH OF PRESTON.

SHAROE GREEN HOSPITAL. (250 Beds.)

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER (female). Applications are invited from fully qualified and registered practitioners for the above appointment. Salary at the rate of £100 per annum, with full board and residence. The appointment will be for a period of six months, and at the end of this period the successful applicant may, subject to satisfactory service, be promoted to the post of Assistant Resident Medical Officer for a further period of not more than six months.

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should reach the Medical Superintendent not later than first post on Saturday, July 24th, 1937.

CORPORATION OF BARKING.

RESIDENT MEDICAL OFFICER.

Applications are invited before July 26th, 1937, from qualified medical practitioners for the designated appointment of Resident Medical Officer at the Council's Upney Maternity Hospital, comprising 24 beds.

Previous medical appointments in a maternity hospital and experience in ante-natal work is essential, and preference will be given to candidates holding or reading for membership of the College of Obstetrics and Gynaecology.

Salary £350-£25-£450, plus emoluments valued at £150 per annum.

Particulars of duties and application forms may be obtained from the undersigned.

Town Hall, Barking, Essex. S. A. JEWERS. Town Clerk.

LICENSED MENTAL HOSPITAL.

BURTON-IN-LONSDALE, VIA CARNFORTH.

Unless previously sold by private treaty there will be offered for sale by public auction at the Town Hall, Bentham, near Lancaster, on Wednesday, July 21st, 1937, at 2.30 o'clock a FREEHOLD RESIDENCE known as GRETA BANK, Burton-in-Lonsdale in the West Riding of Yorkshire, TOGETHER WITH grounds and cottages. The premises are LICENSED AS A MENTAL HOSPITAL for ten patients, and are situate in charming country, secluded yet readily accessible, and enjoying the utmost privacy.

For further particulars apply to the Auctioneers, Messrs. RICHARD TURNER AND SONS, Bentham (Tel. 8), or to the Solicitors, CLARK OGLETHORPE AND SONS, Bentham (Tel. 12) or Lancaster (Tel. 133).

CLAYTON HOSPITAL WAKEFIELD.

There is a vacancy for a FOURTH HOUSE SURGEON (Male, British), for which post applications are invited. The appointment is for six months in the first instance and the salary is at the rate of £150 per annum, together with board, residence and laundry.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be sent to the undersigned as early as possible.

The selected candidate will be expected to take up duties almost immediately.

J. H. GREAVES. President.

BRADFORD NEW ROYAL INFIRMARY. (345 Beds.)

RESIDENT MEDICAL OFFICER AND ASSISTANT PATHOLOGIST wanted (male). Salary £225. 12 months' appointment. There are 115 Medical Beds and two House Physicians. The successful applicant will be required to act as assistant to the Pathologist. Applications, stating age, qualifications and experience, and enclosing copies of three recent testimonials, should be received by the undersigned not later than July 21st, 1937.

J. J. BARRON. Secretary-Superintendent.

CITY OF BIRMINGHAM.

PUBLIC HEALTH DEPARTMENT.

DUDLEY ROAD HOSPITAL (920 Beds).

ASSISTANT PATHOLOGIST.

Applications are invited for the post of Assistant Pathologist at Dudley Road Hospital, at a salary of £650 per annum, rising by annual increments of £50 to £800 per annum.

Applicants must have special knowledge and experience in morbid anatomy and bacteriology and be engaged wholly or chiefly in the practice of Pathology. The officer appointed will work under the Pathologist to the Municipal Hospitals.

The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

The successful candidate will be required to pass an approved medical examination, to contribute to the Superannuation Scheme established under the Local Government and Other Officers' Superannuation Act, 1922, as amended by Section 82 of the Birmingham Corporation Act, 1935 (Annuities for Widows), and, if under 30 years of age, to join the Birmingham Municipal Officers' Widows' and Orphans' Pensions Scheme.

The appointment will be terminable by one month's notice on either side.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be addressed to Dr. F. W. Ellis, Medical Superintendent, Dudley Road Hospital, Birmingham, 18, not later than July 24th, 1937, from whom further particulars regarding the post can be obtained.

F. H. C. WILTSHIRE. Town Clerk.

The Council House, Birmingham, 1.

CITY OF BIRMINGHAM.

ASSISTANT MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE.

The Public Health Committee invite applications from Medical Officers (women) to take charge of Toddlers' Clinics in connection with the Maternity and Child Welfare Scheme. Applicants must have held a six-months' appointment as Physician in a Children's Hospital, and also held a six-months' resident appointment in a Maternity Hospital. It is desirable that applicants should hold the Diploma in Public Health, and if they have not already obtained the Master of Midwifery Diploma they may be required to do so within a subsequent period. The salary will be £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum. The appointment will be subject to the Birmingham Corporation Superannuation Scheme and to the candidate passing a medical examination, and will be subject to three months' notice on either side.

The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by her.

Applications, endorsed "Medical Officer for Maternity and Child Welfare," and accompanied by copies of three recent testimonials, to be made on a form obtainable from the Medical Officer of Health, Council House, Birmingham, 3, and returned to him on or before July 24th, 1937.

LINCOLNSHIRE (KESTEVEN) COUNTY COUNCIL.

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from qualified medical men for the post of Assistant Medical Officer of Health.

The Officer appointed will be required to act as Assistant Tuberculosis Officer and School Medical Officer, and to undertake Maternity and Child Welfare Work, and such other duties as may be assigned to him.

The salary will be £500 per annum, rising by annual increments of £25 to £700, together with travelling allowance in accordance with the County Scale. Approved previous experience will be taken into consideration.

The appointment, which will be terminable by three months' notice on either side, will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the successful candidate will be required to pass the necessary medical examination.

Applications should be made on forms which may be obtained from the undersigned and must reach him not later than July 23rd, 1937.

Canvassing in any form will be a disqualification.

County Offices, Sleaford, Lincs. W. T. PHIPPS. Clerk of the County Council.

MANCHESTER EAR HOSPITAL, Grosvenor Square, All Saint's.

The Board invite applications for the post of RESIDENT HOUSE SURGEON. (31 beds.) Salary £120 per annum. Candidates must be duly qualified and registered. Applications, with copies of four recent testimonials, to be forwarded to Mr. REGINALD S. MILFORD (Hon. Sec., Manchester Ear Hospital), c/o Mr. W. J. Ellam, 17, Brazennose Street, Manchester, 2.

VICTORIA HOSPITAL, LOVEDALE, Cape Province, South Africa.

Applications are invited for the following posts: MEDICAL SUPERINTENDENT and CHIEF MEDICAL OFFICER, TWO ASSISTANT MEDICAL OFFICERS, one of whom might be a woman.

The Assistant Medical Officers will have the entire responsibility for the patients in their wards—there are no visiting physicians or surgeons—and one of them must be prepared to undertake operative work. In addition to their special responsibilities, they will be required to take part in the general routine work of the hospital, including out-patients.

The Victoria Hospital is a part of the Lovedale Mission of the Church of Scotland. It is government-aided and is under the control of a Board constituted by the Cape Hospitals Ordinance, No. 5 of 1912.

Medical Officers must be in full sympathy with the missionary aims of the hospital, and will be expected to have or acquire as soon as possible a working knowledge of the Xhosa language spoken by patients.

The hospital is for Natives only and contains 175 beds. It is primarily a general hospital with medical and surgical wards, but has also a maternity section, a V.D. ward for women, a large department for surgical tuberculosis in children, and an out-patient department.

The Victoria Hospital prepares Native nurses for the Medical Council's examination, and is co-operating with the South African Native College, Fort Hare, in the training of Native Medical Aids for service under the Union Government. Medical officers will be required to give systematic and clinical tuition to these students. They will be members of the Medical Committee of the College.

Medical officers will receive salaries on the scale £350 rising by increments of £20 to £650. (£325-£15-£500 in the case of women.) The salaries are inclusive and are subject to pension deductions. The initial position of Medical officers on the scale will depend upon their professional standing and experience and the responsibilities assigned to them.

Medical Officers will not be allowed private practice except as consultants.

Applications should be forwarded to the Hon. Secretary of the Victoria Hospital, Lovedale, Cape Province, South Africa, so as to arrive not later than the first week of September, and should state age, professional qualifications, and experience, whether married or single, and be accompanied by testimonials

Lovedale, South Africa, June 21st, 1937. D. A. HUNTER, Hon Secretary, Lovedale Hospital Board.

ANCOATS HOSPITAL, MANCHESTER. ORTHOPAEDIC DEPARTMENT.

ASSISTANT SURGICAL OFFICER required to assist in the Orthopaedic Out-patient Clinic on Tuesday afternoons from 2 to 5. An honorarium of 10s. 6d. per attendance is paid.

Applications, stating age, experience, qualifications, etc., to be forwarded to the undersigned, together with copies of three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE,
General Supt. and Secretary

NOTTINGHAM AND MIDLAND EYE INFIRMARY.

RESIDENT HOUSE SURGEON (male) required immediately. 56 Beds. Large Out-patient Department. Salary £200 per annum, with board and laundry. Post recognised for D.O.M.S.

Applicants should state age, qualifications, experience and send copies of three recent testimonials to the Secretary, The Ropewalk, Nottingham.

July 9th, 1937.

HEREFORDSHIRE GENERAL HOSPITAL, HEREFORD. (150 Beds.)

Immediate applications are invited for the post of HOUSE PHYSICIAN (male).

Salary at the rate of £100 per annum, with board, residence and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned.

T. W. UPTON,
Secretary.

THE GENERAL HOSPITAL, BIRMINGHAM.

ANAESTHETIST required for holiday duty during July, August and September. Salary at the rate of one guinea a morning.

Further particulars can be obtained from the undersigned.

A. H. LEANEY,
House Governor.

THE KIDDERMINSTER AND DISTRICT GENERAL HOSPITAL.

JUNIOR HOUSE SURGEON (male) required Salary £100 per annum, with residence, board and laundry. Applications, with not more than three testimonials, to be sent to the Secretary, Miss SUSAN SMITH, South Cliff, Kidderminster.

CHESTERFIELD & NORTH DERBYSHIRE ROYAL HOSPITAL.
(220 Surgical and Medical Beds.)

HOUSE SURGEON.

Applications are invited from fully qualified men for the above post.

The appointment is for six months. Salary at the rate of £150 per annum, with board, apartments and laundry.

Applications, stating age, together with copies of three recent testimonials, should be sent to the undersigned as soon as possible.

FINAL YEAR STUDENT.

There is a vacancy for a Final Year Student. Board and lodgings are provided, and opportunity is given to the student to work in the wards of the Hospital, Fracture Clinic and Casualty Department.

Applications should be sent to the undersigned as early as possible, together with a reference from the Dean of the Faculty of Medicine at their School.

G. SUNNUCK,
July 5th, 1937. Superintendent and Secretary.

ST. PAUL'S HOSPITAL FOR UROLOGICAL AND SKIN DISEASES.
Endell Street, W.C.2.

Applications are invited for the post of HOUSE SURGEON (male). Candidates must be qualified and registered. Salary £100 per annum, with board-residence. The appointment is for three months in the first instance, and the holder will be eligible for the post of Resident Medical Officer, in which capacity he will have charge of the surgical beds. During his appointment as House Surgeon the duties involve work in the Surgical Wards and in the Out-patient Department.

Applications, with copies of recent testimonials, should be sent to the undersigned immediately. The successful candidate will be required to commence duty at an early date.

J. P. KEY CHISLETT,
Secretary.

SHERBURN HOSPITAL, NEAR DURHAM.

WANTED. — RESIDENT ASSISTANT MEDICAL OFFICER (male, unmarried), to commence duties at an early date. Salary £200 per annum, with board, residence, and laundry.

The appointment would suit men working for higher degrees. There are 100 beds for the treatment of chronic, non-contagious diseases (medical and surgical) and a large Out-patient Department. The Officer will be expected to give anaesthetics and to work under the supervision of the Medical Officer. The appointment will be subject to one calender month's notice on either side.

Applications, stating age, qualifications, and previous experience, with copies of recent testimonials, to be sent to the undersigned immediately.

Sherburn Hospital, Nr. Durham. STANLEY RITSON, Medical Officer and Surgeon.

HULL ROYAL INFIRMARY.
(365 Beds.)

Applications are invited from registered Medical Practitioners for the post of HOUSE SURGEON (male) to the Ophthalmic and Ear, Nose and Throat Departments, vacant now.

Salary at the rate of £150 per annum, plus residence, board and laundry.

The post is recognised for the clinical work required in the regulations for the D.O.M.S. and D.L.O.

The appointment will be for a period of six months, but will be determinable at any time by one month's notice on either side.

Applications, giving particulars of age, experience and nationality, together with copies of recent testimonials, should be addressed to the undersigned.

R. J. CARLESS,
June 28th, 1937. House Governor.

MIDLAND HOSPITAL.
Easy Row, BIRMINGHAM. (50 Beds.)

Applications are invited for the post of HOUSE SURGEON. Duties to commence immediately. Salary £200 per annum, with board, residence, and laundry. Applications, stating when at liberty, age, qualifications, together with copies of recent testimonials, to be addressed to the undersigned.

OLIVE FURNEAUX,
Secretary.

OLDHAM ROYAL INFIRMARY.

Two HOUSE SURGEONS.

One CASUALTY OFFICER AND HOUSE SURGEON to the Fracture Department.

Applications are invited for the above posts for a period of six months.

Salary at the rate of £175 per annum, with board, residence, and laundry.

Applications, stating age, experience, and qualifications, together with copies of three recent testimonials, must be forwarded to the undersigned not later than July 15th, 1937.

H. J. CLOUT,
General Superintendent.

MANCHESTER ROYAL INFIRMARY.

RESIDENT SURGICAL REGISTRAR TO OUT-PATIENT DEPARTMENT.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, vacant on August 1st, 1937.

Applicants must be registered and hold a Medical and Surgical Qualification and have held a hospital appointment.

The appointment is for six months (renewable for further periods of six months) subject to the provisions of the By-laws as to notice, etc. Salary £150 per annum, with board-residence and allowance for laundry.

Applications, stating age, to be sent to the Chairman of the Medical Board not later than Wednesday, July 14th, 1937.

BY ORDER,
W. R. TINDALE,
July 3rd, 1937. Gen. Supt. and Secretary.

THE PRINCE OF WALES'S HOSPITAL, Greenbank Road, Plymouth.
(Formerly South Devon and East Cornwall Hospital.)

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence and laundry.

Appointment is tenable for six months, and is subject to renewal. Duties to commence July 21st. The Hospital is officially recognised for the surgical practice required before admission to the Final Fellowship Examinations of the Royal College of Surgeons of England.

Applicants must be registered under the Medical Acts. Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned by July 14th.

ARTHUR R. CASH,
July 5th, 1937. Gen. Supt. and Secretary.

GRIMSBY AND DISTRICT HOSPITAL.
(164 Beds.)

Applications are invited for the posts of:
(a) SENIOR HOUSE SURGEON (male).
(b) HOUSE PHYSICIAN (male).

Remuneration at the rate of £200 and £150 per annum respectively, with board-residence, etc. Candidates must be fully qualified and registered, and previous hospital appointment experience is desirable. Duties to commence August 1st, 1937. The successful candidate will be appointed for six months, and may apply for re-election.

Applications, stating age, qualifications, experience, and not more than three recent testimonials, to be forwarded to the undersigned on or before July 20th, 1937.

H. B. COATES,
July 2nd, 1937. Secretary-Superintendent.

ROYAL SUSSEX COUNTY HOSPITAL, BRIGHTON.
(Beds 272. Six R.M.O.s.)

CASUALTY HOUSE SURGEON (male) required as soon as possible. Salary £120 per annum, with board, residence and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts.

They must be unmarried, and, when elected, under thirty years of age.

Applications, with copies of recent testimonials, to be forwarded to the undersigned.

L. L. W. LANCASTER-GAYE,
Secretary-Superintendent.

THE ROYAL PORTSMOUTH HOSPITAL, PORTSMOUTH.

(Six Resident Medical Officers.)

Applications are invited for the posts of:

FOURTH HOUSE SURGEON (male) qualified. Salary at the rate of £130 per annum, with board, etc. To commence about August 1st, 1937.

CASUALTY OFFICER (male) qualified. Salary at the rate of £130 per annum, with board, etc. To commence about August 21st, 1937.

Six months' appointments. Eligible on completion of term for appointment to other Resident posts.

Applications, stating age, nationality, etc., and copies of three recent testimonials, to be sent to the undersigned as soon as possible, from whom all particulars can be obtained.

B. WAGSTAFF,
Secretary.

THE ROYAL EYE HOSPITAL, Pevensey Road, Eastbourne.

Non-Resident HOUSE SURGEON required to commence duty July 26th, 1937.

Salary £100 per annum and allowance in lieu of board-residence, £175 per annum.

Applications, stating age, qualifications and Ophthalmic experience, together with recent testimonials should reach the undersigned as soon as possible.

Before engagement candidates have to be interviewed by the Hon. Surgeon, from whom further particulars could be obtained in person.

H. BYGRAVE,
Hon. Secretary.

GENERAL INFIRMARY, SALISBURY.
(Voluntary Hospital, 191 beds, now in course of extension to 225 beds)

RESIDENT MEDICAL OFFICER (male) required to commence duty as soon as possible.

The appointment is for one year, including a three months' probationary period, with the option of extension.

Candidates must have held at least one appointment at a recognised hospital as House Physician and/or House Surgeon and Anaesthetist, either separately or in conjunction with the former.

He must reside in the Infirmary and devote his whole time to the service of the Infirmary.

Salary £250 per annum, with board-residence.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary.

SUSSEX MATERNITY AND WOMEN'S HOSPITAL, BRIGHTON.
(50 Beds.)

RESIDENT HOUSE SURGEON (male) required. Salary at the rate of £130 per annum, board and washing found, and £40 allowed for travelling expenses. Good experience in midwifery and gynaecology afforded. No canvassing allowed. The successful candidate will be required to enter on his duties at the beginning of September.

Applications in writing, accompanied by testimonials, should be sent to PERCY F. SPOONER, Secretary at the Hospital, Buckingham Road, Brighton

July 3rd, 1937.

BOOTLE GENERAL HOSPITAL, BOOTLE, LIVERPOOL, 20.

1 HOUSE PHYSICIAN; 2 HOUSE SURGEONS; 1 CASUALTY OFFICER.

Applications are invited for the above posts.

The appointments to be tenable for six months from October 1st.

Applicants must be duly qualified and registered under the Medical Acts.

The salary attached to each post is £150 per annum, with board, residence and laundry provided. Applications, with copies of testimonials, should reach me by Friday, July 16th.

A. J. COOPER,
Secretary-Superintendent.

ROCHDALE INFIRMARY & DISPENSARY.
(110 Beds.) (Three Residents.)

The Board of Management invite applications from gentlemen for the appointment of SENIOR HOUSE SURGEON.

The salary attached to the appointment is £250 p.a., including board, residence and laundry.

Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon."

W. WYNNE,
Infirmary Office, Secretary.

ROYAL UNITED HOSPITAL, BATH.

HOUSE PHYSICIAN required immediately. Resident Staff of two House Physicians and three House Surgeons.

Duties include some Casualty. Salary £150 per annum, board, residence, and laundry.

The appointment is for six months, and candidates must be male, unmarried, and of British nationality.

Applications, with copies of three testimonials, to be addressed to the undersigned at once.

J. LAWRENCE MEARS,
May 31st, 1937. Secretary-Superintendent

DONCASTER ROYAL INFIRMARY.

HOUSE SURGEON (male) required immediately. Six House Surgeons are resident.

Salary at the rate of £175 per annum, with residence, board and laundry.

This large industrial area offers excellent opportunities for gaining experience.

Applications, accompanied by not more than three testimonials, to be sent to the undersigned immediately.

R. LANCASTER,
Secretary-Superintendent.

PRESTWICH MENTAL HOSPITAL, MANCHESTER.

Required immediately, LOCUM TENENT MALE MEDICAL OFFICER. Local facilities for D.P.M. Salary seven guineas per week and all found. Candidates must be unmarried and registered under the Medical Act. Appointment terminable by one week's notice on either side. Apply, stating age, Hospital and other experience, qualifications and full particulars, to the Medical Superintendent, as above.

LEIGH INFIRMARY, LANCASHIRE.

Wanted, JUNIOR HOUSE SURGEON, immediately. Salary £150 p.a. The appointment is for six months, with eligibility for re-election. Must be good Anaesthetist. Exceptional opportunities for surgery.

Applications to be addressed to Mr. J. A. SMITH, Secretary, 5, Silk Street, Leigh, Lancashire.

WESTON-S-MARE GENERAL HOSPITAL.
(80 Beds.)

HOUSE PHYSICIAN.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN at this Hospital. Salary at the rate of £150 per annum, with board, rooms and laundry. Duties commencing August 1st. Applications, stating age, qualifications, and enclosing copies of testimonials, should be addressed to the undersigned.

LESLIE J. FURSLAND,
The General Hospital, Secretary.
Boulevard,
Weston-super-Mare.

ROYAL DEVON AND EXETER HOSPITAL, EXETER.

MEDICAL.

Applications are invited for the post of HONORARY CONSULTANT IN PSYCHIATRY at this Hospital.

Applications, together with certificate of birth and registration, and original testimonials, with 30 copies, should be delivered to the undersigned on or before Saturday, July 24th, 1937.

N.B.—No canvassing permitted.

By Order of the Committee,
S. R. COLE,
Secretary and Manager.

KETTERING AND DISTRICT GENERAL HOSPITAL.

Applications are invited for the post of HOUSE SURGEON and HOUSE PHYSICIAN (male).

Salaries £175 and £150 respectively, with board, residence and laundry. Candidates must be fully qualified.

The appointment is for six months.

Applications, stating age, nationality and qualifications, together with copies of three testimonials, to be sent to the undersigned as soon as possible.

G. W. JACKSON,
Secretary-Supt.

MANSFIELD AND DISTRICT GENERAL HOSPITAL. (140 Beds.)

HOUSE SURGEON (Male) required. Duties to commence as soon as possible. Salary at the rate of £150 p.a., with residence, board and laundry. The appointment is for six months and is renewable. The staff consists of a Resident Surgical Officer and two House Surgeons. Applications, stating age, qualifications and nationality, accompanied by not more than three recent testimonials, to be sent to the undersigned as soon as possible.

C. J. ADAMS,
Secretary.

THE LADY CHICHESTER HOSPITAL, HOVE, FOR FUNCTIONAL NERVOUS DISEASES.
(60 Beds.)

SENIOR HOUSE PHYSICIAN (woman) required. Six months' appointment at £160 per annum, all found.

Also JUNIOR at £50 per annum. Valuable experience for diploma in Psychological Medicine. Duties to commence immediately.

Applications, with testimonials, to be sent to the Secretary, Mr. P. F. Spooner, 33, West Street, Brighton.

June 28th, 1937.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, BRIGHTON.
(100 Beds.)

HOUSE PHYSICIAN (male) required. Salary at the rate of £120 per annum, with board, lodging and laundry. No canvassing allowed.

The Hospital is recognised for the D.C.H. Diploma.

Applications in writing, accompanied by testimonials, should be sent to Mr. Percy F Spooner, Secretary, Dyke Road, Brighton

June 26th, 1937.

THE CHILDREN'S HOSPITAL, SHEFFIELD.
(140 Beds.)

HOUSE SURGEON required IMMEDIATELY. Salary £100 per annum, with board, residence and laundry. Candidates (male and unmarried), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of three recent testimonials, to the undersigned.

I. H. G. GARTLAND,
Superintendent and Secretary.

THE HOSPITAL FOR SICK CHILDREN, NEWCASTLE-UPON-TYNE.

Applications are invited for the posts of:—HOUSE PHYSICIAN and HOUSE SURGEON (Male or Female) for six months as from August 1st, 1937. Salary at the rate of £100 per annum, together with board, residence and laundry. Applications, stating age and qualifications, together with copies of testimonials, to be sent to the Secretary, Mr. Neil Brodie, 18, City Road, Newcastle-upon-Tyne, 1.

THE ROYAL HOSPITAL, WOLVERHAMPTON.
(Incorporated under Charter.)

GYNAECOLOGICAL AND OBSTETRIC DEPARTMENT.

ASSISTANT RESIDENT MEDICAL OFFICER (female) required for the above Department (60 beds), duties to commence forthwith.

Candidates must be registered under the Medical Acts and unmarried.

The appointment is for six months. Salary at the rate of £100 per annum. Board, furnished rooms and laundry provided. Applications, with copies of testimonials, to be forwarded to the undersigned.

Wolverhampton. W. H. HARPER,
June 28th, 1937. House Governor.

DERBYSHIRE ROYAL INFIRMARY, DERBY
(General Hospital, 362 Beds)

Applications are invited for the post of CASUALTY OFFICER AND ORTHOPAEDIC HOUSE SURGEON.

Candidates must be qualified and registered under the Medical Acts.

Salary will be £150 per annum, with apartments, board, etc

Applications, with copies of testimonials, to be sent to the undersigned immediately.

ARTHUR TAYLOR,
July 2nd, 1937. Superintendent and Secretary.

VICTORIA HOSPITAL, WORKSOP.
(92 Beds)

A SENIOR RESIDENT and a JUNIOR RESIDENT are required, the Junior as soon as possible, the Senior at the end of July. Salary at the rate of £150 and £125 p.a. respectively, with board, residence and laundry.

Applications, stating age, qualifications, nationality, with copies of three recent testimonials, to be sent to the undersigned. The appointments are for six months, renewable

JAMES BOOTHROYD,
Secretary-Superintendent.

CUMBERLAND INFIRMARY, CARLISLE.
(Beds 160. Five Male R.M.O's)

Required at once, male HOUSE SURGEON. Appointment to September 30th, 1937.

Applications are invited. Previous experience desirable. Salary at the rate of £155 per annum, board, residence, etc.

Applications, stating age, nationality, qualifications, etc., with copies of not more than three testimonials, should be sent at once to the undersigned, who will supply further particulars if desired.

J. G. HOWITT,
June 9th, 1937. Secretary.

CRICHTON ROYAL, DUMFRIES.

HOUSE PHYSICIAN required for the above Mental Hospital. Salary £200 per annum. Yearly appointment. Excellent opportunities for post-graduate work. The Hospital provides facilities for treatment in all its aspects and is equipped with up-to-date laboratories.

Applications, together with copies of three recent testimonials, to be forwarded to the Physician Superintendent, Crichton Royal, Dumfries, to reach him not later than Tuesday, July 20th, 1937.

WORTHING HOSPITAL.

Applications are invited for the post of HOUSE SURGEON. The appointment is for six months. Salary at the rate of £130 per annum, with board, lodging and laundry.

Candidate (male) should forward application, stating age, nationality, qualifications, and experience, accompanied by testimonials to the undersigned.

A. V. OAKTON,
July 1st, 1937. Secretary-Superintendent.

COSSHAM MEMORIAL HOSPITAL, Kingswood, Bristol

A vacancy will occur in the middle of July for the post of JUNIOR RESIDENT MEDICAL OFFICER.

Salary £100 per annum, with board and laundry—to remain for six months in the first instance. Applicants (Male) should be British nationality, fully qualified and registered. Applications, with copies of recent testimonials, to be sent to the Secretary.

MINEHEAD AND WEST SOMERSET HOSPITAL, MINEHEAD, SOMERSET.

Applications are invited for the post of RESIDENT HOUSE SURGEON (male or female). Duty to commence on September 1st, 1937. Appointment for a period of six months. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than July 30th, 1937.

W. H. P. RODDA,
Secretary.

CITY OF PORTSMOUTH.

ST. MARY'S HOSPITAL.

The Portsmouth City Council invite applications for the appointment of SENIOR RESIDENT MEDICAL OFFICER for Saint Mary's Hospital, Maternity Department. The appointment includes service at any institution belonging to the City Council that may be required and will be limited to a term not exceeding two years. Salary for the first year £350 and for the second year £375. The residential emoluments are valued at £125 per annum, and the appointment will be subject to one month's notice on either side.

Candidates must be single gentlemen, duly registered, and age 25 to 30 years, and must have had at least one year's experience in a Maternity Hospital.

The Department has at present about 800 births per annum and an Ante-natal and Post-natal clinic is conducted in connection therewith. There is a Resident Medical Superintendent at the Hospital and a Consultant Obstetrician attends regularly and is on call for emergencies.

The appointment is one of value to a medical man specialising in obstetrics who desires to take the M.M., or M.C.O.G., Diplomas.

Application forms, giving conditions of appointment may be obtained from, and should be returned to, the undersigned, Guildhall, Portsmouth, on or before 10 a.m. on Tuesday, July 27th, 1937.

Canvassing will be a disqualification.

F. J. SPARKS,
Town Clerk.

The Guildhall,
Portsmouth,
July 6th, 1937.

CITY OF MANCHESTER.

ABERGELE SANATORIUM—262 Beds. (210 Children, 52 Adults.)

The Public Health Committee invites applications from registered medical practitioners for the post of RESIDENT ASSISTANT MEDICAL OFFICER at the Abergele Sanatorium.

The salary for the appointment commences at £350 per annum, rising by annual increments of £25 to a maximum of £450, with board, residence and laundry in addition, subject to the Manchester Corporation conditions of service.

Full information and forms of application may be obtained from the Medical Officer of Health, Sunlight House, Quay Street, Manchester, 3, and applications for the post must be received by him not later than July 21st, 1937.

F. E. WARBRECK HOWELL,
Town Clerk.

Town Hall,
Manchester, 2
July 5th, 1937.

METROPOLITAN BOROUGH OF FULHAM

NEW MATERNITY HOME AND CLINIC

RESIDENT MEDICAL OFFICER AND ASSISTANT MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE.

Applications are invited from unmarried qualified medical practitioners of either sex, with special obstetric experience, for the appointment of Resident Medical Officer and Assistant Medical Officer for Maternity and Child Welfare at the Council's new Maternity Home and Clinic (25 beds), which is expected to be opened in September next. The officer appointed will also have medical charge of certain ante-natal, post-natal, infant welfare, and ultra-violet light clinics, and experience in these will be an additional qualification.

The scale of salary will be £350 per annum, rising by annual increments of £25 to £550 per annum, plus emoluments valued for superannuation purposes at £150 per annum. The commencing salary will be within the above scale at a point in accordance with the qualifications and experience of the person appointed.

Detailed particulars of the terms and conditions of the appointment, together with a form of application will be sent on receipt of a stamped addressed foolscap envelope. Applications must be delivered to me not later than July 17th. Canvassing is strictly prohibited and will disqualify.

WILFRED TOWNEND,
Town Clerk.

Town Hall,
Fulham, S.W.6.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL (280 Beds).

Applications are invited for the following appointments:

ONE CASUALTY OFFICER.
ONE RESIDENT ANÆSTHETIST AND HOUSE SURGEON TO THE EAR, NOSE AND THROAT DEPARTMENT.

commencing immediately until December 31st, 1937, at a salary of £150 per annum with board, lodging and laundry. Candidates must be male and unmarried.

Applications, accompanied by not more than three recent testimonials, should be sent to the undersigned at once.

HY. TRUSSON,
House Governor and Secretary.

WARWICKSHIRE COUNTY COUNCIL.

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH (Male).

Applications are invited from registered medical practitioners holding the Diploma of Public Health for the post of Assistant County Medical Officer of Health. The duties will include medical inspection of school children. Preference will be given to candidates with ophthalmic experience, particularly refraction.

The salary is at the rate of £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum, and is subject to a deduction of five per cent. in respect of contributions under the Local Government and Other Officers' Superannuation Act, 1922.

The person appointed will be required to use his own motor car in the service of the Council and will be paid in respect of such use a mileage allowance in accordance with the Council's Scale from time to time in force. Subsistence allowances according to the Scale will also be paid.

The appointment is subject to the production of a medical certificate in a form satisfactory to the County Medical Officer of Health. Forms of application and statement of the duties and terms of appointment can be obtained from the COUNTY MEDICAL OFFICER OF HEALTH, SHIRE HALL, WARWICK, to whom applications, with copies of not more than three recent testimonials, should be sent not later than Wednesday, July 21st, 1937.

Canvassing, directly or indirectly, will be a disqualification.

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall,
Warwick,
July 6th, 1937.

CITY AND COUNTY OF BRISTOL.

ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council invite applications for a whole-time male Assistant Medical Officer of Health. Age not exceeding 40 years. Salary £500 per annum, rising by annual increments of £50 to £700. The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922. The Diploma of Public Health is essential.

The duties will consist principally of examination of children in the Council's Secondary, Elementary and Special Schools, treatment in School Clinics, etc., but the officer appointed may also be required to work in any department of the Medical Officer of Health of the City and Port. He will especially be required to take his duty in rotation at the Port.

Applications, which must be on the form provided for this purpose, should be accompanied by not more than three recent testimonials, and must be received by the undersigned not later than Friday, July 23rd, 1937. Envelopes should be endorsed "Assistant Medical Officer of Health."

Canvassing will disqualify.

JOSIAH GREEN,
Town Clerk

Council House,
Bristol, 1
July 5th, 1937.

AYRSHIRE SANATORIUM, GLENAFTON, NEW CUMNOCK.

Ayr County Council invite applications for appointment as MEDICAL SUPERINTENDENT at a salary of £600 rising by annual increments of £30 to £750 a year, with free house, coal and light. The emoluments are subject to deduction of superannuation contributions.

Applicants must be registered Medical Practitioners with special experience in the Sanatorium Treatment of Tuberculosis.

Applications should be made by letter, should contain particulars with regard to medical training and experience and in particular with regard to experience and treatment of Tuberculosis, and should be lodged not later than July 21st, with JAMES R. LOCKIE, County Clerk, County Buildings, Ayr.

July 5th, 1937.

WREXHAM AND EAST DENBIGHSHIRE WAR MEMORIAL HOSPITAL. (124 Beds.)

RESIDENT HOUSE SURGEON (female) required by the above hospital. Appointment is for six months; salary £150 per annum, with board and lodging.

Applications, stating age, nationality, experience, qualifications, and when duty can be commenced, to be sent to the undersigned immediately together with three copies of recent testimonials.

LESLIE SPENCER,
Secretary.

June 24th, 1937.

CHESHIRE JOINT SANATORIUM, MARKET DRAYTON, SALOP.

Wanted, RESIDENT HOUSE PHYSICIAN (Male), for a period of twelve months. Salary £250 per annum. Forms of application from The Medical Superintendent.

AMENDED ADVERTISEMENT.

CITY OF PLYMOUTH.

CITY GENERAL HOSPITAL (570 Beds).

DEPUTY MEDICAL SUPERINTENDENT.

Applications are invited from fully qualified male Medical Practitioners for the post of Deputy Medical Superintendent at the City Hospital, Plymouth. The appointed candidate will work under the direction of the Medical Superintendent. The duties are mainly medical and candidates should have had medical experience, and preference will be given to candidates possessing a higher medical qualification.

Salary at the rate of £450 per annum, rising by annual increments of £50 to £550, with full residential emoluments.

The appointment will be held during the pleasure of the Council and will be subject to:

(1) The candidate passing a medical examination.
(2) To the provisions of the Local Government and Other Officers' Superannuation Act.
(3) Six weeks' notice on either side.

The officer will be required to refund to the Council all fees, allowances and emoluments other than the foregoing received by him.

Further particulars of the post may be obtained from the Medical Superintendent, City Hospital, Plymouth. Forms of application may be obtained from the undersigned, and should be returned, accompanied by copies of not more than three recent testimonials, not later than Monday, July 26th, 1937.

T. PEIRSON,
Medical Officer of Health.

Town Hall,
Stonehouse,
Plymouth.
July, 1937.

HORNSEY EDUCATION COMMITTEE.

APPOINTMENT OF AURAL SURGEON.

The Committee require the services of a part-time surgeon to attend at the School Clinic, Crouch End, on approximately 40 Saturday mornings during the year, for the diagnosis and treatment of conditions of the ear, nose and throat in children from infancy to school-leaving age. Candidates should have considerable experience of ionization and diastolisation, but the work does not include operations for the removal of enlarged tonsils and adenoids.

The fee paid for each session of two hours will be £2 12s. 6d.

Applications for this appointment, giving particulars of qualifications, etc., should be sent to the undersigned not later than Saturday, July 17th, 1937.

E. R. STOW,
Deputy Director of Education.

Education Department,
Town Hall,
Crouch End, N.8.

COUNTY BOROUGH OF TYNEMOUTH.

PUBLIC ASSISTANCE COMMITTEE.

Preston Hospital, North Shields.

SENIOR ASSISTANT MEDICAL OFFICER. (Male, Non-Resident.)

The Council of the County Borough of Tynemouth invites application from registered male Medical Practitioners for the appointment of Senior Assistant Medical Officer (Non-Resident) at the above-named Hospital.

The salary will be at the rate of £450 per annum, rising by annual increments of £25 to £550 per annum; the officer appointed will be required to refund to the Council all fees received by him.

The appointment will be subject to one month's notice on either side, and the officer appointed will be required to submit a satisfactory medical certificate, to devote the whole of his time to his official duties, and to act under the direction of the Medical Officer.

Candidates should have had experience as Medical Officers resident in a general hospital, and preference will be given to candidates who have also had similar experience in a maternity hospital. The selected candidate will be required to commence duties on September 1st, 1937.

Applications, stating age, experience, and qualifications, and accompanied by not more than three recent testimonials, should be forwarded to the undersigned not later than July 20th, 1937.

Canvassing, either directly or indirectly, will be a disqualification.

Dated the 9th day of July, 1937.

FRED G. EGNER,
Town Clerk.

14, Northumberland Square,
North Shields.

SOUTHEND-ON-SEA GENERAL HOSPITAL. (235 Beds.)

Applications are invited for the post of FIRST HOUSE SURGEON, duties to commence on August 1st. Appointment is for six months. Salary £100 per annum with Board, Residence and Laundry. Candidates must be registered (Male) Practitioners. Applications with copies of two recent testimonials to be sent to the undersigned by July 15th, 1937.

P. H. CONSTABLE,
Secretary.

APPOINTMENTS—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District.	Town or District.	Town or District
CONTRACT PRACTICE	CONTRACT PRACTICE—*(contd.)*	CONTRACT PRACTICE—*(contd.)*
ABERTYSSWG MEDICAL AID SOCIETY. *(Medical Officer.)*	LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*
		OGMORE VALLEY, GLAMORGAN *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL. *(Medical Officer.)*	MID-RHONDDA MEDICAL AID SOCIETY. *(Assistant Medical Officer.)*	**PUBLIC HEALTH**
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	FLINTSHIRE COUNTY COUNCIL. *(Junior Assistant to the County Council's Medical Officer.)*

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES *(All Friendly Society Appointments.)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney, N.S.W.	**VICTORIA** *(All Institute or Medical Dispensaries.)*	The Honorary Secretary, Victorian Branch, British Medical Association, Medical Society Hall, Albert St., East Melbourne, Victoria.	**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, "Shell House," 205, St. George's Terrace, Perth, Western Australia.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17.				

July 7, 1937 By Order of the Council. G. C. ANDERSON, *Medical Secretary*

BIRKENHEAD GENERAL HOSPITAL. (156 Beds.)

Applications are invited for the following Resident (male) posts for the six months commencing October 1st, 1937.

SENIOR HOUSE SURGEON. Salary £150 per annum.

(The above post is recognized by the Royal College of Surgeons of England for the 6 consecutive months' appointment in charge of general surgical patients required of candidates before admission to the final examination for the Fellowship.)

SECOND HOUSE SURGEON. Salary £100 per annum.

HOUSE PHYSICIAN. Salary £100 per annum.

CASUALTY OFFICER. Salary £100 per annum.

All with board, residence and laundry.

Applications, stating age, nationality and qualifications, together with three recent testimonials, to reach the undersigned as soon as possible.

W. H. DANIELS, F.C.I.S.,
Secretary-Superintendent

ANCOATS HOSPITAL, MANCHESTER.

APPOINTMENTS VACANT.

CASUALTY OFFICER, lady or gentleman.—12 months' appointment. Salary £250 per annum, with luncheon and tea provided. Applicants having passed their Primary Fellowship Examination will be preferred as the lady or gentleman appointed will do duty for the Resident Surgical Officer at alternate week-ends and other scheduled times.

HOUSE SURGEON, lady or gentleman, to the Ear, Nose and Throat Department, and to act as House Physician to one of the Honorary Physicians. Appointment for six months. Salary at £100 per annum, with board, residence, laundry, etc.

Applications for either of the above posts should be forwarded to the undersigned immediately, together with copies of three recent testimonials, stating age, qualifications, experience, etc.

By Order of the Board,
HERBERT J. DAFFORNE,
General Superintendent and Secretary.

BURY INFIRMARY (LANCS.). (127 Beds.)

APPOINTMENT OF CASUALTY OFFICER (MALE)

A vacancy as above arises on the Resident Medical Staff, and applications are invited for the post.

The Resident Staff consists of an R.S.O., a House Surgeon, and House Physician, and a Casualty Officer.

In addition to his duties in the Casualty Department the Casualty Officer is also responsible for the In-patient and Out-patient work in connection with the Eye, and Ear, Nose and Throat Department.

The appointment is for six months at a salary at the rate of £150 per annum, with board, residence and laundry, and the successful candidate will be expected to commence duties immediately.

Applications, stating age, qualifications, and nationality, together with copies of three recent testimonials, are to be forwarded to the undersigned as soon as possible, endorsed "Casualty Officer."

Further particulars may be had on application.

H. WILKINSON,
Superintendent.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

Applications are invited for the following posts:
(a) HOUSE PHYSICIAN from August 1st.
(b) HOUSE SURGEON from August 1st.

Each appointment is tenable for a period of six months, but is terminable at an earlier date by one month's written notice on either side.

The salary of each officer will be at the rate of £130 per annum, with board, residence and laundry.

Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Wednesday, July 14th, 1937.

J. A. BEARDSALL,
Secretary-Superintendent.

ST. MARY'S HOSPITALS, MANCHESTER.

ASSISTANT RESIDENT OBSTETRIC OFFICER for the Whitworth Street West Hospital (Maternity) for a period of twelve months from August 1st next. Salary £100 per annum, with board and residence. Membership of the College of Obstetricians and Gynaecologists would be an advantage. Applications, with copies of three testimonials, to be sent to the undersigned on or before the 12th instant.

R. RATCLIFFE, Secretary.

ROYAL EYE & EAR HOSPITAL, BRADFORD. (94 Beds.)

HOUSE SURGEONS (two) required. Salary £150, with board, residence and laundry.

Applications, stating qualifications, age, etc., with copies of recent testimonials, should be sent to the undersigned.

F. BRIGGS,
Secretary-Superintendent.

MONTAGU HOSPITAL, MEXBOROUGH. (113 Beds.)

RESIDENT HOUSE SURGEON (Lady) required. Commencing salary £120 per annum, with board, residence, laundry, and excellent experience.

Applications, stating age, qualifications, when at liberty, and accompanied by copy testimonials, to:—

JOHN N. DRAKE,
Secretary-Superintendent.

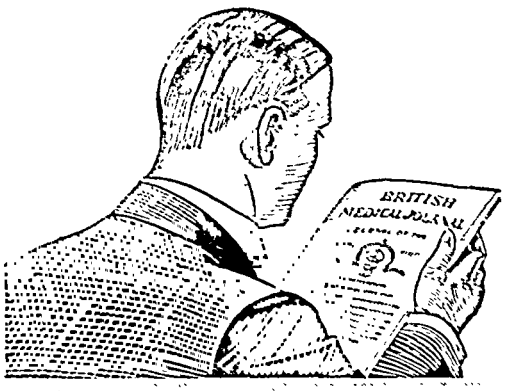
ROTHERHAM HOSPITAL.

HOUSE SURGEON required for Ophthalmic and Ear, Nose and Throat Departments. Previous experience not essential. Salary £150 per annum, with board and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. Roberts, 8, Moorgate Street, Rotherham.

(Advertisements continued on p. 67)

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WANTED IN JULY for SIX MONTHS, LADY Doctor as ASSISTANT IN SANATORIUM Previous experience not necessary.—Address, No 5016, B.M.A. House, Tavistock Square, W.C.1.

ADVERTISER SEEKS SCHOOL OR HOME in West of England for high-grade mental defective boy, 16 years; gentle birth. Terms moderate. Manual training desirable.—Address, No. 5118, B.M.A House, Tavistock Square, W.C.1.

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FOLKESTONE.—MEDICAL MAN, EXPERIENCED in psychological medicine, can receive nervous mild mental or senile PATIENT in private residence. Moderate inclusive terms.—Address, No. 5125 B.M.A. House, Tavistock Square, W.C.1.

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RESIDENT PATIENT.—COMFORTABLE HOME offered to elderly person or invalid, lady preferred, in doctor's residence. Beautiful country district near London. Every attention given. Terms moderate.—Address, No. 4391, B.M.A. House Tavistock Square, W.C.1

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WANTED.—ASSISTANT, MALE, SCOTTISH (single), outdoor for August 1st Mixed Practice. Lovely part of Lancashire. Salary £400. Apply, stating age, religion, experience, photo.—Address, No. 4829. B.M.A. House, Tavistock Square, W.C.1.

WANTED — ASSISTANT, MALE FOR private and panel practice in large city Salary commencing £475. Own car. Possibly prospects later. Nice house. Please send full particulars.—Address, No. 5211, B.M.A. House, Tavistock Square, W.C.1.

WANTED AT ONCE, INDOOR ASSISTANT. Steady, reliable man, with experience of general practice Midlands Comfortable home. Work light. Car provided for professional use. Mixed practice. Salary £375 p.a., all found. Must be British.—Address, No. 5135, B.M.A. House, Tavistock Square, W.C.1.

WANTED FOR E. LANCS TOWN.—YOUNG, recently qualified ASSISTANT, Scotch or English preferred. Salary £400, with rooms and attendance, plus £50 car allowance. Assistant lives at branch surgery.—Address, No. 5033. B.M.A House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY, INDOOR AND Outdoor ASSISTANTS for Town and Country Practices, with and without view to Partnership. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2.

WANTED IMMEDIATELY, YOUNG, SINGLE, male, reliable ASSISTANT for large and interesting industrial practice within half an hour of Piccadilly Circus and ten minutes of the open country. Initial salary £312 per annum and all found, with an increase as soon as he proves his capabilities. Usual bond. Dispenser kept.—Address, No 4411, B.M.A. House, Tavistock Square, W.C.1

WANTED, IN CHESHIRE, AN ASSISTANT with a view to Partnership in mixed Practice State nationality. Salary £350.—Address, No. 5107, B.M.A House, Tavistock Square, W.C.1.

WANTED, INDOOR ASSISTANT AT Branch of large Club and Panel Practice, near Birmingham. Salary £325 and £50 for own car.—Address, No 5126, B.M.A. House, Tavistock Square, W.C.1.

WANTED, INDOOR ASSISTANT, SCOTLAND; experienced; good prospects to suitable man.—Address, with full particulars, to No. 5220, B.M.A House, Tavistock Square, W.C.1.

WANTED IN PLEASANT LANCASHIRE town outdoor ASSISTANT, preferably Scots. Would suit recently qualified graduate Salary £400. Applicants please state nationality, age, and religion.—Address, No. 3558 B.M.A. House, Tavistock Square, W.C.1.

WANTED, MALE ASSISTANT FOR TWO PARTNERS in old-established country, easily worked industrial Practice in London; to live at surgery (no branch surgeries). Commencing salary, £400 p.a., all found, with an annual increase of £50 p.a. and one-third share of Practice worth £1,200 available at the end of four years. Unexceptionable references essential.—Address, No. 5215, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT, PROSPECTS to suitable man Industrial area near Newcastle-on-Tyne. Salary, first year £400, plus rooms and motor-car. Driver and dispenser kept. State nationality and references. No agents. Usual bond.—Address, No. 5133, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT FOR good-class country Practice, Midlands. Car owner. £400, plus £50 car allowance. No objection to recently qualified. Photo, refs.—Address No. 5123, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANTSHIP, preferably with view, by M.R., B.S. Married (age 35). Experienced hospital and general practice. Own car.—Address, No. 5132, B.M.A House, Tavistock Square, W.C.1.

WANTED, — OUTDOOR ASSISTANT. Salary £400 p.a., with rooms and attendance and £50 car allowance.—Address, No. 5101, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR MARRIED ASSISTANT, Country Practice in South-West of England. Work light. Salary £400, which includes car allowance. Unfurnished house free. English or Scottish Public School man preferred. Would suit recently married man.—Address, No. 5203, B.M.A. House, Tavistock Square, W.C.1.

WANTED TO COMMENCE AUGUST 1st, Male ASSISTANT. Industrial practice on Tyneside Live indoor at branch surgery. Salary, £325 all found. Car allowance.—Address No. 5114, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT, MALE, OUTDOOR, FOR MIXED Practice in Kent. Photo and testimonials required.—Address, No. 5110, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT WANTED, NORTH LONDON area. Must be reliable and recently qualified. Salary to commence £350 per annum and furnished rooms. Abstainer preferred.—Address, No. 5108, B.M.A. House, Tavistock Square, W.C.1.

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MEDICAL: MALE ASSISTANT WITH VIEW or Junior Partner wanted for Glasgow West End Practice.—Apply, with full particulars of age, experience, etc., to CRAWFORD, HEGGIE AND CAMERON, Solicitors, 257, West George Street, Glasgow, C.2.

WANTED, PART-TIME ASSISTANT FOR S.E. London. Work light, mainly evenings. Suit post-graduate. Salary £3 weekly.—Address, No. 5212, B.M.A. House, Tavistock Square, W.C.1.

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DENTAL: YOUNG LADY SEEKS POST AS DENTAL NURSE RECEPTIONIST, not experienced.—Address, No. 5104, B.M.A. House, Tavistock Square, W.C.1.

DOCTORS REQUIRING QUALIFIED Dispensers, Nurse-Dispensers, Secretary-Dispensers or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSER'S BUREAU, 3, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

MEDICAL OFFICER REQUIRED FOR service with large Company operating in the Near East, possessing well-organised medical service with Staff of British doctors, including Specialists, Nursing Staff, Hospitals, etc. Applicants must be of British parentage and have British qualifications: they should essentially have had Administrative experience. Age 35-40. Very good prospects for suitable man. Commencing salary not less than £1,000 per annum. Three yearly agreements. Free married quarters, free first class passages out and home. Provident Funds. Apply, with copies of testimonials (not returnable) to Address, No. 5115, B.M.A. House, Tavistock Square, W.C.1.

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YOUNG LADY, UNIV. GRADUATE M.A. in chemistry, physiology, 2 yrs'. experience as laboratory technician in chemical pathology in American hospital, 1 yr. in pharmacology research, typist, desires POSITION with doctor or in hospital. No. 5119, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS

WANTED, LOCUM OR ASSISTANTSHIP. University Graduate and Conjoint ex-H.S. Experienced G.P. Five years' excellent testimonials; references of doctors. Studying F.R.C.S. Age 28. Drive car or possess if required. Indian. Life abstainer.—Address, No. 5128, B.M.A. House, Tavistock Square, W.C.1.

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RELIABLE LOCUMS WANTED IMMEDIATELY. Send full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2.

WOMAN LOCUM REQUIRED, CAMBRIDGE, from July 28 for month; experience essential.—Address, No. 5129, B.M.A. House, Tavistock Square, W.C.1.

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WANTED, by M.B., F.R.C.S.(Ed.), EXPERIENCED in surgery and good-class practice, PARTNERSHIP or PRACTICE, preferably with surgical scope. Income £1,200 upwards.—Address, No. 5124, B.M.A. House, Tavistock Square, W.C.1.

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PARTNERSHIP.—HALF SHARE (ABOUT £1,250 gross), nice type, old-established Practice in famous city. Panel and P.M.S. worth £700 p.a. Univ. grad. in med., 27/28, preferred. Premium £2,600. Rent house. Details and photo —No. 4814, B.M.A. House, Tavistock Sq., W.C.1.

PARTNERSHIP WANTED WITH MEMBER of Oxford Group. Any locality where there are good schools, but London preferred. Good house and garden to rent and not less than £1,200 p.a. essential. Advertiser experienced G.P. 45 years old.—Address, No. 5109, B.M.A. House, Tavistock Square, W.C.1.

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WANTED, BY EXPERIENCED *PRACTITIONER*, PRACTICE, country, unopposed in South, South-West, South-East, or Home Counties, £1,000-£1,500, good panel, P.M.S., D.M.O. Good house and garden essential. Partnership considered.—Address, No. 5219, B.M.A. House, Tavistock Square, W.C.1.

WANTED, *COUNTRY OR COUNTRY TOWN* PRACTICE of about £2,000-£2,500 in South of England.—Address, No. 5202, B.M.A. House, Tavistock Square, W.C.1.

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(2). AURAL HOUSE SURGEON.
(3). OPHTHALMIC HOUSE SURGEON.
(4). CASUALTY OFFICER.

The salary attached to posts (1) and (2) is £80 per annum, increasing to £100 after six months' service; to (3) £120 per annum, and to (4) £150 per annum, with board and residence in each case.

Appointments (1), (2) and (3) will be tenable for the residue of the period of six months, terminating on October 31st next; (4) is tenable for six months from July 1st, 1937.

The Ophthalmic Department contains 69 beds and an Out-Patient Department, which is open daily.

Applications, with copies of testimonials to be sent to the undersigned forthwith.

H. KINGSLEY PEARCE,
General Superintendent and Secretary.

June 21st, 1937.

THE ROYAL INFIRMARY, SHEFFIELD.
(500 Beds.)

The Board of Management invite applications for the post of HOUSE SURGEON to the ORTHAPAEDIC and FRACTURE SERVICE.

The appointment will be tenable for the residue of the period of six months ending October 31st next. The successful candidate will be eligible for re-election to this or one of the other fourteen House appointments.

The salary attached to the post is £80 per annum, with board and residence, increasing to £100 per annum after six months' service.

Applications, with copies of testimonials, to be sent to the General Superintendent and Secretary.

June 25th, 1937.

THE BOLTON ROYAL INFIRMARY.

(315 beds, including two Auxiliary Hospitals).

Applications are invited from men or women for two vacant posts of HOUSE SURGEON. Duties to commence as soon as possible.

The appointments are for six months and are renewable. The salary £150 per annum in each case, with board, residence and attendance.

Applications for the posts, stating age, nationality and previous experience, together with copies of testimonials, should be forwarded to the undersigned.

H. CORLESS,
Assistant Secretary.

DARLINGTON MEMORIAL HOSPITAL.
(200 Beds.)

Applications are invited for the post of HOUSE SURGEON for the Out-Patient, Casualty and Orthopaedic Dept. Male, British, fully qualified. Salary £150 per annum, with board, residence and laundry. Applications, stating age, full particulars of qualifications and experience, together with copies of three recent testimonials, to be addressed to the undersigned.

ARTHUR RIDDLE, A.C.I.S.,
Secretary-Superintendent.

HERTFORD COUNTY HOSPITAL.
(169 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) (three Residents). Salary £180 per annum, with Board, Residence and Laundry. The appointment is for six months in the first instance.

Applications, with three recent testimonials, should be sent to the undersigned

PERCY G. BROOKS.
Secretary.

WARNEFORD GENERAL HOSPITAL, LEAMINGTON SPA.

LOCUM TENENS required for Resident House Surgeon's post from July 16th to August 18th, 1937. Salary seven guineas per week with Board and Laundry.

Apply at once to the undersigned.

E. L. WIRGMAN,
House Governor.

CLAYTON HOSPITAL, WAKEFIELD.

ONE HOUSE SURGEON required (male, British). Salary at the rate of £175 per annum, together with board, residence and laundry.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be sent to the Secretary, Mr. T. F. W. MacKeown, M.A.

ROYAL MASONIC HOSPITAL,
Ravenscourt Park, W.6.

Appointments (two) as RESIDENT SURGICAL OFFICERS (male) will be vacant on August 1st and September 1st, 1937. Salary at the rate of £250 per annum, with board, residence and laundry. The appointments are for six months.

Candidates must be registered, and have held resident appointments at a general hospital. The Institution (145 beds at present, but to be increased) is primarily for paying patients of both sexes of moderate means usually unable to afford ordinary Nursing Home treatment, etc.

Applications, stating full particulars, to be sent on or before Friday, July 16th, 1937, to the Honorary Secretaries, from whom further information may be obtained. The Medical Advisory Committee will meet on July 19th, 1937.

SOUTH EASTERN HOSPITAL FOR CHILDREN,
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Applications are invited for the post of RESIDENT MEDICAL OFFICER, male or female. The appointment will be for six months to commence shortly. Honorarium £100 per annum, with board, residence and laundry.

Applications by letter only, stating age, qualifications and experience, with copies of three testimonials should be sent to the Hon. Secretary at the Hospital, to be received on or before July 14th.

EVELINA HOSPITAL FOR SICK CHILDREN,
Southwark, S.E.

Applications are invited for the post of HOUSE SURGEON (male) for six months from August 12th (first two months in Casualty Department). Salary at the rate of £120 per annum, with full board and residence.

Applications, with copies of three recent testimonials, should be sent to the undersigned, from whom particulars can be obtained, not later than first post on Tuesday, July 20th.

W. H. SIDNELL,
July 2nd, 1937. House Governor.

NATIONAL HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM,
Queen Square, W.C.1.

ASSISTANT PHYSICIAN. Applications are invited for the post of Assistant Physician. Particulars of the appointment may be obtained from the undersigned, to whom applications should be sent not later than July 17th. Applicants must be Members or Fellows of the Royal College of Physicians.

GODFREY H. HAMILTON,
Secretary.

NATIONAL HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM,
Queen Square, W.C.1.

HOUSE PHYSICIAN. Applications are invited for the post of House Physician, and should be sent to the undersigned, accompanied by three recent testimonials, not later than July 17th. The salary is £100 per annum, with board and lodging.

GODFREY H HAMILTON,
Secretary.

THE ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN,
Waterloo Road, S.E.1.

There is a vacancy for an HONORARY CLINICAL ASSISTANT (male or female) at a RHEUMATISM SUPERVISORY CENTRE for Children suffering from rheumatic fever and chorea. Candidates should be interested in children's diseases and cardiology; previous children's experience desirable. The appointment is for six months in the first instance. Applications, accompanied by testimonials, should be sent to the undersigned, from whom further particulars can be obtained.

J. H. TEASDALE,
Secretary.

THE NATIONAL TEMPERANCE HOSPITAL,
Hampstead Road, N.W.1.

Applications are invited for the following post: CASUALTY OFFICER (male). Salary £120 per annum, board, residence and laundry allowance being provided.

The appointment is for a period of six months as from August 1st. Preference will be given to those who have held a resident post. Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, July 22nd, addressed to the Secretary.

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House Governor.

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Applications are invited for the appointment of Assistant in the Department of Bacteriology at University College Hospital Medical School, to commence in the month of September. Salary £250 per annum, with superannuation benefits.

Applications should be addressed to the Dean of the Medical School, University Street, W.C.1, and must be received on or before July 30th, 1937.

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JUNIOR RESIDENT MEDICAL OFFICER required as soon as possible (male, unmarried). Candidates must be fully qualified and duly registered. Salary £150 per annum, with board, residence and laundry. Applications, with copies of testimonials, to be sent to the Secretary, from whom further information may be obtained.

KING'S COLLEGE HOSPITAL.
Denmark Hill, S.E.5.

REGISTRAR (PART-TIME) to the Children's Department and Medical Officer to the Rheumatism Clinic vacant from September 15th.

Applications may be made to the House Governor before July 17th, from whom particulars of the duties may be obtained.

ST. JOHN'S HOSPITAL, LEWISHAM, S.E.13.

There is an immediate vacancy for the resident post of CASUALTY OFFICER (male), tenable for six months at a remuneration of £100 p.a. Applications, with copies of testimonials, should be sent to the undersigned.

J. C. GILBERT,
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HOUSE SURGEON (male or female) required to commence duties on August 16th. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, and experience, together with copies of testimonials, should be sent to the Secretary as soon as possible.

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HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL,
Haverstock Hill, N.W.3.

APPOINTMENT OF HOUSE PHYSICIAN.

Applications are invited from unmarried Medical men for the appointment of House Physician, vacant on August 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on July 17th next.

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5. KENT.—Old-established Country PRACTICE for sale, held by Vendor for past 9 years and only available because of ill-health. Gross cash receipts for year ended 30/6/37, stated to be £1,477. Panel of 650 patients, producing £390 p.a., and several small appointments which bring in about £70 p.a. Nearest opposition 2½ miles away. Fees 3/6 to 7/6. Visits 3/6 to 15/- with a few at 21/-. Very little midwifery. Beautiful house—freehold for sale for £2,400. It contains consulting rooms and waiting room, 2 reception, 5 bedrooms, garage for 3 cars, good garden with tennis lawn, rockery and orchard. Main water and electric light. All kinds of sport and good educational facilities. Premium £2,600.
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9. SUSSEX.—PARTNERSHIP.—A ONE-FIFTH SHARE (producing approximately £840 p.a.) is for disposal in a particularly sound good mixed class Practice situated in beautiful country and residential district within easy reach of sea. Fees from 3/6. Suitable house with 2 sitting, 6 bedrooms, separate professional rooms. Half an acre of garden, garage for two cars. Sport of all kinds and good schools within reach. Ingoing partner should be married, a graduate, and aged between 30 and 35.
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11. LONDON, SOUTH-EAST.—Middle-class PRACTICE held by vendor nearly 30 years, averaging over £700 p.a. Panel of 576 and one appointment worth £25 p.a. Roomy house with good garden and garage. Leasehold for sale.
12. OUTLYING NORTHERN DISTRICT.—Old-established non-Panel good mixed-class PRACTICE held by vendor (who is retiring) many years. Average gross cash receipts approximately £1,400. Fees 3/6 to 15/-. Good house with 2 reception, 7 bedrooms, etc., garden, garage. On rental. Premium 2 years' purchase.
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16. LONDON.—WESTERN DISTRICT.—Old-established Private PRACTICE for disposal after being held for many years by the Vendor who is retiring. Approximate cash receipts for the last year amount to £1,062. There is stated to be scope for increase, particularly if Panel work is undertaken and also midwifery. Fees 3/6 to 10/6. Small compact house available on rental at £90 p.a., containing consulting room, 2 reception rooms, 3 bedrooms, etc. Premium £1,800.
17. ESSEX.—Death Vacancy.—Old-established PRACTICE for disposal. It has been held by the Vendor for the past twelve years. The gross cash receipts for the last year were approximately £756. Panel of 424 patients. Fees 2/6 and 3/6 with a few midwifery cases at 3 guineas. Suitable house for disposal, containing 2 reception rooms, 3 bedrooms, etc.
18. DEATH VACANCY.—FAVOURITE SOUTH-COAST TOWN.—Old-established PRACTICE producing £800 p.a., of which about £600 is derived from a Panel of 1,200 patients, and an appointment producing about £30 p.a. House with 3 reception, 4 bedrooms, etc., to be rented on lease. Premium £1,500 to include household fittings and fixtures.
19. SOUTH-COAST SEAPORT.—Long-established PRACTICE for disposal owing to Vendor's retirement. He has held it for the past 39 years. Income last year approximately £573 with a Panel of about 460 patients. Vendor previously held a public appointment producing £450 p.a., which he relinquished owing to age limit. It is considered that anyone devoting whole time to the Practice would increase the receipts. Suitable accommodation available on rental.
20. EASTERN COUNTIES.—Mixed-class PRACTICE in pleasant agricultural district producing for last 12 months over £1,300 p.a. Fees 3/6 to 21/-. Nice house in good position with 2 reception, 4 bedrooms, dressing room, etc. Separate professional accommodation. Modern conveniences. Garden, garage. Price for freehold £1,300. Sport of all kinds and schools within reach.
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22. LONDON.—NORTH-WEST.—Recently established and steadily developing PRACTICE producing for last 12 months approximately £1,000, and increasing at the rate of about £200 p.a. Suitable house can be rented or flat obtainable. Premium 2 years' purchase.
23. LONDON.—SOUTH-WEST (CROYDON AREA).—Old-established good middle-class PRACTICE producing for last 12 months £1,576 p.a., including Panel of about 1,300. Suitable house with 2 reception, 5 bedrooms, etc., can be rented at £80 p.a. Premium 1½ years' purchase. Illness reason for sale.
24. EASTERN COUNTIES.—Very sound unopposed middle and working-class PRACTICE in agricultural district averaging £1,150 p.a., including Panel worth about £460 p.a. Fees from 3/-. Nice house with 2 reception, 6 bedrooms, etc., electric light, garden, garage. Premium for Practice and house, £3,350.
25. NORTHERN SUBURB WITHIN 10 MILES OF HYDE PARK.—Recently established better-class PRACTICE, steadily increasing and producing for last 12 months £760. Panel of about 560 and appointments worth £40 p.a. Good freehold house with 4 bedrooms, etc., garden, garage. Price £1,450. Premium £1,450 or near offer. Vendor retiring.
26. EASTERN COUNTIES.—COUNTY TOWN.—Well-established PRACTICE averaging about £1,100 p.a., including Panel of 1,061 and clubs producing about £350 to £400 p.a. Vendor retiring through ill-health and age, and states there is excellent scope for increase.
27. NORTH-EAST COAST.—Old-established PRACTICE producing about £900 p.a., but stated to be capable of considerable increase. Choice of houses Partnership introduction given, as vendor retiring.
28. MIDLANDS.—FAVOURITE RESIDENTIAL TOWN.—Chiefly better class non-dispensing PRACTICE, producing for last 12 months over £1,600. Panel of 560 and one appointment worth £150 p.a. Fees 3/6 to 21/-. Very nice house with ample accommodation, garden and garage. Freehold for sale. Premium 2 years' purchase.
29. CENTRAL LONDON.—PRACTICE is worked as a "Lock-up" and averages about £1,000 p.a. Fees from 2/6. Suitable accommodation can be obtained. Premium 2 years' purchase.
30. CROYDON AREA.—Recently established PRACTICE. Receipts for last 12 months over £660, including Panel of 350. House with 3 bedrooms, etc., garden and garage can be rented at £85 p.a. Premium £750.
31. SUSSEX.—ATTRACTIVE DISTRICT NEAR SEA.—PARTNERSHIP.—A ONE-FOURTH SHARE is offered (after preliminary assistantship of 6 to 12 months) in old-established Practice having good scope. Gross cash receipts for last 12 months approximately £3,275. Panel of about 1,300. Appointments worth over £300. Choice of houses on rental for ingoing partner. Premium 2 years' purchase.
32. NORTH LONDON.—Old-established PRACTICE producing about £700 p.a., including Panel of nearly 600 patients. Suitable house, ample accommodation and good garden, garage, to rent at £100 p.a. Premium £1,200.
33. SUSSEX COAST TOWN.—PRACTICE established 45 years for disposal owing to retirement of Vendor. Present receipts about £600. There is stated to be scope for increase as receipts have fallen owing to Vendor's illness. Panel about 650. Large house can be rented at £150, or purchaser could probably choose own residence.
34. LONDON.—SOUTH-EAST.—Old-established PRACTICE producing about £1,830 p.a., including select panel of 500. Fees from 3/6. Suitable house available with 2 reception, 5 bedrooms, etc. Freehold for sale. Premium 2 years' purchase.

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YORKSHIRE (W.R.).—Sound old-established middle and working-class PRACTICE in important city. If desired, a two-fifths share would be sold now and remaining share in 12 months. Cash receipts last year £4,355 and increasing. Panel 2,600. Great scope. Excellent corner house, with modern conveniences, 2 reception, 6 bedrooms, 3 Professional rooms, garage for 3 cars. Premium—Practice or Share—1½ years' purchase. Vendor retiring owing to ill-health.—No. 971.

DEATH VACANCY.—CUMBERLAND.—Old-established unopposed Country PRACTICE. Cash receipts last year £1,032. Panel 350 and transferable appointments, £65 p.a. Excellent detached house, beautifully situated; 8 rooms; Professional rooms; garage for 2 cars and large garden. Premium—best offer for quick sale.—No. 972.

LANCS TOWN.—Old-established mixed-class PRACTICE. Cash receipts last year £2,750. Panel 2,494. Scope. Excellent House with good living and Professional rooms, for sale or may be rented. Premium—1½ years' purchase.—No. 984.

NEAR NEWCASTLE-ON-TYNE.—Colliery PRACTICE. Cash receipts last year £952. Panel 800. Scope. Good house to rent. Premium—1½ years' purchase.—No. 978.

LANCS TOWN.—Old-established Panel and Private PRACTICE in large town. Average cash receipts £1,310 p.a. Panel 903. Scope, Good house, 2 reception, 4 bedrooms, garage. Expenses low. Premium—1½ years' purchase.—No. 987.

YORKSHIRE (W.R.).—Sound mixed Panel and Private PRACTICE. Cash receipts last year approximately £1,400. Panel 1,450. Good house, 2 reception, [illegible] entrance), garage and garden. [illegible] 982.

[illegible] short Assistantship) in old-[illegible] coast town. Knowledge of Welsh desirable. Cash receipts £6,000 p.a. Panel 2,600. Well-equipped Hospital. Incoming partner would be required to live in flat. Premium—1/5th share (approximately £1,200 p.a.)—1½ years' purchase.—No. 988.

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LANCS TOWN.—Mixed class PRACTICE. Cash receipts £1,084. Panel [illegible] [illegible] year large [illegible] Suitable [illegible] for two men in partnership. Cash receipts last year £3,436. Panel 3,394. Two good houses, with ample accommodation and modern conveniences, each with garage, garden and tennis court. Premium—2 years' purchase.—No. 955.

NORTH WALES COAST.—Middle-class PRACTICE. Receipts £1,417 p.a. Panel 415. Excellent house with ample accommodation, garage and garden. Premium—£2,100.—No. 929.

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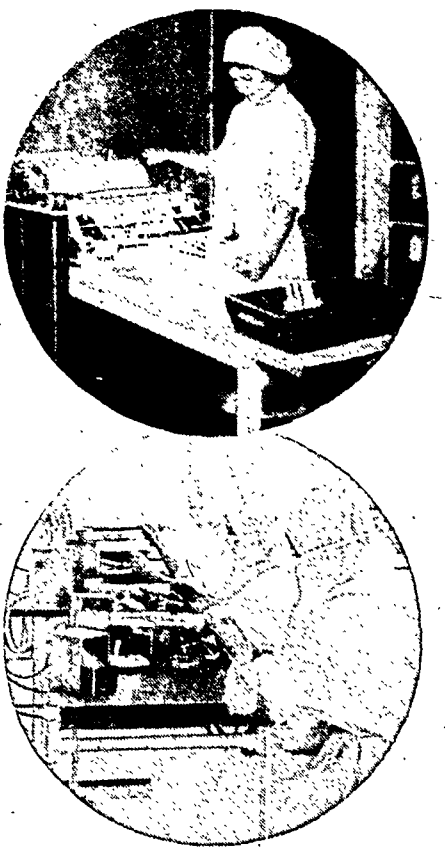
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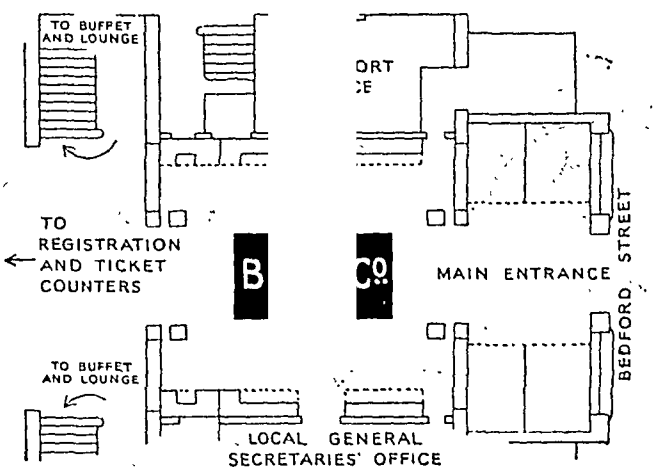
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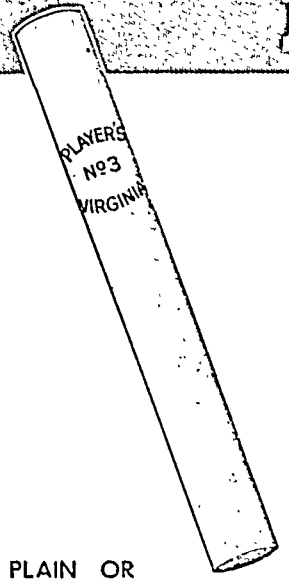
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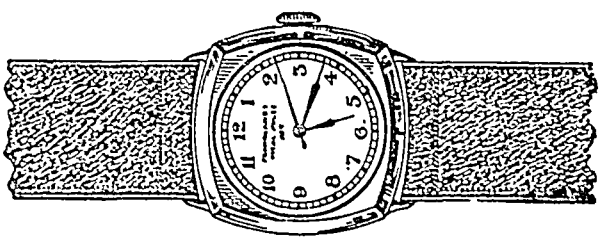
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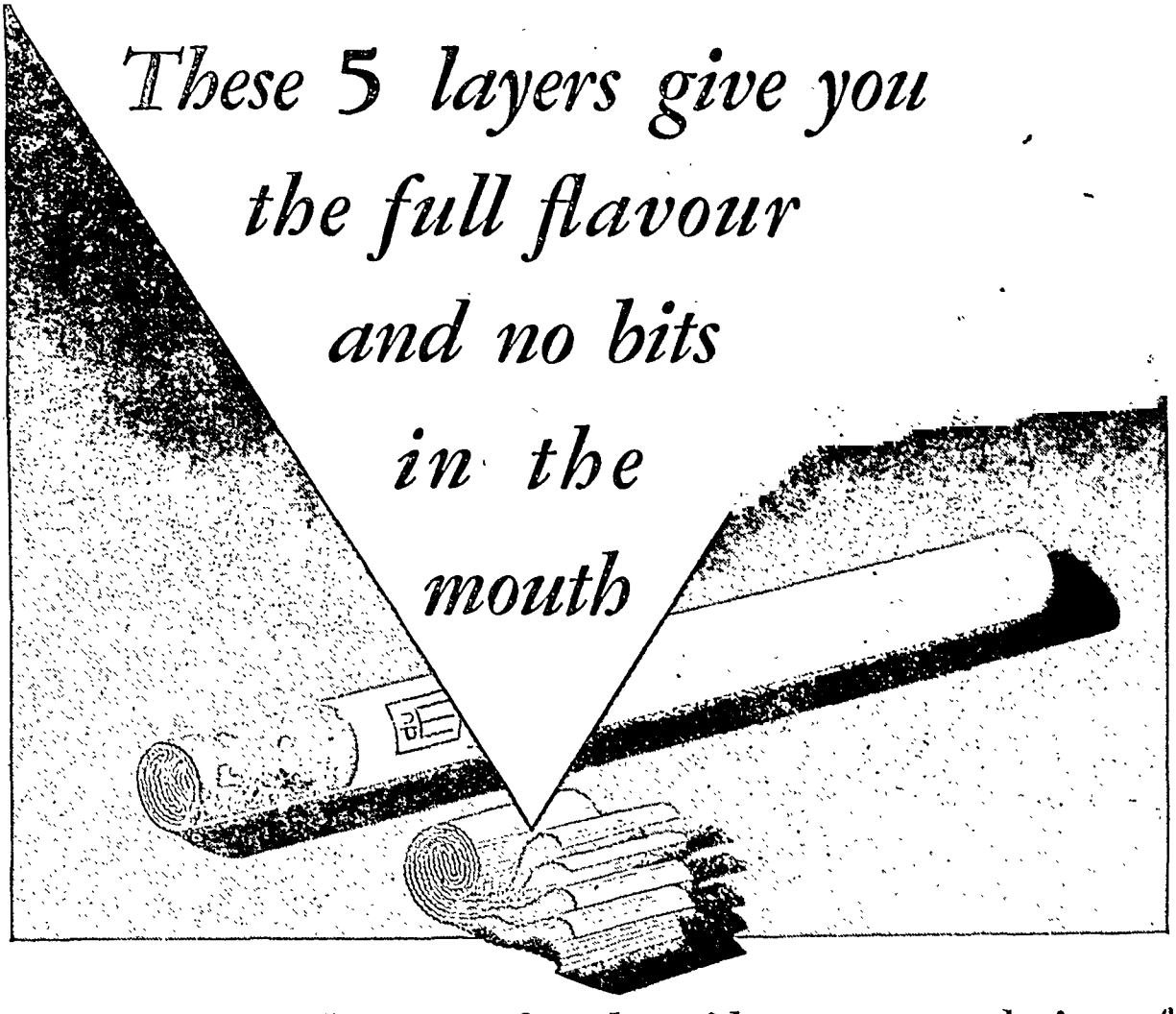
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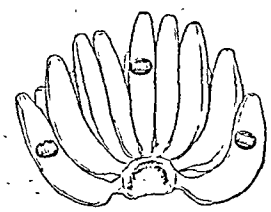
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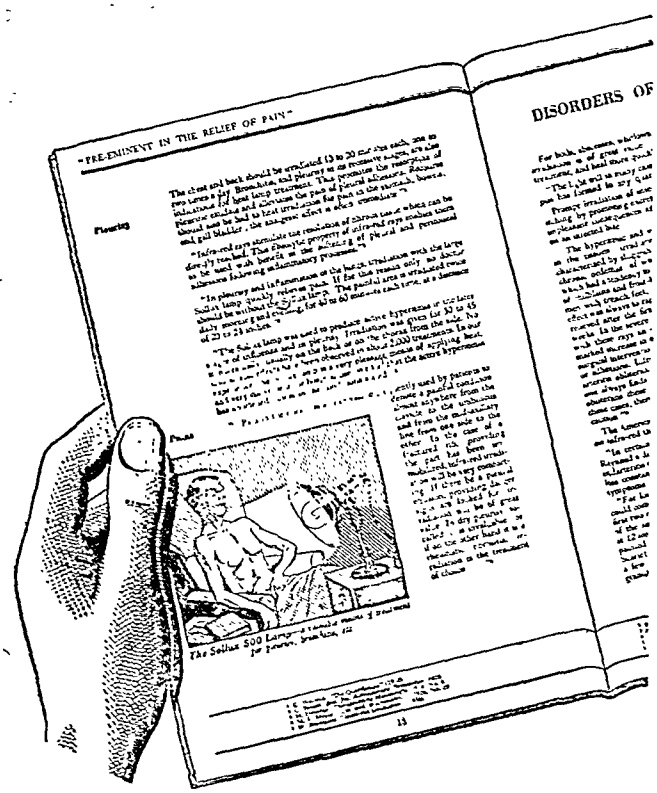
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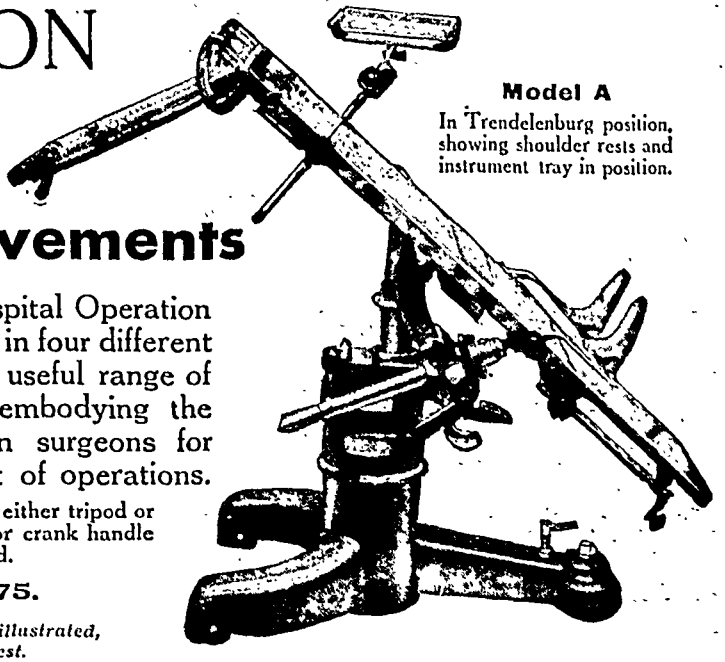
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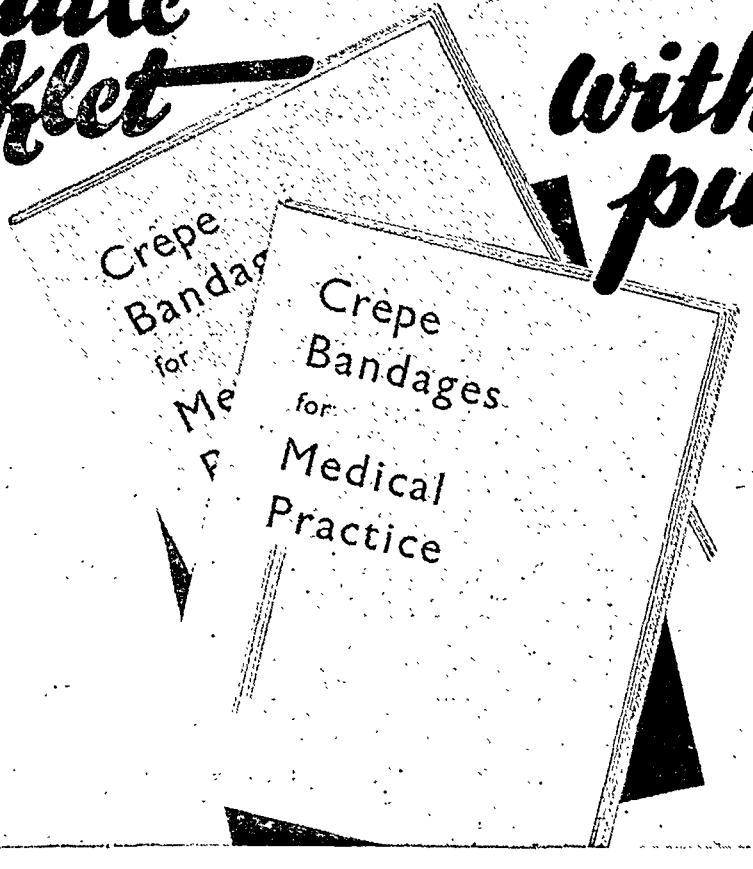
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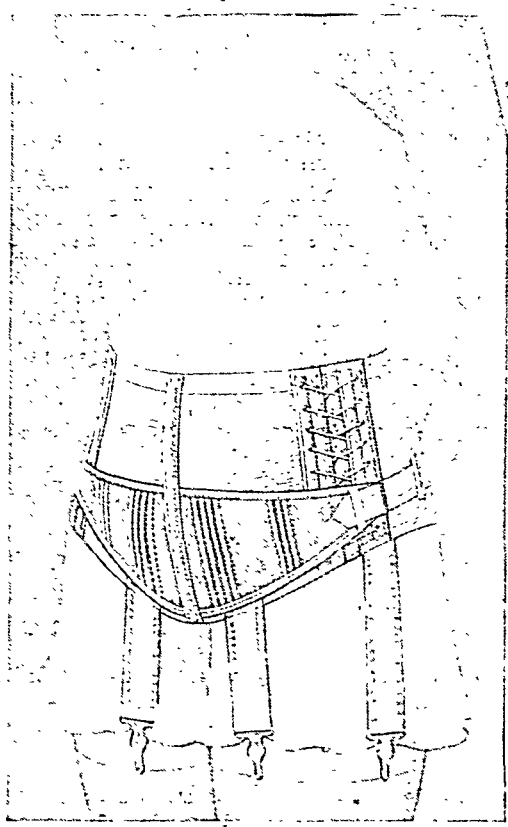
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BORWICK'S COLD WATER LEMON BARLEY POWDER

In attractive tins: 10½d, 1/3 and 2/3. Larger sizes for Institutions. Stocked by leading Chemists and Stores.
Sample will be gladly sent on application to:
GEORGE BORWICK & SONS LTD., 1, Bunhill Row, London, E.C.1. (Established nearly a Century)

INFANTILE ECZEMA.

A quick cure—'would usually take months' writes doctor.

The doctor's letter:

". . . I happened to have in my consulting room a baby with eczema of the scalp, which would normally have taken me months to cure.

I tried it with Sphagnol Ointment with most satisfactory results, and am so pleased with the preparation that I should be grateful if you would forward me a pound package of it."

Yours truly,
———, M.B.

Reports of speedy cures with Sphagnol Ointment are not uncommon, but the great virtue of Sphagnol Ointment is this—that from the first touch it is soothing, cooling. Used against eczema, Sphagnol brings sure relief from itching, and at the same time its healing peat principle helps the growth of clear, healthy skin.

Perhaps you have had no personal experience of Sphagnol. Then the makers will gladly send you free samples.

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REGD. TRADE MARK

- "A" TABLETS in Diarrhoea, Flatulence and Colitis.
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Samples and literature sent on request:—

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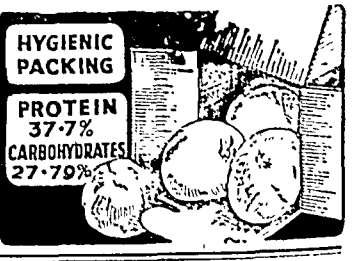
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Free Sample, Diet plans, and Analysis sent post free on request.

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Aluzyme is plain Brewers' Yeast, stabilised by dehydration at a low temperature. This leaves the cells intact; Aluzyme contains 95% of vital cells and therefore provides all the essential constituents of yeast in the fully active state of living substance. Officially certified Vitamin potencies: B_1: 1140 Internat. Units per ounce. B_2 Complex: Maximum for Dried Yeast. Sulphur content, 0.47%; Nuclein, 0.4%. Glutathione reaction, brilliant magenta. Its therapeutic value in B avitaminosis, furunculosis, and the Anaemias is apparent from these particulars.

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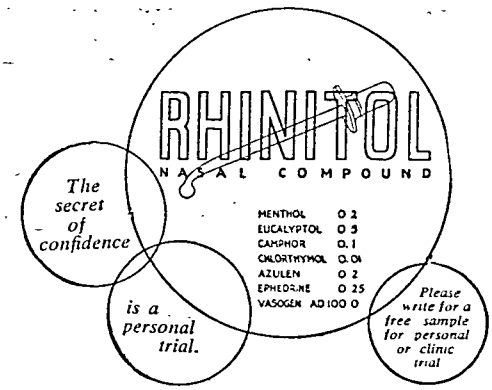
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NASAL CONGESTION and CATARRH

RHINITIS, CORYZA, LARYNGITIS, SINUSITIS and all other affections of the upper respiratory tract are :—

1. Its very low ephedrine content.
2. Its property of emulsifying with body fluids owing to the vasogen vehicle.
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The advantage of "Somnigen" is that it does not produce the Headache, Nausea, Furred Tongue, or Constipation so frequently noticed when preparations of Opium or Morphine are administered. It contains the whole of the Alkaloids of Opium in chemical combination with Hydrobromic Acid, which assists the sedative action, and is STANDARDISED so as to contain 0.75 per cent. Morphine, but entirely free from nauseous odour and characteristic taste.

As an Hypnotic, Sedative, Opiate and Diaphoretic it has always given great satisfaction, as its action is most regular and certain, producing refreshing sleep without unpleasant after-effects

"It is free from the odour of the ordinary Tincture of Opium, and does not produce the same disagreeable after-effects."
—THE MEDICAL ANNUAL.

"It has the advantage of not being followed by nausea and headache and other drawbacks of Laudanum."
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THE DOSE IS 5 TO 40 MINIMS.

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NEO-MONSOL GERMICIDE

FOR SAFE ANTISEPSIS:

Six times stronger than pure Carbolic Acid.

NON-TOXIC and NON-STAINING.

Samples and data from:—

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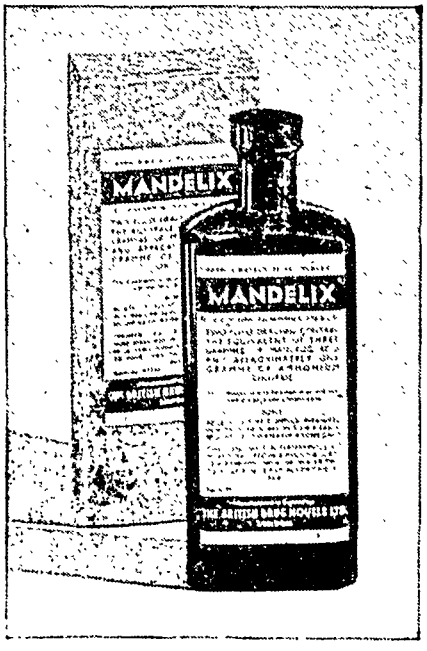
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Vita Pure Vineyard Grape Juice retains the therapeutic power of the living fruit, because its ferments are alive and vigorous. During the past months hundreds of practitioners have investigated this statement and found Vita worthy of their recommendation for nutritional maladies and as a 'health-giving' early morning drink. Concentrated by a low temperature process which keeps the vitamins unchanged, Vita is non-alcoholic and economical. A tablespoonful well diluted with water is a recommended dose.

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We invite the practitioner to enquire for further particulars and a sample bottle. Will you please investigate VITA, too?

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MANDELIX

(Elixir of Ammonium Mandelate B.D.H.)

In Urinary Tract Infections

Mandelix therapy possesses the following advantages:

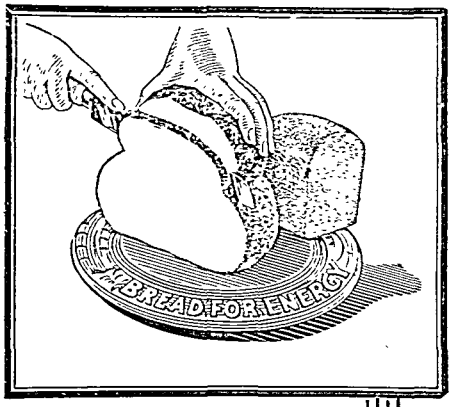
1. The elixir is administered orally, and supplementary administration of ammonium chloride is unnecessary.
2. The flavour of Mandelix is acceptable, and the treatment has the willing co-operation of the patient.
3. Sterile urine is produced usually within a week, even in chronic infections.

Descriptive literature on request

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the basis of a balanced diet



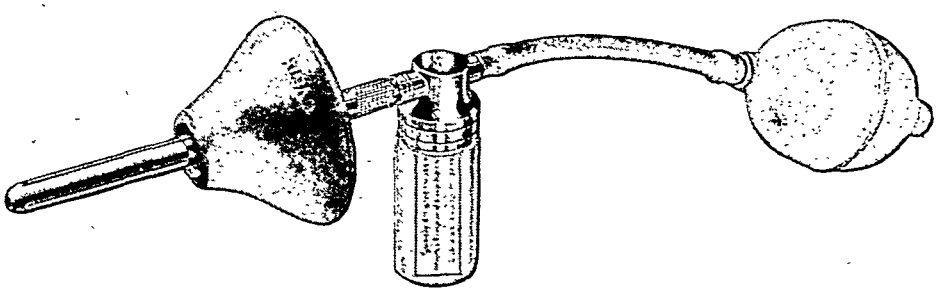
Apart from its value as the cheapest and most convenient of Carbohydrate foods, Bread plays a supreme part in human metabolism because of suitability as a vehicular accompaniment of fats and proteins and because of its aid in the assimilation of these foods.

B R E A D
for Energy

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In the treatment of
TRICHOMONAS VAGINALIS
and non-specific vaginitis



'PICRAGOL' *Regd.*

Insufflator
Brand Vaginal Powder
Brand Vaginal Pessaries

Excellent results have been reported both in general practice and in controlled tests carried out in a leading London clinic from a new therapy for the treatment of vaginal disorders, in particular vaginitis due to Trichomonas Vaginalis infestation. This therapy consists of two insufflations at one week's interval using the special 'Picragol' insufflator (illustrated above) and 'Picragol' vaginal powder. Following each insufflation one 'Picragol' pessary is inserted each night for six nights. A large percentage of cures has been established at the end of a fortnight's course of treatment as outlined above.

Physicians who are interested in this new therapy are invited to write for details to

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Modern Iron Therapy

Iron 'Jelloids' are an elegant and reliable means of administering the proto-carbonate of iron. The preparation has none of the disadvantages of Pil. Blaud. The iron content remains fresh and unoxidized indefinitely, and injury to the teeth is avoided.

The 'Jelloids' are highly effective in the treatment of achlorhydric anæmia and indeed in all the simple anæmias in which massive iron therapy is indicated.

Iron Jelloids

You are cordially invited to apply for samples for clinical test.
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KAYLENE BRAND OF COLLOIDAL KAOLIN WITH HIGHLY VISCOUS LIQUID PARAFFIN

DUAL ACTION:—

DETOXICATION

PLUS

EVACUATION

Kaylene-ol is indicated in the treatment of Intestinal Toxaemia and Stasis, Chronic Colitis, dietary indiscretions and in all conditions due to toxic absorption from the bowel.

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KAYLENE TERRA SIC ILLATA BRAND

A POWERFUL
MERCURIAL DIURETIC
WITH
MINIMUM TOXICITY

NOVURIT

IN CARDIAC AND CARDIORENAL EDEMA, ASCITES, OBESITY, Etc.

ISSUED IN THE FORM OF INJECTIONS and SUPPOSITORIES

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THE WORLD-RENOWNED **NATURAL** MINERAL WATER

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PRIMARY DYSPEPSIAS:
Hyperpepsia—*Intermittent hyperchlorhydria.*
Hypopepsia and apepsia—Dyspepsia arising from disturbance of neuromotility.
Intermittent pyloric stenosis, not of organic origin.

SECONDARY DYSPEPSIAS:
Arthritic dyspepsia.
Toxic dyspepsia (gastro-hepatic).
Dyspepsia due to enteroptosis.

MALARIA AND TROPICAL DISEASES. URINARY GRAVEL.

NATURAL VICHY SALT for Drinking and Baths.



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Congestion due to excessive or improper feeding.
Congestion due to cirrhosis (before the cachectic stage).
The diathetic congestions of diabetic, gouty, and obese persons.
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DIATHESIS.

The diabetes of fat people. Arthritic obesity. Uricaemia and gout. Rheumatic gout.

VICHY DIGESTIVE PASTILLES prepared with Natural Vichy Salt.

CAUTION.—Each bottle from the STATE SPRINGS bears a neck label with the word "VICHY-ETAT" and the name of the SOLE AGENTS

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Bangor Wharf, 45, Belvedere Road, London, S.E.1 And at Liverpool and Bristol

Samples free to Members of the Medical Profession.

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(*Evans*)

In the Anaemia of Pregnancy

Much fatigue during pregnancy is due to anaemia and this adds to the hazard of other complication which may occur. The accepted treatment is inorganic iron in ample dosage, but as many anaemias accompany a long-standing deficiency of gastric acidity, the iron should be in a form which is readily available to the system.

Colliron is ideal for this purpose as it is readily assimilated being a concentrated colloidal solution of Ferric Hydroxide. A graded course will often prove beneficial also in the last three months of normal pregnancies.

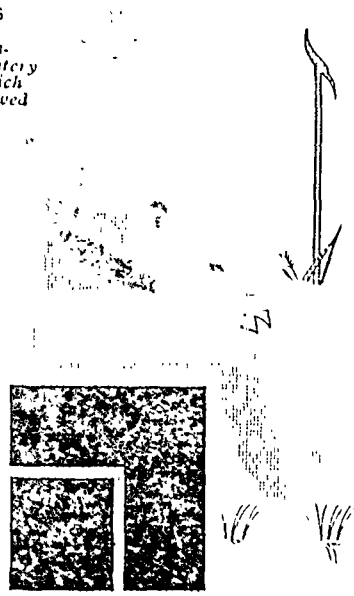
Dosage:—20 minims three times daily

Colliron is issued in bottles:
4-fld. oz., 3/- ; 8-fld. oz., 5/- ; 16-fld. oz., 9/6 ; 80-fld. oz., 40/- (Hospital size)

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IN SICKNESS AND CONVALESCENCE



GODDESS NEITH. *Personification of watery Abyss which was endowed with self creation.*

THE impairment of digestive powers which is commonly met with in the feverish patient, combined with the lack of desire for food, often aggravates the difficulty of adequately replacing the increased loss of energy and destruction of tissue which occur.

"Ovaltine" provides a satisfactory solution to the problem of alimentation in many cases of sickness and in the stage of convalescence after severe, prolonged and debilitating illnesses, where an easily assimilable, palatable and concentrated nutrient is required. It is always acceptable.

"Ovaltine" replaces with advantage the ordinary milk preparations which so often prove distasteful to the invalid. Prepared from full-cream milk, eggs and malt extract in carefully balanced proportions, it provides complete nourishment in the most readily assimilable form.

A liberal supply for clinical trial sent free on request.

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M.278



PHOTOGRAPHED JULY 29, 1932.

UNYIELDING SKIN LESION

(Psoriasis—Duration 21 years)

which did not respond to previous treatment

PERMANENTLY ELIMINATED

with

BELZEMA

BRAND OINTMENT

The case illustrated had resisted treatment for 21 years. Lotions, ointments, violet ray and mineral baths were employed ineffectively. BELZEMA soap and BELZEMA OINTMENT completely eliminated the condition in less than four months. This says more for the action of the BELZEMA Treatment than could easily be expressed in words. It has long been proved valuable in a wide range of indications :

ECZEMA • **ACNE**
PSORIASIS • **DANDRUFF**
RINGWORM • **ALOPECIA**

and other skin disorders.

BELZEMA **SOAP**

cleanses and prepares the skin for the absorption of BELZEMA Ointment. It is absolutely pure—contains no synthetic perfume — no artificial colouring—no free alkali — recommended for personal hygiene.



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NOT A SMEAR — There is no greasy residue. It is completely and rapidly absorbed.

NO BANDAGING — Permits air to act freely. Allays itching at once.

ECONOMICAL — Permanency of results establishes BELZEMA Ointment as an effective and economical treatment.

EVERY PHYSICIAN SHOULD TEST THE BELZEMA TREATMENT. Send for samples for clinical trial to :—

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Valentine's Meat-Juice

IN Dyspepsia, Catarrh of the Stomach or Intestines, or Gastric Irritability from any cause, when the Digestive Organs reject milk and other foods, Valentine's Meat-Juice will be Retained and demonstrate its Power to Restore and Strengthen.

It is in constant use in Hospital and Private Practice and endorsed by eminent Medical Men.

Physicians are invited to send for Clinical Reports.

For Sale by European and American Chemists and Druggists.



VALENTINE'S MEAT-JUICE COMPANY
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ASTHMA

HAY FEVER

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"One drachm doses (0.5 gm. Caffeine Iodide) are worthy of a trial. There appears to be far less liability to iodism with this preparation than with potassium iodide."

Medical Press and Circular, May 20th, 1936., p. 454.

"EUPNINE VERNADE"

The original stable solution of Caffeine Iodide

RELIEVES lung congestion

PROMOTES diuresis

STRENGTHENS the heart

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IODATOL, 40 PER CENT.

For use in X-Ray Diagnosis

Iodatol, 40 per cent., a pale, viscous oily fluid, opaque to X-rays, conforms with the official specification for iodised oil—Oleum Iodisatum (Addendum 1936 to the *B.P.* 1932).

The injection of Iodatol, 40 per cent., as a means of conducting explorations of various delicate organs and cavities of the body, is regarded as a routine procedure. In bronchiectasis it makes possible a complete investigation of the bronchial tree; in spinal disease it renders possible the diagnosis of spinal cord tumour. It is employed in salpingography, in suspected pulmonary tumours and in the exploration of abscesses and fistulae.

Iodatol also finds a useful place in therapeutics.

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TRADE MARK
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A powerful
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for the treatment of
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Tablets of 1½ Grains.

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Butobarbital + Phenacetin

SEDATIVE and ANALGESIC
to produce sleep in cases of
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Tablets of 5 Grains.

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For the patient who is run-down or depressed

In the case of the patient who for no apparent reason is run-down or depressed and, generally, 'below par', a course of Livogen often brings about spectacular results.

The appetite returns, metabolic processes are stimulated, depression disappears, and a return to the 'joy of living' is apparent.

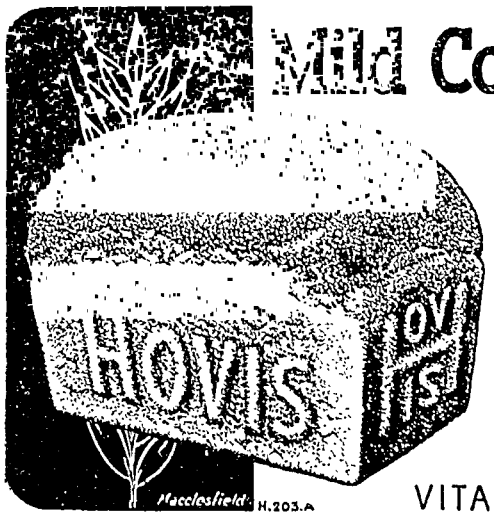
Livogen is rendered particularly acceptable at this season of the year if it is administered in iced water or soda water.

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Mild Constipation shown to yield to laxative effect of HOVIS

Many of the mild forms of constipation so prevalent to-day are attributed to the consumption of foods deficient in Vitamin 'B.' In comparing the effects of various kinds of bread it is seen that HOVIS germ bread is superior to either white bread or wholemeal in supplying this deficiency.

Whilst white bread contains practically no Vitamin 'B,' HOVIS, with its added proportion of 25% wheat-germ, supplies an abundance of this essential food-element. Unlike wholemeal bread, HOVIS contains only a minute percentage of bran and indigestible cellulose. In other words its incorporation in the normal diet ensures not only a higher standard of nutrition but easier assimilation and regular evacuation of the intestinal contents.

VITAMIN 'B' CONTENT ACTS AS AID TO REGULARITY

BY APPOINTMENT

Schweppes

SUGAR-FREE GINGER ALE . . . .
SUGAR-FREE TONIC WATER. . .
SUGAR-FREE SPARKLING LIME

Approved by the Institute of Hygiene and the Diabetic Association.

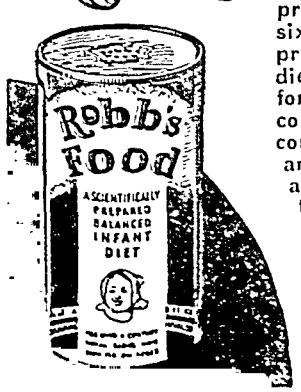
These beverages have been analysed by the Institute of Hygiene and found "free from sugar and metallic contaminants." The analyses shown have been accepted by the Medical Advisory Council of The Diabetic Association and recommended for diabetic and obese subjects.

ANALYSIS SHOWED THE FOLLOWING RESULTS:

	Schweppes Sugar-Free Dry Ginger Ale	*Ordinary Dry Ginger Ale*	*Schweppes Sugar-Free Tonic Water*	*Ordinary Tonic Water*	*Schweppes Sugar-Free Sparkling Lime*	*Ordinary Sparkling Lime*
Carbohydrates	absent	6.2%	absent	9.1%	absent	11.8%
Protein	absent	absent	absent	absent	absent	absent
Fat	absent	absent	absent	absent	absent	absent

FOR FREE SAMPLES WRITE TO: MESSRS. SCHWEPPES LTD, 1 CONNAUGHT PLACE, LONDON, W.2

Robb's Food

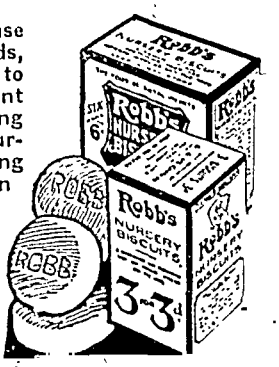


provides for babies under six months a scientifically prepared balanced infant diet in easily digested form for feeding-bottle use. It contains all the necessary constituents for nutrition and healthy development and is most acceptable to the requirements of infantile digestion.

Put them on Robb's 'RIGHT' from the start

Robb's NURSERY BISCUITS

are recommended for use from six months onwards, containing vitamin A to D, low in starch-content and supplying the growing body with complete nourishment without putting the slightest strain on the delicate digestive system.



The Food of Royal Infants

Testing samples and descriptive literature sent on request.

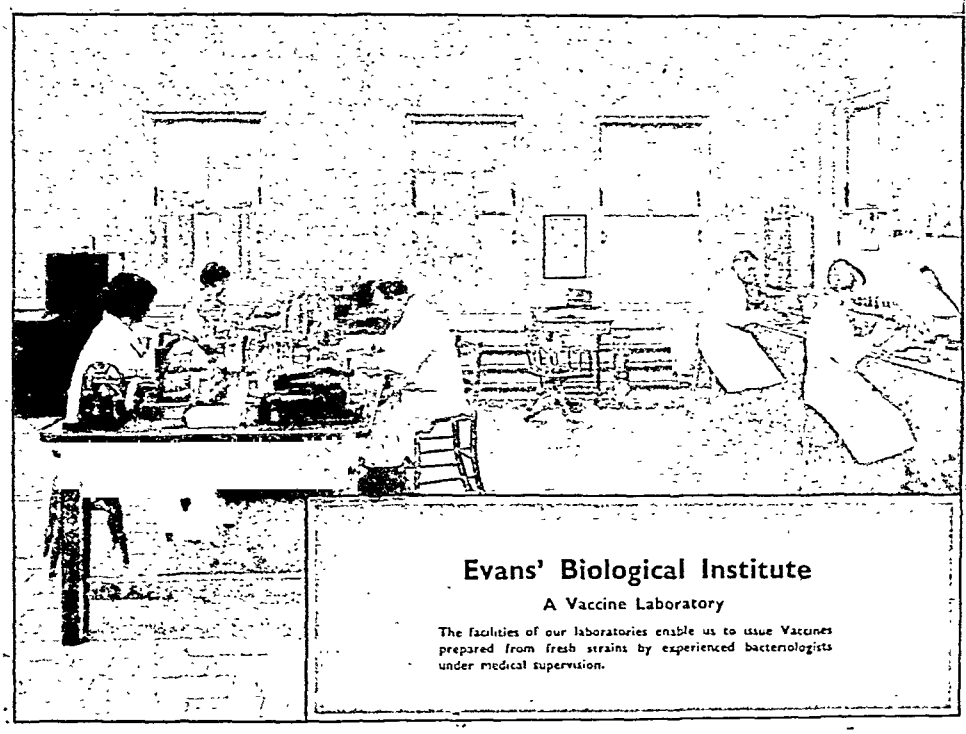
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Full list of standard vaccines on application



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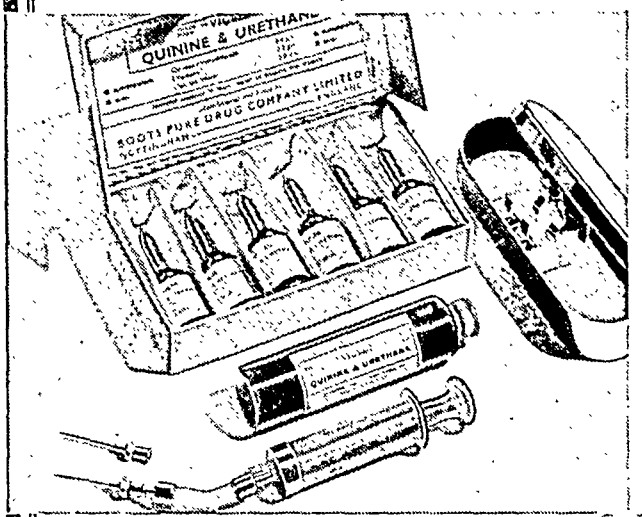
A Vaccine Laboratory

The facilities of our laboratories enable us to issue Vaccines prepared from fresh strains by experienced bacteriologists under medical supervision.

Evans Sons Lescher & Webb Ltd.

LIVERPOOL and LONDON

For the Injection Treatment of VARICOSE VEINS



'VIULES' QUININE AND URETHANE

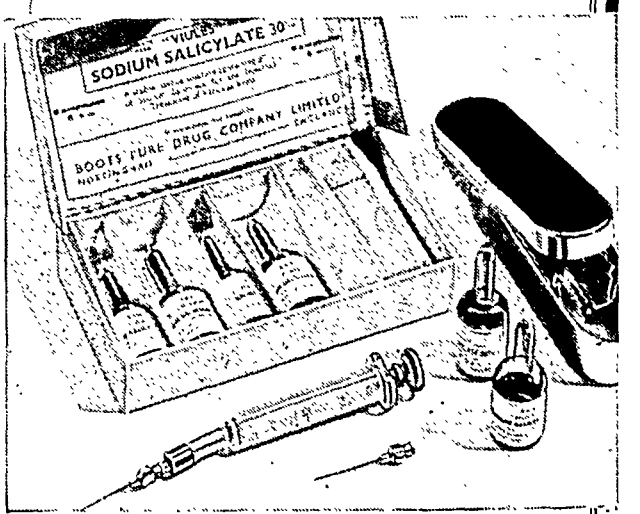
QUININE AND URETHANE has the advantage of being painless during injection. Quinine hydrochloride, B.P. has been used in the preparation of this product and although less soluble than quinine bihydrochloride it has been found to be clinically much more effective in treating varicose veins.

Supplied in 2 c.c., 3 c.c., and 5 c.c. ampoules
Single ampoules and boxes of 6 ampoules
20 c.c. rubber-capped vials

'VIULES' SODIUM SALICYLATE 30%

SODIUM SALICYLATE 30% is of particular value in the treatment of patients who have an idiosyncrasy to quinine, and is sometimes preferred when the veins are large.

Supplied in 2 c.c., 3 c.c., and 5 c.c. ampoules
Single ampoules and boxes of 6 ampoules



The injection treatment of Varicose Veins is fully described in our new booklet entitled—"THE TREATMENT OF VARICOSE VEINS BY INJECTION" which will be sent on request.

WHOLESALE AND EXPORT DEPARTMENT

BOOTS PURE DRUG COMPANY LTD.

NOTTINGHAM ENGLAND

Cystopurin

The ideal urinary antiseptic for oral administration!

1 Produces no gastric irritation or toxic symptoms.

2 Is readily absorbed from the gut and excreted in the urine.

3 Causes no renal irritation.

4 Renders the urine bactericidal in low concentrations.

5 Acts from the renal pelvis downwards.

6 Is active in either acid or alkaline urine.

7 Perfectly safe for use in febrile conditions.

8 Acts on all causative organisms of urinary infections.

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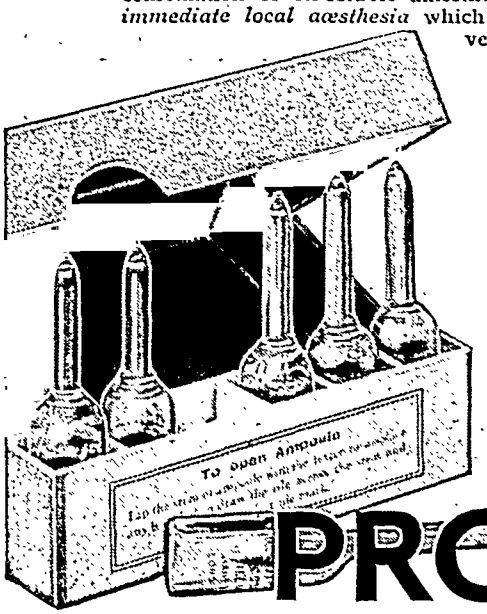
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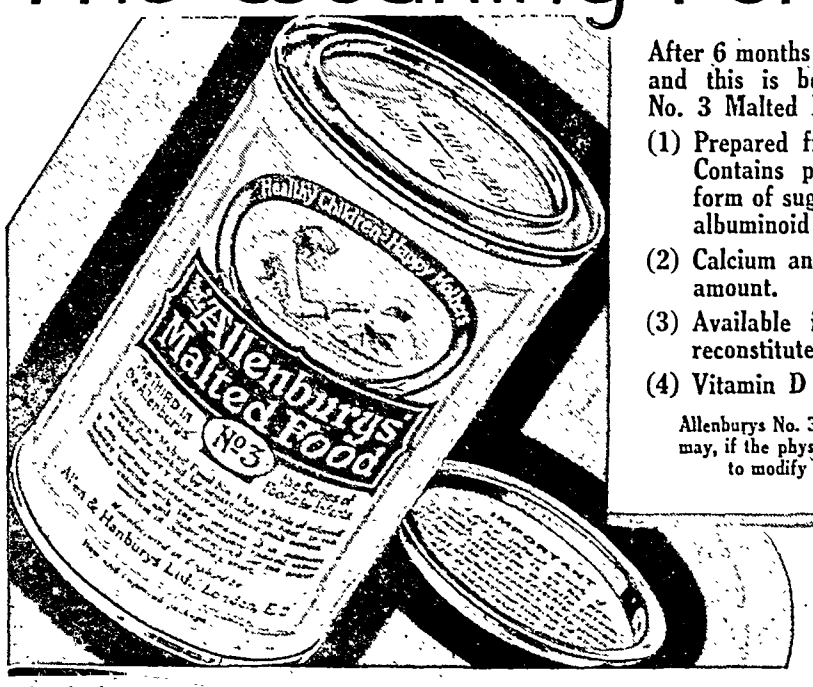
[1] *British Medical Journal*, 1935, November 16th, p. 938

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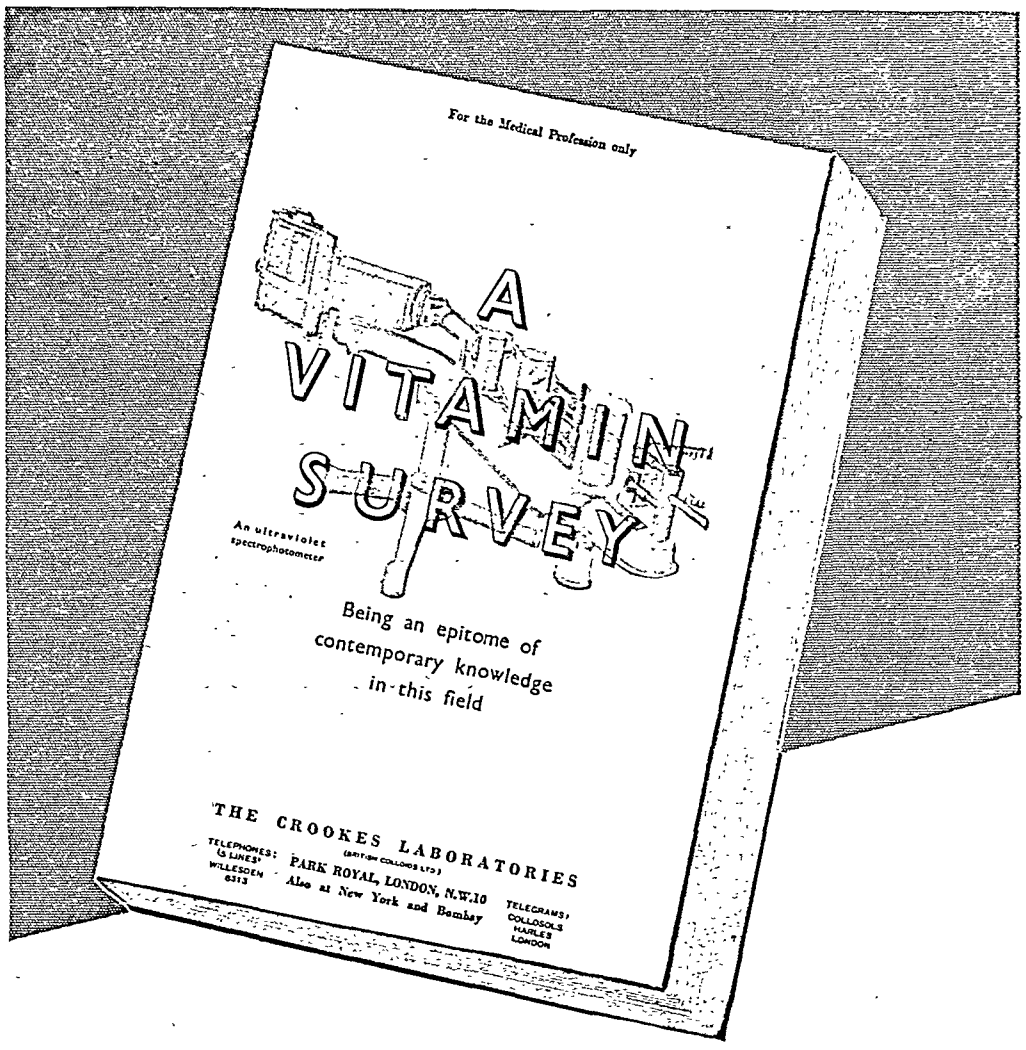
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PRONTOSIL IN THE TREATMENT OF ERYSIPELAS

A CONTROLLED SERIES OF 312 CASES*

BY

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There is by this time a considerable literature on the experimental and clinical results of the use of prontosil and the sulphonamide derivatives. It is not intended to review that literature in this paper. It may be pointed out, however, that so far as erysipelas is concerned no work has been published dealing with a large series of cases properly controlled. There has not been comparison with other cases of the disease during the same period of review, in every way similar as regards nursing and diet and differing solely in the special lines of treatment to be investigated. Such a series is presented here.

The material consists of all cases diagnosed as erysipelas after admission to Ruchill Hospital, Glasgow, from the middle of May, 1936, to the middle of February, 1937. Erysipelas is a notifiable disease, and Ruchill Hospital receives all notified cases of erysipelas admitted to hospital in Glasgow, so that the material is thoroughly representative of the incidence of the disease in this district during the period reviewed. All the patients were under the clinical control of one of us (T. A.).

Plan of Investigation

Apart from the specific treatment shortly to be described all cases were treated under strictly comparable conditions. Thus the wards to which they were admitted and the personnel of the nursing staff were common to all groups. A standard diet was adopted. When required the same laxatives were used. No local treatment was given. Ultra-violet light was chosen for the treatment of the control series because it was already the routine method employed in the hospital. There is a considerable literature indicating its value in the treatment of erysipelas. Publications by Fantus (1934), Titus (1934, 1934a), Sutherland and Day (1935), and Lavender and Goldman (1935) may be cited in evidence. The first 161 cases were, in order of admission, allocated to three special groups. Group 1 received treatment only by ultra-violet light; Group 2 only by prontosil; Group 3 both by ultra-violet light and by prontosil. The fatality rate when 161 cases had been admitted was exceptionally low, and as two-thirds of the series had received prontosil it was thought advisable to alter the proportion of cases treated with this drug. Therefore the second 151 cases were divided into three groups, of which the first two were the same as before, but the cases in the third group received treatment solely with Messrs. Burroughs Wellcome's concentrated scarlet fever antitoxin (globulin fraction).

The numbers in each section vary slightly, since six cases were removed. In these it was considered, after further observation, that the original diagnosis of erysipelas was doubtful. Thus the actual numbers in the treatment groups are: ultra-violet light, 104; prontosil, 106; U.V.+ P., 54; antitoxin, 48. As the cases which received ultra-violet light or prontosil in the first series of 161 are strictly comparable to those similarly treated in the second group of 151, comparison is permissible between the cases receiving ultra-violet light and prontosil in the first series and those treated by scarlet fever antitoxin in the second group.

Details of Treatment

Ultra-violet Light.—A portable mercury-vapour lamp (Messrs. Kelvin, Bottomley, and Baird) was used at a distance of twelve inches from the margin of the lesion. For female cases the exposure was of eight minutes' duration, equal to one and a half erythema doses; for male cases the exposure was for ten minutes—in each case once daily. Exposures were repeated at intervals of twenty-four hours when considered necessary. The average number of exposures per case was 2.6.

Prontosil.—The original prontosil "red" of Messrs. Bayer Products, Ltd., was used. Treatment was begun on admission. The drug was given by mouth. The dosage was 1, 2, or 3 tablets of 0.3 gramme each at four-hourly intervals, and administration was continued until the temperature became normal, this being according to the original recommendation. The average case dosage was 5 grammes; the minimum dosage was 1.2 grammes, the maximum 15 grammes. Prontosil "soluble" was given by the intramuscular route in ten cases. In four it was the only method of employing the drug—the average quantity given being 1.5 grammes. In the other six prontosil "red" was also given by mouth. In these six cases the average dosage of prontosil "soluble" was 1 gramme in all. Cyanosis occurred in two cases. It was the only toxic effect present in this series. It was not severe, was only of short duration, and did not prevent the resumption of the drug. No saline purgatives or sulphur were used in any of the 312 cases.

Ultra-violet Light plus Prontosil.—This was a combination of the methods of treatment just described.

Scarlet Fever Antitoxin. One dose was given on admission, either by the intravenous or by the intramuscular route. A further injection was given in a few cases only.

* A Report to the Therapeutic Trials Committee of the Medical Research Council.

The average dosage was 30 c.cm., equal to 30,000 units. All the patients were desensitized before the antitoxin was administered.

Records of Results

The following data were noted in each case: sex, age, duration of illness before admission, and whether the disease was primary or recurrent, idiopathic, or traumatic. The local lesion was considered with regard to its site, extent, swelling, painfulness, and tenderness; the patient's temperature and pulse rate were recorded four-hourly; and toxaemia was estimated under the following headings —prostration, headache, state of tongue, insomnia, vomiting, abdominal distension, and delirium. The urine was examined daily. Intercurrent diseases or degenerations were described; complications, relapses, and recurrences were noted. Each case was reviewed daily. In short, a careful attempt was made to record similar observations on each case in a comparative manner.

Assessment of Results

1. The distribution of the individual cases in the different treatment groups must be considered in respect of certain factors known to influence the course of the disease. Those regarded of greatest importance are (*a*) the duration of the disease before admission to hospital; (*b*) the age of the patient; (*c*) the severity of the infection; (*d*) associated diseases. All that need be stated at present is that tables constructed to show the relation of these factors to the types of treatment indicate an even distribution. A statistician who has examined them is satisfied that there was no weighting of any one line of treatment by any of these factors.

2. The question when "cure" is achieved has to be determined. The fatality rate in erysipelas is so low that it cannot be used in a small series of cases to assess the value of a therapeutic measure. It has other disadvantages, to be mentioned later. There is no single clinical feature which can be regarded as a satisfactory criterion of recovery. Cases are seen where the lesion continues to spread after the temperature has become normal; and, again, it is not uncommon for the local lesion to cease spreading while the temperature is still elevated and the patient continues in a toxic condition. In order to arrive at a conclusion in this series of cases attention was paid to the following points from the commencement of treatment: (i) the duration in days of spread of the local lesion; (ii) the duration in days of the primary pyrexia; (iii) the time in days which elapsed until the patient was free from the toxic symptoms. It was felt that the information gained from these observations would allow a comparison to be made between the effects of different methods of treatment.

Results of Treatment

Reference to the second paragraph under the heading "Plan of Investigation" will show that the number of cases treated with either ultra-violet light or prontosil alone is approximately double that of cases treated with ultra-violet light plus prontosil or with scarlet fever antitoxin alone. This must be borne in mind when considering the following tables. In compiling these tables patients who died have been excluded. There were fifteen deaths, and therefore the total number of cases is reduced to 297. The reasons for the exclusion of fatal cases from the first three tables will be mentioned later.

TABLE I.—*Spread of Lesion*

Method of Treatment	0 Days	1 Day	2 Days	3 Days	4 Days	5 Days and Over	Total Cases
Ultra-violet light ..	32 (32.65)	26 (26.53)	17 (17.34)	11 (11.22)	5 (5.1)	7 (7.14)	98
Prontosil	48 (47.06)	36 (35.29)	16 (15.69)	1 (0.98)	1 (0.98)	0	102
U.V. light + prontosil	19 (35.85)	26 (49.06)	7 (13.21)	0	1 (1.89)	0	53
Antitoxin	14 (31.81)	7 (15.91)	10 (22.73)	9 (20.45)	4 (9.09)	0	44

The figures in parentheses are percentages.

Table I shows a slightly more favourable result as regards cessation of spread in those cases which received prontosil, either alone or in combination with ultra-violet light. Thus the proportion of cases which showed no spread in the lesion after the end of the first day are: ultra-violet light, 59 per cent.; prontosil, 82 per cent.; U.V.+ P., 85 per cent.; antitoxin, 48 per cent. After two days in hospital the lesion continued to spread in only 2 per cent. of all cases receiving prontosil, but with the other forms of treatment the lesion continued to spread in 25 per cent.

TABLE II.—*Duration of Primary Pyrexia*

Method of Treatment	Duration of Pyrexia in Days								Total Cases
	0	1	2	3	4	5	6	More than 6	
Ultra-violet light	9	16 (17.98)	27 (30.34)	12 (13.48)	11 (12.36)	4 (4.49)	9 (10.11)	10 (11.24)	98
Prontosil ..	10	37 (40.22)	33 (35.87)	14 (15.22)	2 (2.17)	5 (5.43)	0	1 (1.09)	102
U.V. light + prontosil	2	18 (35.29)	20 (39.22)	8 (15.69)	2 (3.92)	0	1 (1.96)	2 (3.92)	53
Antitoxin ..	4	10 (25)	4 (10)	2 (5)	7 (17.5)	5 (12.5)	6 (15)	6 (15)	44

The figures in parentheses are percentages given after deducting those cases which were apyrexial.

Table II shows a slightly more favourable result as regards duration of pyrexia in those cases which received prontosil either alone or in combination with ultra-violet light than in the others. Thus after deducting the cases which were apyrexial the percentages of those with no fever after forty-eight hours' treatment are: ultra-violet light, 49; prontosil, 76; U.V.+ P., 74.5; antitoxin, 35. Pyrexia continued for more than three days in only 8 per cent. of all cases receiving prontosil, but with the other forms of treatment the equivalent percentage was 41.

TABLE III.—*Duration of Toxaemia*

Method of Treatment	Duration of Toxaemia in Days								Total Cases
	0	1	2	3	4	5	6	More than 6	
Ultra-violet light	11	12 (13.79)	22 (25.29)	19 (21.84)	15 (17.24)	6 (6.9)	4 (4.59)	9 (10.34)	98
Prontosil ..	5	18 (18.56)	40 (41.24)	22 (22.68)	7 (7.22)	7 (7.22)	1 (1.03)	2 (2.06)	102
U.V. light + prontosil	3	11 (22)	18 (36)	8 (16)	6 (12)	3 (6)	2 (4)	2 (4)	53
Antitoxin ..	5	4 (10.26)	4 (10.26)	5 (12.82)	8 (20.51)	7 (17.95)	5 (12.82)	6 (15.38)	44

The figures in parentheses are percentages given after deducting those cases in which there was no toxaemia.

Table III shows a slightly more favourable outcome as regards duration of toxaemia in those cases which received prontosil either alone or in combination with ultra-violet light. Thus after deducting the cases with no assessable degree of toxaemia the percentages of those free from signs of toxaemia at the end of forty-eight hours' treatment were: ultra-violet light, 39; prontosil, 60; U.V. + P., 58; antitoxin, 16. After three days in hospital 21 per cent. of all cases receiving prontosil remained toxic; the equivalent percentage with the other forms of treatment was 39.

In the paragraph "Records of Results" the component elements investigated under the heading of toxaemia are given. While it is admitted that the precise duration of toxaemia is difficult to assess clinically, the observations were all made and recorded by the same individual. It is therefore considered that they have a certain comparative value.

Some further points now call for consideration.

Recurrence

Table IV shows the number of recurrences which took place in each treatment series. Deaths are not excluded from this table; accordingly the total is 312 cases.

TABLE IV.—*Recurrences*

Method of Treatment	Number of Recurrences	Total Cases
Ultra-violet light	12 (11.5%)	104
Prontosil	9 (8.5%)	106
U.V. light + protonsil	3 (5.5%)	54
Antitoxin	3 (6.3%)	48

No significant difference was found in this series that would point to the action of prontosil in preventing recurrences. It must be remembered, however, that treatment of all types was given during the acute stage only, and was not maintained after the subsidence of the local lesion and the cessation of fever and toxaemia. In a further series we are now undertaking instead of prontosil "red" a variety of the colourless sulphonamide is being used, and there will be a longer period of treatment with the drug in the hope of lessening the incidence of recurrence.

Complications

Table V shows the incidence of those septic complications directly attributable to infection with erysipelas. Among such conditions are abscess formation, septicaemia, thrombosis, and nephritis. Deaths are included in this table.

TABLE V.—*Cases Showing Complications*

Method of Treatment	Number of Cases showing Complications	Total Cases
Ultra-violet light	32 (30%)	104
Prontosil	23 (21%)	106
U.V. light + prontosil	14 (26%)	54
Antitoxin	20 (41.6%)	48

Although there is a lower complicated-case rate in the patients treated with prontosil, the percentage is higher where prontosil and ultra-violet light are used together. In the prontosil-treated groups, however, the combined incidence of complications is 23.1 per cent., in the other treatment groups the combined incidence of complications is 34.2 per cent. This difference is suggestive.

One type of complication deserves special mention. The incidence of nephritis in the four treatment groups is: ultra-violet light, seven cases; prontosil, *nil*; U.V.—P., one case; antitoxin, *nil*. It has been suggested that prontosil may have an irritant effect on the kidneys: this is not borne out by these figures.

The question of associated diseases—metabolic, degenerative, or infective—must also be considered. This factor is difficult to present succinctly, and is, on the whole, associated with the age groups. From an examination of the case records it is not thought to be of any importance in this series as regards the prolongation of the course of erysipelas, but it is of considerable importance with respect to the percentage of deaths.

Deaths

The number of deaths was fifteen out of 312, a percentage of 4.8. This is low if compared with the annual fatality rate given for Ruchill Hospital in the medical

TABLE VI.—*Details of Fatal Cases*

Sex and Age	Treatment	Amount of Therapeutic Agent administered	Complicating Diseases	Days in Hospital	Remarks
M. 50	Ultra-violet light	3 doses; 2nd, 3rd, and 4th days	Nil	4	Pyaemia and septic arthritis confirmed p.m. Blood culture, positive strep
F. 74	"	3 doses; 5th, 6th, and 7th days	Chronic myocarditis	2	Auricular fibrillation. No p.m.
F. 54	"	3 doses; 3rd, 4th, and 5th days	Carcinoma of pharynx being treated with radium needles	3	No p.m.
M. 69	"	3 doses; 4th, 5th, and 6th days	Chronic myocarditis	11	Bronchopneumonia and nephritis. No p.m.
M. 67	"	3 doses; 2nd, 3rd, and 4th days	Cholecystectomy performed immediately before admission	33	Left hospital in dying condition. Abscess of scalp. Acute nephritis. Uraemia
M. 49	Initial U.V. light failed; given prontosil	3 doses U.V. light; 1.5 gm. prontosil	Alcoholism	15	P.m.: Haemorrhagic nephritis. Streptococcal empyema
M. 18 365	Prontosil	3.9 gm. given in 2 days	Penis incised before admission as ? cellulitis	19	Recurrence. Extreme toxaemia. Abscess of sacrum
M. 76	"	4.8 gm.	Advanced epithelioma of ear	2	No p.m.
F. 4, 12	"	2.7 gm.—3.3 gm.—0.125 g.n. For 2nd and 3rd attacks	Nil	18	Had two recurrences P.m.: Streptococcal meningitis
M. 80	"	7.8 gm. given in 2 days	Nil	10	Cerebral thrombosis. No p.m.
F. 50	U.V. light and prontosil	2 doses and 80 c.cm.	Previously paralysed	19	P.m.: Cerebral thrombosis. Erysipelas quite subsided at time of death
F. 54	Antitoxin	50 c.cm. {30 c.cm. IV. 20 c.cm. IM.}	Diabetes mellitus	2	No p.m.
F. 58	"	30 c.cm. IV.	Diabetes mellitus	10	No p.m.
M. 50	"	30 c.cm. IV.	Alcoholism	5	P.m.
M. 57	"	30 c.cm. IM.	Chronic myocarditis	2	No p.m.

officer of health's annual returns. The percentages there for the past few years are: 1935, 7.5; 1934, 7.6; 1933, 9.3; 1932, 9.6; 1931, 7.7. These percentages include all patients classified in the hospital returns as cases of erysipelas, which represent two-thirds of all notified cases in Glasgow, amounting to about 670 admissions a year. A number of cases so classified have been omitted from the present series where there was doubt as to the clinical diagnosis. This makes the figures difficult to compare.

A point of general interest which has been noted in connexion with similar work conducted on other diseases may be mentioned—namely, that an investigation of this type is undoubtedly beneficial to the cases as a whole. The nursing and medical staff are keenly interested; observation is more acute and sustained; and complaints and complications are watched for and dealt with immediately.

The fifteen deaths are distributed as follows: ultra-violet light, six; prontosil, four; ultra-violet light and prontosil, one; antitoxin, four. These figures must be considered along with causes of death and the complicating diseases. Table VI gives the relevant information.

It is obvious that the cases which ended fatally ought not to be included in the tables concerned with the assessment of the results of treatment. Otherwise a patient who died on the second day in hospital would be shown to have ceased to exhibit spread of lesion, pyrexia, and toxaemia on the second day. It is apparent from these data that no definite conclusions can be drawn from the fatality rate as to the relative values of the different methods of treatment. Death is often determined by the combination of erysipelas and some other disease. Nevertheless in the series of 160 cases receiving prontosil alone or combined with ultra-violet light the fatality rate was 2.5 per cent., while in the 152 cases not receiving prontosil the fatality rate was 6.6 per cent.

Discussion

There is little to add to the comments already made on the data presented. We would emphasize the difficulties attendant on drawing conclusions from the treatment of a disease so variable in its severity as erysipelas. Among important variables difficult to assess are the virulence of the infection and the natural resistance of the patient. In this connexion the general bodily health of the patient and the presence or absence of associated conditions—metabolic, degenerative, or infective—are of consequence. A very large series indeed would be required before one could assert that all such factors were evenly distributed. The cases were arbitrarily grouped in grades of severity, termed mild, moderate, or severe; since mild and moderate grades of infection will tend to recover spontaneously, it was thought that more valuable information might be obtained by considering in detail the cases grouped under the heading "severe." The total number of such cases was, however, only forty-nine, spread over the four treatment groups. This number is too small to permit of any deductions being made from it alone, although the results are in favour of prontosil treatment.

We can state that in this series, so far as we can detect, no known factor is unduly preponderant in one group of cases, and the cases in the different groups seem to us reasonably comparable. Nevertheless, while it is desirable that the therapeutic trial of a new drug should be made on statistical evidence as far as possible, there is a place for the expression of a clinical opinion. In five of the cases originally entered in the prontosil groups the condition on admission was so severe that a fatal result would not have been unexpected. It was felt that prontosil definitely contributed to their recovery. One case which was originally in the ultra-violet group showed uncontrolled spread with high pyrexia for six days, and was in the typhoid state when it was decided to employ prontosil; the patient's recovery was completely unexpected. This case has been left in the ultra-violet light series and does not affect the percentages in the tables. Two further cases in the ultra-violet light series also received prontosil at a later date. These likewise do not affect the percentages.

The benefits due to prontosil in erysipelas are statistically assessable and are great enough to render the use of such drugs advisable in this disease until some better form of treatment is available, but the action cannot on the whole be termed dramatic.

Conclusions

1. A series of 312 cases of erysipelas was treated under controlled conditions with (*a*) ultra-violet light; (*b*) prontosil; (*c*) ultra-violet light and prontosil; or (*d*) scarlet fever antitoxin.

2. There was an even distribution of the individual cases in the treatment groups in respect of factors known to influence the course of the disease, such as (*a*) the duration of the disease before admission to hospital; (*b*) the age of the patient; (*c*) the severity of the infection; (*d*) associated diseases.

3. The average case dosage of prontosil was 5 grammes; the average duration of prontosil treatment was two days. Treatment was given during the acute stage only, and was not maintained after the subsidence of the local lesion and the cessation of fever and toxaemia.

4. The cumulative evidence indicates that those cases which received prontosil showed better results in respect of curtailment of (i) the duration of the spread of the local lesion; (ii) the duration of primary pyrexia; (iii) the duration of toxaemia.

This study was undertaken at the request of the Therapeutic Trials Committee of the Medical Research Council. We are indebted to Messrs. Bayer Products, Ltd., for the supplies of prontosil "red" and of prontosil "soluble." The χ^2 values and standard errors of the tables have been calculated by Dr. P. L. McKinlay, Medical Officer, Department of Health for Scotland. The statements made in the text are all borne out by the values found. We wish to express our thanks to him for his services. We are also indebted to Dr. W. M. Elliott, superintendent of the Ruchill Fever Hospital, for permission to carry out this investigation.

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The scientific exhibits at the Paris International Exhibition are grouped in the Grand Palais (Champs Elysees), which has been incorporated as part of the exhibition under the title "Palace of Discovery." Here exhibits from all parts of the world demonstrate scientific progress throughout the centuries. Sections are devoted to physics, chemistry, medicine, and surgery, and to each of these important contributions have been made by the Wellcome Historical Medical Museum. They include a collection of stethoscopes, showing the development of the instrument from the time of its invention to the present day, an exhibit showing the evolution of the clinical thermometer, and another illustrating the history of the transfusion of blood.

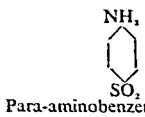
AGRANULOCYTOSIS AND PARA-AMINO-BENZENE SULPHONAMIDE

BY

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Kracke and Parker (1933, 1934) presented evidence that agranulocytosis might be caused by certain drugs, notably amidopyrine, phenacetin, certain gold salts, and arsphenamine. They pointed out that structurally these drugs possess in common the benzene ring with an attached NH_2 or amine group, which increases the ease of oxidation. A consideration of the formula of sulphanilamide suggested to us the possibility that this drug might



Para-aminobenzene sulphonamide.

also be capable of producing agranulocytosis. The matter appeared to be one of importance for various reasons. First, if the drug reduced the polymorph concentration in the blood in cases of infection against which it was therapeutically ineffective, it might affect unfavourably the course of the disease. Secondly, sulphanilamide is used in acute infections which are not infrequently fatal, and where the latter outcome resulted from agranulocytosis this might readily escape observation. Thirdly, the drug is available to the general public and has received considerable publicity in the lay press.

It was decided, therefore, to make observations on the leucocytes in sulphanilamide-treated patients. Complete agranulocytosis with fatal result occurred in the second case investigated. While the possibilities are obvious, it naturally cannot be determined whether this occurrence was or was not due to the administration of this drug.

Case of Agranulocytosis

The patient was a man of 53 suffering from acute rheumatism with joint pains and pyrexia. There was a history of previous attacks in 1901, 1908, and 1914. The condition failed to respond to salicylates, and prontosil album (3 grammes daily for eighteen days) was given. At the end of this period the clinical condition had deteriorated, the temperature running at a higher level than before, and treatment was stopped. Four days afterwards complete agranulocytosis was found, and blood culture, which had given no growth three weeks previously, now gave haemolytic *Staphylococcus aureus* and *Streptococcus viridans*. The patient died the following day.

The treatment administered is summarized in Table I, and the haematological observations in Table II.

TABLE I.—*Drugs administered*

Date	Drug	Dosage
8–11/4/37	Sodium salicylate	60 grains daily
18–23/4/37	„	60 „ „
12 and 18/4/37	Aspirin	50 „ „
26/4/37	„	30 „
3–21/5/37	Prontosil album (orally)	3 grammes „
13/5/37	Medinal	7½ grains
14/5/37	Veronal	10 „
19/5/37	Chloral	10 „
20/5/37	Veronal	10 „
25/5/37	Chloral	10 „
„	Pentnucleotide	0.7 gramme
26/5/37	Veronal	10 grains

TABLE II.—*Blood Counts*

	Dates							
	5/5/37	7/5/37	11/5/37	14/5/37	20/5/37	25/5/37	26/5/37*	
Haemoglobin ..	90						82	per cent.
Leucocytes ..	12,000	9,800	8,200	9,700	7,800	1,800	2,300	„c.mm.
Polymorphs ..	6,600	5,047	4,633	6,984	5,694	0	0	„ „
Lymphocytes ..	4,344	3,577	2,214	2,035	1,755	1,800	2,300	„ „
Monocytes ..	660	784	861	388	351	0	0	„ „
Eosinophils ..	396	392	410	194	0	0	0	„ „
Basophils ..	0	0	41	0	0	0	0	„ „
Myelocytes ..	0	0	41	49	0	0	0	„ „
Arneth Count I	32	32	41	59	58	0	0	„ cent.
Arneth Count II	45	44	41	34	34	0	0	„ „
Arneth Count III	21	24	17	7	8	0	0	„ „
Arneth Count IV	2	0	1	0	0	0	0	„ „
Arneth Count V	0	0	0	0	0	0	0	„ „
Lobes per 100 polymorphs ..	193	192	178	148	150	0	0	„ „
Classes I+II ..	5,082	3,800	3,772	6,510	5,244	0	0	„c.mm.
Degenerative index† ..	0	0	0	0	2	–	–	„ cent.

* 26/5/37, post-mortem counts, three hours after death: red cells, 4,290,000; reticulocytes, 75,000; platelets, 141,000 per c.mm.

† Percentage of polymorphs showing toxic granulation.

All counts were made about the same time each morning.

Skin rashes occurred on April 14 and May 12, 21, and 24. Traces only of albumin were found in the urine on four occasions.

Post-mortem Findings

The post-mortem examination was made three hours after death. An inflammatory lesion covered with greyish-white membranous exudate was present in the pharynx, showing a patchy distribution over the sides and posterior surface of the pharynx and posterior surface of the epiglottis. The membrane consisted of the necrosed superficial tissues infiltrated with masses of cocci. Collections of lymphocytes were present but no polymorphs. Bacteriological examination showed the predominating organisms to be haemolytic *Staphylococcus aureus* and *Streptococcus viridans*, and was negative for diphtheria.

The blood in the heart was not coagulated, so allowing counts to be made. A few minute nodules due to simple non-ulcerative endocarditis were present on the mitral valve and were presumably of rheumatic origin; no bacteria were observed in them.

The right kidney showed a moderate hydronephrosis due to an aberrant artery, but only slight damage to the renal structures was found microscopically. The liver (1,555 grammes), spleen (175 grammes), and other organs revealed nothing of note.

Bone Marrow.—The distribution of red marrow was normal, being present in vertebra, sternum, and ribs, while that in the right tibia and femur was fatty, only the head of the femur and upper part of the shaft showing some pink coloration. Microscopically there was a complete absence of all granular cells, both neutrophil and eosinophil, while cells of the lymphocyte series, mega-

karyocytes, and nucleated red cells were numerous in the red marrow. Spectroscopic examination of the blood for sulphaemoglobinaemia was negative. Death was considered to be due to agranulocytic angina with septicaemia.

Discussion

Between May 3 and 21 54 grammes of prontosil album were given. Agranulocytosis developed some time between May 20 and 25. A feature of the case was the failure of serial leucocyte counts to give warning of the impending disaster, the changes being merely those of a progressively active infection. An increased output of young polymorphs (Arneth classes I + II, Table II) was well maintained till May 20, after which a rapid failure in their production evidently occurred. The types of myeloid bone marrow found in cases of agranulocytosis include aplastic, normal, and hyperplastic varieties (Beck, 1933). The present case belongs definitely to the aplastic type.

Of the various drugs administered, chloral and the barbiturates do not contain the benzene ring. Barbiturates have been frequently used in association with amidopyrine in recorded cases, and an adjuvant effect has been suggested, but available evidence is against their being independently effective. Salicylates contain the benzene ring with no amino group; there is little evidence that they can cause agranulocytosis, and in any case none had been given within twenty-four days of the onset of the condition. Kracke (1932) produced experimental agranulocytosis in rabbits with benzene, but concluded that oxidation products were probably responsible. Kracke and Parker (1934) later recorded that there was constantly increasing evidence that the condition was caused for the most part by easily oxidizable benzene-ring drugs.

Marshall, Emerson, and Cutting (1937) have investigated the excretion of sulphanilamide, and found that 100 per cent. of the daily dose could frequently be recovered in the urine as free sulphanilamide and a conjugated form—para-acetylaminobenzene sulphonamide. They add, however, that it is possible under certain conditions that a small amount is excreted in some other form or eliminated through some other channel than the kidneys. They showed in a case with impaired renal function that there was delay in excretion of the drug.

Cases of agranulocytosis have been recorded in which no drugs appear to have been taken and no obvious cause could be found, so that a definite conclusion in regard to the causation in the present case is not justified.

Summary

1. A case of fatal agranulocytic angina is recorded.

2. The bone marrow showed complete myeloid aplasia.

3. The only benzene-ring drug administered within twenty-four days of the development of agranulocytosis was sulphanilamide.

4. The agranulocytosis appeared to be either of the idiopathic type of unknown aetiology or to be due to sulphanilamide.

I am indebted to Dr. J. K. Rennie for the clinical material and data, and to Dr. J. A. Price and Mr. G. C. Holliday for assistance with some of the investigations.

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FOOD POISONING—ITS EPIDEMIOLOGY AND BACTERIOLOGY*

BY

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The term "food poisoning" is conventionally restricted to an acute gastro-enteritis caused by the ingestion of food or drink which either contains living bacteria capable of setting up an acute inflammatory condition of the alimentary tract or contains toxic substances produced by various types of bacteria that have an irritant effect upon the gastro-intestinal mucosa. This definition does not include "botulism," a disease which presents no symptoms of gastro-enteritis, but which is nevertheless a form of food poisoning caused by the absorption from the alimentary canal of a specific toxin elaborated under suitable conditions by the *Clostridium botulinum*.

During recent years the number of organisms proved to be capable of giving rise to food poisoning in one or other of its forms has greatly increased. Since the isolation of *B. enteritidis* by Gaertner in 1888—followed ten years later by the isolation of *B. aertrycke*, or *Bact. typhi murium* as this organism is now called, by Durham in England and de Nobele in Belgium, both organisms being undoubtedly responsible for cases of food poisoning—at least twenty-seven members of the Salmonella group have been identified with actual outbreaks of food poisoning in human beings. It is of importance to note, too, that some pathogenic intestinal organisms normally giving rise to one particular type of disease may on occasion cause another kind of illness—for example, the dysentery organisms may produce the typical symptoms of food poisoning.

It is difficult to assess with any degree of accuracy the prevalence of food poisoning. Many solitary cases must undoubtedly go undetected, but with increased laboratory facilities such cases are being detected with greater frequency. In some form or other cases occur fairly often in this country—for example, fifty-eight outbreaks were recorded at the Ministry of Health in 1934, and of 137 outbreaks of suspected food poisoning in 1935 only twelve were excluded as not food poisoning. In America and Germany the incidence seems to be considerably higher.

Food poisoning may be conveniently discussed under three headings: (1) that due to the multiplication within the body of pathogenic bacteria present in food, and referred to as the "infection" type; (2) that due to the ingestion of certain substances formed as the result of bacterial multiplication in the food before ingestion—the "toxin" type; and (3) that due to the toxin of *Clostridium botulinum*—"botulism."

The "Infection" Type

Among the organisms responsible for the "infection" type members of the Salmonella group are the most common, but members of the dysentery group, more especially the Sonne bacillus and *B. dysenteriae* Flexner, must be included. In 1934 Salmonella infections were discovered in twenty-two instances, of which fourteen were, so far as could be ascertained, solitary cases, and during 1935 these were found on fifty-three occasions; twelve outbreaks during the latter year, however, were caused by dysentery bacteria, of which eight were due to the Sonne bacillus, three to *B. dysenteriae* Flexner, and

* Paper read at the Congress of the Royal Institute of Public Health and Institute of Hygiene, Margate, 1937.

one to the Newcastle–Manchester type of dysentery organisms. An outbreak of acute gastro-enteritis affecting about eighteen individuals who had partaken of cockles presumably contaminated with *Proteus vulgaris* is recorded by Dr. Allan Gray (1937).

I have included in the Salmonella group only those organisms which give rise to acute gastro-enteritis, as distinct from those causing the "enteric" type of disease. By some authorities *B. typhosus* as well as the paratyphoids are placed together in the Salmonella group; and from antigenic analysis this is quite justifiable. The "O" or somatic antigen of *B. typhosus* is exactly the same as the somatic antigen of *B. enteritidis* and its numerous varieties; *B. paratyphosus* B has the same somatic antigen as *B. aertrycke, stanley, derby, reading,* and so on. But in other respects the enteric group differ greatly from those I have included in my Salmonella group: the incubation period of the disease they produce is considerably longer, the symptomatology is different, the enteric group are not natural pathogens of animals, and transmission of the disease is confined ultimately to the human carrier. In fact, the whole problem of the prevention of enteric fever consists in stopping the various routes by which the bacteria may pass from the intestine of one human being to the mouth of another, whereas in the food-poisoning organisms there are additional factors to consider.

But seeing that all these bacteria are so closely related antigenically it is not surprising that some of them give rise on occasion to one type of disease and on occasion to another—for example, *Bact. cholerae suis,* var Kunzendorf, often known as the Western European type of *paratyphosus* C or *Bact. suipestifer,* usually gives rise to a continued fever of the enteric type, but infection may take the form of an acute gastro-enteritis; and, similarly, *Bact. typhi murium* or *B. aertrycke,* though generally causing an acute gastro-enteritis, does occasionally bring about a continued fever. Even varieties of the same type of organism may cause different symptoms—for example, there are eight varieties of *Bact. enteritidis,* most of them antigenically similar and differing from one another only in some of their fermentation reactions (the Stern glycerol reaction, Bitter's rhamnose fermentation test, and *d*-tartrate fermentation reaction). Some of these give rise to the enteric type of disease and others to acute gastro-enteritis. Some time ago I was able to isolate *Bact. senftenberg,* var. Newcastle, from the faeces of a patient who showed the typical symptoms of a paratyphoid infection. An extract from his case sheet on admission to hospital on July 10, 1935, reads: "In bed since the 4th inst., complained of severe frontal headache; patient appeared very ill, feverish; rash fairly well marked over the body, but brighter over the arms, wrists, and legs. Temperature 101.6°, pulse 120, respirations 26. History of constipation; complains of pains and stiffness over the arms, shoulder-joints, and legs." The patient's serum agglutinated Oxford Standards Salmonella group suspension only up to a dilution of 1 in 320, with no agglutination with *paratyphosus* A or *paratyphosus* B suspensions.

In the case of *Bact. thompson,* I have isolated this organism from the faeces of two patients in different parts of this county during the past twelve months; the cases were quite unrelated and both were fatal. Each showed the symptoms of *B. typhosus* infection, but no Widal examination was made. When I rang up the doctor in one case he was rather surprised at the result: the patient had died the previous day, and the doctor had just filled in the death certificate, recording the death as due to typhoid fever. It might be argued that his patient died of a typhoid infection and that *Bact. thompson* was accidentally found in the faeces. I cannot prove or disprove this, but the only really reliable proof of infection is the isolation of the organism from the patient, and, in the case referred to, *Bact. thompson* was obtained in large numbers on primary culture direct from the faeces by a method which has been tested out carefully and found capable of detecting typhoid organisms when these are relatively very very few.

The dysentery organisms, as I have mentioned, occasionally behave in a similar manner; instead of the usual dysentery symptoms the patient may show the symptoms of acute gastro-enteritis. This, of course, is mainly a problem which concerns the laboratory; it is the duty of the laboratory to identify any pathogenic organism that may be present, and not confine its search to members of one particular group. But it is as well to remember that all cases of continued fever need not essentially be due to a typhoid or paratyphoid infection. And as dysentery organisms may occasionally cause food-poisoning symptoms, these must be kept in mind; they are somewhat delicate organisms, rather apt to die off very quickly outside the human body, so that infected or suspected material should be examined as early as it is available if it is hoped to isolate them. I have found that the method of adding two parts of 30 per cent. glycerol in 0.6 per cent. saline to 1 part of faeces as soon as possible after they are passed helps to keep the dysentery bacteria alive when the services of a laboratory are not immediately available. As far as I know there is no good selective medium invented yet for the isolation of dysentery organisms, but my experience is that the methylene blue–eosin agar used in the examination of acid and gas producers in water is slightly superior to MacConkey's medium.

As has been indicated, the Salmonella group consists of a large number of organisms, and new types are continually being added to the list, but the commonest type in food-poisoning outbreaks is undoubtedly *Bact. typhi murium* (*B. aertrycke*). During the years 1923–33 the Ministry of Health found this organism in 110 out of 186 food-poisoning outbreaks, and in 1934 in twenty-two out of forty-three; of the forty-six outbreaks that occurred in 1935 in which the causative organisms were actually isolated twenty-nine were due to *Bact. typhi murium.* The next most frequently isolated organism is *Bact. enteritidis.* These facts are rather significant, and are of some importance when the cause of outbreaks comes under investigation.

The "Toxin" Type

In spite of exhaustive investigations into many outbreaks it has not been possible to isolate any member of the food-poisoning or dysentery groups. These outbreaks were formerly designated as ptomaine poisoning, caused by the presence in the ingested foods of products of protein decomposition. These so-called ptomaine poisons or toxic amines, however, are not produced until the food reaches an advanced stage of decomposition, and further examination showed them to be relatively non-toxic to most laboratory animals except when given in excessively large doses, far larger than are ever likely to be ingested under natural conditions. Barber in 1914 described a very interesting outbreak where a certain strain of *Staphylococcus albus* was isolated from the milk of a cow. The milk produced no ill effects if consumed immediately after its withdrawal from the udder, but on

being allowed to stand a few hours at room temperature it invariably produced the characteristic symptoms of acute gastro-enteritis. That these results were not due to any other component of the milk was proved by the fact that the same symptoms were produced in human volunteers who drank pure milk into which this particular strain of staphylococcus was introduced. The organism itself obviously did not cause the symptoms: it was necessary to allow it time—two or three hours at 28° to 30° C.—in which to produce something that would give rise to symptoms. Dr. Savage (1920) suggested later that many of the outbreaks from which food-poisoning organisms could not be isolated might be due to the ingestion, not of food-poisoning organisms themselves, but of toxic products elaborated by them, and recent work in America and in this country has furnished evidence strongly supporting this view.

The experimental evidence that staphylococcal toxin does produce gastric irritation has been provided mainly by Professor Jordan of Chicago, and consists in the production of the characteristic sickness and vomiting in human volunteers and in monkeys on the administration of quite small doses by the mouth. Savage and White (1925) paid considerable attention to this aspect of food poisoning in their extensive and valuable investigations, and while the implication of the Salmonella group in some of these "toxin" outbreaks was difficult to prove, it was nevertheless highly probable that these were the responsible organisms. Twenty-six of these "toxin" outbreaks are recorded in the Annual Report of the Chief Medical Officer for the year 1934 and forty-seven the following year.

Very little has as yet been discovered as to the nature of these toxic substances. It is not known whether they are specific bodies elaborated by the bacteria or whether they represent the breakdown products of the dead organisms. They appear to be relatively non-toxic when fed to most laboratory animals, though young rhesus monkeys are usually affected after a fairly large dose. On the whole, they are weakly antitoxinogenic. Savage and White were able to show that when toxic canned foods were emulsified and injected into animals, feebly agglutinating sera for Salmonella organisms were sometimes obtained, but, in spite of the intense symptoms these toxic foods produced, the sera of sufferers seldom revealed any appreciable developments of agglutinins. In their "Study of 100 Recent Outbreaks of Food Poisoning," they recorded that in nine of the outbreaks, while no specific organisms were isolated, the presence of Salmonella toxins in the suspected food was highly probable. Samples of blood from some of the patients showed a slight agglutination with members of the Salmonella group, usually up to a dilution of 1 in 20 or 1 in 25. Injections of watery extracts of the food into animals intraperitoneally sometimes resulted in the development of agglutinins; but here again positive agglutination was obtained only up to dilutions of about 1 in 40. The evidence, as may be gathered, is not too conclusive, but taken in conjunction with other factors it lends great support to the "toxin" theory.

Bacteria capable of giving rise to these toxic substances are not by any means confined to members of the Salmonella group; many are regarded as non-pathogenic under ordinary conditions, but with certain conditions of growth they are capable of producing these highly irritant toxic substances. *Staphylococcus aureus* is the organism most frequently associated with these "toxin" outbreaks; others are *Staphylococcus albus, B. coli, Proteus vulgaris, Proteus morgani, Streptococcus viridans,* and a micrococcus found in milk. Not all members of any particular group have the power to produce these substances—for instance, only a very few staphylococcal strains possess this particular property, and the toxin is quite distinct from the haemolytic or necrotic toxins of the staphylococcus. Up to the present we have no means, other than the direct test on human volunteers or susceptible monkeys, of determining which strains are toxinogenic and which are not. It is presumed that the bacteria multiply and elaborate these substances in the food prior to its consumption, the subsequent cooking to which the food is subjected destroying the organisms without materially affecting their toxic products. A consideration of the ubiquity of some of these bacteria, the variation in the potency of the toxins they produce, our inability at present to distinguish the poisonous from the non-poisonous strains except by test on the human subject, and our comparative ignorance of the suitable conditions for the production of toxins, makes this type of food poisoning not only difficult to investigate but also difficult to control.

The seasonal variation of food poisoning of the "infection" type is in all probability only a consequence of rise of atmospheric temperature favouring bacterial growth in infected foods, and thus encouraging the ingestion of large doses of the specific bacteria that seems to be necessary to set up the acute symptoms. The highest incidence occurs between the months of May and October, with the peak incidence in July. In the "toxin" type, too, more outbreaks tend to occur during the summer months, but these are far more evenly distributed throughout the year.

In both types the morbidity rate is high: 75 to 100 per cent. of the persons who eat the affected food are attacked, but the mortality rate is very low. The symptoms produced by the "toxin" type are similar to those of the "infection" type: the incubation period is usually shorter—half an hour to four hours, as compared with six to twenty-four hours in the latter. While they last the symptoms in the "toxin" type are more marked, but recovery is usually more rapid and the patient is well again in two or three days.

Vehicles of Infection

In Salmonella infections made-up meat dishes are the commonest vehicles of infection. In twenty-eight cases in which the causative organisms were isolated by Savage and White (1925) ten were caused by made-up meat dishes. Fresh meat, manipulated meat, milk, and milk products, especially ice-cream, are others; fish and fresh eggs, particularly ducks' eggs, have often been found to be responsible. The food associated with the "toxin" type is usually some form of canned meat or potted meat or fish, and milk products, more especially cakes and éclairs filled with cream or custard. "Corned beef" outbreaks are much less frequently met with now than formerly, the more efficient modern methods employed in the canning of this foodstuff being probably responsible for the almost complete disappearance of this one-time common source of "toxin" outbreaks. Obviously any food may act as a vehicle of infection, as, for instance, a dried milk powder from which *Bact. typhi murium* was isolated by Jones and Wright (1936).

Those familiar with the investigation of food-poisoning outbreaks will know that for various reasons it is not always an easy matter to isolate the offending organism or to prove the presence of a specific toxin; much less easy is it to trace the mode of infection of the food by

the organism. The common ways in which food may be infected are: (1) Infected animals may be used for food—for example, meat (beef and pork), ducks or their eggs. (2) Infected animals may excrete specific organisms to contaminate food—for example, rats and mice, bovines. (3) Human carriers may contaminate the food by handling.

There seems to be little doubt that animals, especially cattle and pigs, may suffer from diseases caused by the Salmonella organisms. The disease in animals is usually of an acute and often fatal type, but the carcass need not essentially be noticeably unhealthy. A case is reported in the annual report of the Ministry of Health, 1935, in which beef from the carcass of an animal almost certainly suffering from a Salmonella septicaemia was responsible for 174 cases, with eight deaths, in Lancashire. The flesh appeared normal, but *Bact. typhi murium* was isolated from all the parts of it examined. In most cases of food poisoning due to the consumption of meat from an infected animal it has been found that the animal has been "emergency slaughtered." Meat from such a source must be eaten in an uncooked or imperfectly cooked condition, as sausages or pressed beef, to cause ill effects. In this country such occurrences must be extremely rare, but in Germany, where more raw meat is eaten, they afford a frequent source of human infection. Within recent years ducks' eggs have on many occasions been responsible for food poisoning: one such outbreak investigated by Dr. Scott of the Ministry occurred in this county in 1933, and an outbreak at Preston in 1934 involved 250 persons who had consumed ice-cream in the preparation of which, it was alleged, the mixture containing ducks' eggs was insufficiently cooked. Infection of ducks by *Bact. typhi murium* and *Bact. enteritidis* is not uncommon; hens are less frequently infected with these organisms.

The contamination of foodstuffs by the excreta of infected animals is probably of more frequent occurrence than is generally supposed. McAllan and Howie (1931) record an outbreak of Salmonella infection in which milk was contaminated from the faeces of an infected cow; but rats and mice, in my opinion, are commoner offenders in this respect. Our rodent population is a fairly large one, and both rats and mice suffer naturally from infection with *Bact. typhi murium* and *Bact. enteritidis*, and may excrete the organisms in their urine and faeces for considerable periods. Food exposed in insanitary premises invariably attract these animals, and infection is thereby easily transferred to human beings. In the case of the infected dried milk referred to previously, the food used for a child who subsequently died of an *aertrycke* infection was kept in an uncovered container. Mouse faeces were found in the food, and from these pellets as well as from the powder *Bact. typhi murium* was isolated. From the intestines of mice caught in the house within the next few days the same organism was cultured. In an investigation commenced some time ago about 250 rats and mice were examined, and cultures of *Bact. typhi murium* or *Bact. enteritidis* were obtained in from 10 to 12 per cent. of them, in some cases from the intestine, in others from the intestine and spleen.

The Carrier

With regard to the human carrier as a source of infection, it is generally considered that he plays but an insignificant part. Authenticated cases are on record, but the proved cases are relatively few. The probability of the intermittent carrier state makes it still more difficult to ascertain the true condition of affairs. The methods employed in the examination for carriers need to be more exacting than in the examination of the frank acute case. Agglutination tests are of little help; they may narrow the field of "suspects," but even in cases of known infection, proved by the actual isolation of the organism, the agglutinin response may be very poor, and agglutinins may be present to some extent in the blood of normal persons. As I have said, the isolation of the specific organism is the only proof of infection, and obviously in the case of a chronic carrier who is excreting but few pathogenic bacteria as compared with non-pathogenic ones, it is only to be expected that such carriers are easily missed unless special methods are employed. The frequency with which I have accidentally found Salmonella organisms suggests that carriers may be more common than is generally supposed. Two of these cases were particularly interesting. One was that of a missionary who had been invalided home from India with typhoid fever. He walked into the laboratory one morning with a specimen of faeces; he wished to know whether or not he was a typhoid carrier. After a few formalities the specimen was accepted. No *B. typhosus* was found in the specimen but a large number of *Bact. typhi murium*, and the same results were obtained from another specimen taken a week or so later. The other case concerned a possible typhoid carrier in a family of six persons, one of whom had developed typhoid fever, the organisms having been found in her faeces. No typhoid organisms were recovered from any of the other five persons, but a good growth of *B. aertrycke* was obtained from the faeces of the father, who was quite fit and apparently healthy and could not remember ever having been ill.

And here I must digress a little again to mention the methods employed for the isolation of these pathogenic organisms: the matter has an important bearing on the problem of human carriers and also on the prevalence of these food-poisoning organisms among animals. In 1936 I published a paper in which a comparison is given of results obtained with special selective media and with MacConkey's medium—the medium still used in many laboratories. I shall not go into the details of the different media; it will be sufficient to say that in a very careful investigation of a large number of specimens, both faeces and urines, 34.7 per cent. of the specimens were positive for organisms of the typhoid food-poisoning group on the particular selective media used as compared with 14.5 per cent. positive with MacConkey's medium. At the time when these special media were being tested out many of the cases to which I have referred came into the laboratory for investigation, and all specimens were examined on both media. In the fatal case of *B. aertrycke* infection due to the contamination of the dried milk by mouse faeces, *B. aertrycke* was isolated on both media from the faeces of the patient and from post-mortem material, but only on the selective media was the organism recovered from the infected food and from the mice themselves. Similarly for the two *aertrycke* carriers and the *senftenberg*, var. Newcastle, case: in all these the pathogenic organism could only be recovered on the selective media. I would mention also that convalescents became negative on MacConkey's medium very much earlier than they did when the faeces and urines were examined on these special media. I had occasion some time ago to investigate a small outbreak of dysentery in a children's hospital. Among the specimens examined were eleven mice caught on the premises. No food-poisoning or dysentery organisms were isolated from

these, but Morgan's bacillus No. 1 was recovered from the intestine of two mice. The part these bacteria play in summer diarrhoea of infants is not yet entirely clear, but there is no doubt that they are the organisms most frequently isolated from these cases. It thus appears to me that the dissemination of pathogenic bacteria by human convalescents and carriers and by rodents can very easily occur, and unless special methods for the examination of these are employed many sources of infection are bound to be missed.

The mode of infection of food by organisms giving rise to the "toxin" type of food poisoning is not so difficult to determine. As has been indicated, many organisms of different types have now been identified with outbreaks; most of them are common organisms found almost anywhere, but their presence in various foodstuffs has hitherto been regarded as of no significance. In the light of our present knowledge, however, in cases where these occur in any suspected food and in which no organisms of the Salmonella group can be isolated it is as well to bear in mind their possible association with the outbreak.

Botulism

Botulism is a disease which is fortunately rare in this country, and while very few of us have had the opportunity of investigating an outbreak of this disease, it is necessary to keep in mind its existence. My experience is confined to the examination of nut-meat brawn at the time of the occurrence of the few cases in London in 1935; neither *Cl. botulinum* nor its toxin was detected in the specimens examined.

The causative organism is a normal inhabitant of the surface layers of the soil, from which it may easily gain access to various types of food. There is no evidence that it is a normal intestinal inhabitant of man or of animals. *Cl. botulinum* is an anaerobic sporing organism which is incapable of growth in the animal body and giving rise to infection, but under suitable conditions it produces a very potent toxin. We do not know all the factors which determine the growth and toxin production of the organism. The spores are fairly resistant to heat and may withstand boiling for from half an hour to twenty-two hours: the potted-duck paste responsible for the Loch Maree cases in 1922 had been heated on three occasions, at one stage to a temperature of 115° C. for two hours. Media which are acid do not encourage growth, so that canned acid fruits are not likely to give rise to botulism. Vegetables and other products that are not acid and are preserved in air-tight containers which are not or cannot be adequately sterilized by heat —for example, glass containers—are possible sources of danger. The toxin is destroyed by such heat as is ordinarily applied in cooking, so that cooked food eaten within a short time of heating, and also fresh foods, are safe.

In Europe most of the cases of botulism have been caused by preserved meat or potted paste, whilst in America the contaminated foods have been mainly canned fruits and vegetables. Investigations into the different outbreaks have indicated that home-canned food is decidedly more dangerous than commercially prepared food.

Food infected with organisms of the Salmonella group usually appears quite normal: there need be no great change in colour and no detectable change in smell or taste. But in the case of botulism the preserved foods are frequently noticeably spoiled, the cans are usually "blown," the food shows evidence of decomposition in varying degree, and it has a more or less rancid odour.

The methods of investigating outbreaks of food poisoning are not within the scope of this paper, and are fully described in a Memorandum by the Ministry of Health (Memo 188/Med. 1935).

Commentary

From what has been said it is obvious that there is still much to learn about bacterial food poisoning in human beings. The paths of infection of food, the part played by animals in transmitting infection, the conditions under which some normally harmless bacteria as well as natural pathogens are able to elaborate substances highly irritant to the human intestine, and the nature of these toxic substances are matters on which our knowledge is still very deficient and imperfect. The problems met with in investigating even the smaller outbreaks are often numerous and complicated, and entail an enormous amount of work that can only be successfully attempted in a well-equipped laboratory. Fortunately the assistance of the Ministry's laboratory is available for the examination by any local authority of specimens from suspected food poisoning.

Comparatively few outbreaks are investigated completely: this is inevitable in some cases, but an outbreak ended is not a problem solved. Very rarely are negative findings published: this is unfortunate, because a clearer understanding of the factors involved in bacterial food poisoning will more easily be acquired only by a comparison and correlation of all findings, whether these be positive or negative, in the different types of outbreaks.

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A conference of the Tuberculosis Association will be held in Paris from October 14 to 17 under the presidency of the Ministre de la Santé Publique et de l'Education Physique. The party will leave Victoria Station, London, by the 9 a.m. train on Thursday, October 14, and will arrive in Paris at 3.50 p.m. At 5 p.m. there will be a reception at the Hotel Lutécia by the Comité National de Defense contre la Tuberculose, followed by a dinner under the presidency of the Minister of Public Health. On October 15 visits will be paid to the Hospital Laennec, the Dispensary Léon Bourgeois, the Pasteur Institute, and to the dispensary, crèche, and open-air school at Suresnes. Luncheon will be given by the Municipality of Suresnes. On October 16 there will be visits to the offices of the Assurances Sociales and to l'École de Puériculture, and luncheon will be arranged by the Office of Public Health of the Seine at the Sanatorium of Saint Martin du Tertre. The party will leave Paris at 7.55 p.m., and will arrive in London on the morning of Sunday, October 17. Members of the Tuberculosis Association who wish to attend the conference are requested to inform the honorary secretary, Dr. Frederick Heaf, at 26, Portland Place, W.1, by July 31. All tickets will be issued by Thos. Cook and Son, Ltd., Berkeley Street, W.1, to whom remittances should be made payable and sent direct. Correspondence with Messrs. Cook should be marked B.H.43. Further information can be obtained from the honorary secretary.

SODIUM CHLORIDE CONTENT OF CEREBRO-SPINAL FLUID IN TUBERCULOUS MENINGITIS

BY

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The normal sodium chloride content of the cerebro-spinal fluid is usually taken as 700 to 750 mg. per 100 c.cm., and diminution is practically a constant feature of all inflammatory conditions of the cerebro-spinal nervous system. Although the extent of this diminution is variable, all observers seem to be agreed that it is greatest in tuberculous meningitis. Nobécourt and Voisin (1903) directed attention to this low chloride content in tuberculous meningitis, and Mestrezat (1912) emphasized its diagnostic significance. More recently Fowweather (1930), studying cases of tuberculous meningitis, showed that there was a rapid fall in the cerebro-spinal fluid chlorides concomitant with the progress of the illness. Very divergent figures have been recorded by various investigators, as may be seen from the following table:

	Mg. per 100 c.cm.
Mestrezat (1912)	500–600
Fowweather (1930)	590 and over
Eskuchen (1924)	500–600
Fremont-Smith (1925)	Under 600
Wilcox and Lyttle (1925)	513–690
Neale and Esslemont (1928)	489–763
Benoliel (1925)	765–936
Riser (1929)	500–675
Lattes (1929)	570–640
Fontecilla and Sépulveda (1921)	580
Greenfield and Carmichael (1926)	500–600
Nowicka and Mestrezat (1924)	590
A. Prunell (1935)	504–678

Such a wide variation in figures seems to call for some explanation or reinvestigation.

In the course of routine work in this department 700 mg. per 100 c.cm. was obtained in one meningitic fluid containing tubercle bacilli, but on investigation this high figure was found to be due to the nurse having sterilized the lumbar puncture needle by boiling in saline. The examination was repeated on the following day with fluid withdrawn by a needle which had been sterilized in boiling distilled water, and the sodium chloride content was found to be only 510 mg. per 100 c.cm. On another occasion a high chloride figure resulted from the lumbar puncture needle having been sterilized in the autoclave, the water of which had not been changed for a long time. In other cases the cotton-wool test tube plugs and filter papers used in the test have been found responsible for a fallacious high chloride figure.

In estimating the sodium chloride content of the cerebro-spinal fluid the greatest care is essential to ensure that there is absolutely no possibility of the slightest trace of extraneous saline reaching the fluid from any source whatsoever—needle, test tube, etc., or apparatus used in the test.

The Investigation

With these facts in mind, and paying special attention to technique, the chloride content of the cerebro-spinal fluid of 126 patients was investigated. Of these, eighty-four suffered from tuberculous meningitis, all excepting two showing tubercle bacilli in the fluid, and forty-two were non-tuberculous cases. These latter served as controls and were made up of: (*a*) twenty-six cases of non-tuberculous meningitis—namely, meningococcal meningitis (eleven cases), pneumococcal meningitis (six cases), streptococcal meningitis (three cases), aseptic meningitis (one case), syphilitic meningitis (one case), influenzal meningitis (four cases); (*b*) ten cases of non-tuberculous lesions of the nervous system other than meningitis—namely, poliomyelitis (two cases), polio-encephalitis (two cases), juvenile dementia paralytica (one case), mental defective (post-meningitic) (one case), infantile convulsions (one case), epilepsy (one case), cerebral softening (one case), paraplegia (one case); (*c*) six normal healthy individuals.

Results

NON-TUBERCULOUS CONTROL FLUIDS—CHLORIDE CONTENT

The fluids from the six normal healthy individuals gave the following figures (mg. per 100 c.cm.): 700, 720, 714, 740, 700—that is, an average sodium chloride content of 715.66 mg. (Four showed no cells, one showed 3 lymphocytes per c.mm., and another 2 lymphocytes.)

The fluids from the ten cases of non-tuberculous lesions of the nervous system—other than meningitis—gave the following figures (mg. per 100 c.cm.): 620, 670, 600, 650, 620, 650, 600, 640, 680, 600—that is, an average sodium chloride content of 633 mg. (The cell content varied from 5 to 920 per c.mm., and 100 per cent. lymphocytes were present in all cases except two—namely, the two cases of polio-encephalitis, which showed 80 per cent. and 85 per cent. lymphocytes.)

The fluids from the twenty-six non-tuberculous meningitis cases gave the following figures (mg. per 100 c.cm.): 640, 670, 640, 644, 620, 600, 600, 680, 640, 650, 640, 690, 640, 600, 640, 600, 640, 620, 660, 620, 620, 640, 620, 580, 660, 660—that is, an average sodium chloride content of 632.84 mg.

The case of syphilitic meningitis showed 33 cells per c.mm. (100 per cent. lymphocytes), and the case of aseptic meningitis 2,450 cells per c.mm., 80 per cent. being lymphocytes. In all the others polymorphs predominated, the average percentage being 87.4. The lowest percentage of polymorphs in any case was 60; the highest was 98. The total cell count varied between 54 and 6,000 per c.mm.

TUBERCULOUS FLUIDS—CHLORIDE CONTENT

Of the eighty-four cases of tuberculous meningitis only two had a chloride content exceeding 550 mg. per 100 c.cm. The latter were the two cases which failed to show tubercle bacilli in the fluid as obtained by lumbar puncture, and they call for special comment. One was that of a man aged 45, the other that of a boy aged 11. Both patients suffered from miliary tuberculosis, particularly in the lungs, and eventually developed tuberculous meningitis and died. The findings were confirmed post mortem, and it is of special interest to note that in both cases thickening of the meninges at the base of the brain had given rise to internal hydrocephalus and there was no evidence of extension to the spinal meninges. The complete examination of their fluids were as follows:

Case 1 (man aged 45).—The fluid, bright and clear and of light amber colour, was examined two days before death. The cell count showed 3 per c.mm., all lymphocytes, and the globulin was ++. The sugar content was 85 mg., the protein 200 mg., and the chlorides 640 mg. per 100 c.cm. No organisms seen in stained films.

Case 2 (boy aged 11).—There were two examinations. In the first, on October 10, 1935, the fluid was bright and clear, and light amber in colour. The cell count gave 96 per c.mm., 65 per cent. being lymphocytes. There was no globulin. The sugar content was 45 mg. per 100 c.cm., the proteins 56 mg., and the chlorides 620 mg. A stained film showed no

organisms. The second examination, on October 19, revealed no change in the appearance of the cerebro-spinal fluid, but the cells had fallen to 22 per c.mm., 90 per cent. being lymphocytes. There was no globulin. The sugar content was 40 mg., the proteins 62 mg., and the chlorides 600 mg. per 100 c.cm.. No organisms were observed in a stained film The patient died on October 24.

Chemical examination of the cerebro-spinal fluids containing tubercle bacilli in the eighty-two cases of tuberculous meningitis revealed a chloride content averaging 510.24 mg. per 100 c.cm. The highest chloride content in any field was 550 mg. and the lowest 420 mg. per 100 c.cm. The cell content varied within wide limits—from 20 per c.mm. (100 per cent. lymphocytes) in a bright clear fluid free from clot to 1,952 per c.mm. (96 per cent. lymphocytes) in a cloudy fluid showing a clot of fibrin.

Comments

A differential count of the cerebro-spinal fluid occupies about fifteen minutes and has a certain diagnostic value. In tuberculous meningitis lymphocytes predominate; the lowest percentage in any fluid of the present series (eighty-four cases) was 58, and the average 92. But a high percentage of lymphocytes may be found also in syphilitic meningitis, aseptic meningitis, and a number of lesions of the nervous system other than meningitis, and so is not pathognomonic. In all other forms of meningitis, however, polymorphs greatly predominate; in the twenty-six cases referred to above the lowest percentage of polymorphs was 60 and the highest 98, and the average percentage was 87.4.

Microscopical examination of the centrifuged deposit from a fluid with a chloride content not exceeding 550 mg. per 100 c.cm., if sufficiently prolonged, will always reveal the presence of tubercle bacilli. Only about 2 per cent. of cases of tuberculous meningitis may have a high chloride content (over 600 mg. per 100 c.cm.), and these will fail to show organisms even after two and a quarter hours' search. The finding of tubercle bacilli in the cerebro-spinal fluid of any case of meningitis is of course pathognomonic, but the time necessary for success is often very long, and so a negative result is frequently reported.

Centrifugalization of the fluid and making and staining a film occupy fifteen to twenty-five minutes or more, and the subsequent microscopical examination may entail a prolonged search. In the present series of eighty-four cases the organism was demonstrated in eighty-two (approximately 98 per cent.)—a high proportion of positives—but the time expended on the microscopical examination varied from two minutes to two and a quarter hours. As a rule twenty-five to thirty minutes' searching was necessary, but a longer time was often required, and in at least five cases the search had to be prolonged to two and a quarter hours. Few workers can afford sufficient time for success.

The estimation of the sodium chloride content of the cerebro-spinal fluid takes only fifteen minutes. In eighty-two of the eighty-four cases investigated—that is, approximately 98 per cent.—the sodium chloride content was found greatly reduced, averaging 510.24 mg. per 100 c.cm. The lowest and highest limits were 420 mg. and 550 mg. respectively. In none of the forty-two controls did the sodium chloride content fall below 580 mg. per 100 c.cm., the vast majority having over 600 mg. Technique must be accurate, however, and all precautions must be taken to avoid contamination with extraneous chlorides. With this proviso it may be said that a sodium chloride content of 550 mg. per 100 c.cm. and under is found only in tuberculous meningitis, and is practically pathognomonic of the disease.

Method of Estimating the Sodium Chloride Content

The method adopted in estimating the sodium chloride content of the cerebro-spinal fluid is a modification of that described by Whitehorn (1921). The following is the apparatus required, all of which must be chemically clean:

Two 5 c.cm. microburettes calibrated in 0.02 c.cm.; Grade B, N.P.L.
One 10 c.cm. bulb pipette; Grade B, N.P.L.
Two 2 c.cm. bulb pipettes; Grade B, N.P.L.
Two 1 c.cm. bulb pipettes; Grade B, N.P.L.
One 10 c.cm. graduated pipette; Grade B, N.P.L.
One 50 c.cm. conical flask (pyrex).
One 5 c.cm. measuring cylinder.
One glass funnel, ribbed, 2 inches diameter.
Two test tubes.
One box Whatman's filter papers No. 1, 11 cm. diameter.

The reagents necessary are:

Powdered iron alum, chlorine-free.
Concentrated nitric acid, chlorine-free.
2/3 normal sulphuric acid.
10 per cent. aqueous solution of sodium tungstate.
Distilled water prepared in a pyrex all-glass still.
Standard solution of sodium chloride: 1 c.cm. = 2 mg. NaCl.
Standard solution of silver nitrate: 1 c.cm. = 2 mg. NaCl.
Standard solution of potassium thiocyanate: 1 c.cm. = 2 mg. NaCl.

These three standard solutions are prepared as follows.

Preparation and Standardization of Solutions

Standard Solution of Sodium Chloride.—A stock solution is first prepared by dissolving 10 grammes pure dry sodium chloride in 500 c.cm. of distilled water. Its strength, therefore, is 1 c.cm. = 20 mg. sodium chloride. The standard solution is prepared, as required, by diluting the stock solution with distilled water ten times, so that 1 c.cm. = 2 mg. sodium chloride.

Standard Solution of Silver Nitrate.—Dissolve 5.81 grammes of pure silver nitrate in distilled water and make up the volume to 1,000 c.cm. (1 c.cm. = 2 mg. sodium chloride). Store in amber bottle.

Standard Solution of Potassium Thiocyanate.—Dissolve about 6 grammes of pure potassium thiocyanate in 1,000 c.cm. of distilled water, mix thoroughly, and standardize as follows:

Measure 10 c.cm. of distilled water into a 50 c.cm. flask and add 5 c.cm. of standard silver nitrate solution from a 5 c.cm. microburette and 3 c.cm. of concentrated nitric acid (chlorine-free). Shake, cool under water-tap, and allow to stand for two minutes. Then add about 0.3 gramme of powdered iron alum. Titrate with the potassium thiocyanate solution from a 5 c.cm. microburette until the last trace of silver has been precipitated. This is indicated by the development of a pink colour due to the formation of ferric thiocyanate. Adjust the concentration of the potassium thiocyanate solution until 5 c.cm. corresponds with 5 c.cm. of silver nitrate solution.

The standard solutions having thus been prepared the strength of the standard solution of silver nitrate, in the interests of accuracy, should now be checked as follows:

Measure 5 c.cm. of distilled water into a 50 c.cm. flask and add 5 c.cm. standard sodium chloride solution, 10 c.cm. standard silver nitrate solution, and 3 c.cm. concentrated nitric acid. Shake, cool under water-tap, allow to stand for two minutes, and then add about 0.3 gramme iron alum. (The 5 c.cm. sodium chloride will combine with the 5 c.cm. of silver nitrate and so leave 5 c.cm. of silver nitrate to be titrated.)

Titrate with the potassium thiocyanate standard solution until the definite pink colour first appears. This should require 5 c.cm. potassium thiocyanate if the strength of the silver nitrate solution is correct.

TECHNIQUE OF TEST

(All apparatus must be chemically clean.) The lumbar puncture needle must be sterilized in boiling distilled water, alcohol, or by dry heat. No saline or tap-water should be used. The test tube for collecting the cerebro-spinal fluid must be chemically clean, sterilized by dry heat, and closed with a sterile cork covered with tin-foil (not cotton-wool plug). At least 10 c.cm. of cerebro-spinal fluid is required. The following is the procedure:

(i) Observe appearance of fluid, then shake and pour about 1 c.cm. into a small test tube for estimation of white-cell content.

(ii) Centrifuge remainder for twenty minutes at high speed in a conically bottomed centrifuge tube.

(iii) Remove supernatant fluid—without interfering with any clot present—using a fine-pointed capillary pipette and rubber teat. The top end of the pipette should be guarded with a small plug of cotton-wool which has been previously washed in distilled water, dried, and sterilized. As much supernatant fluid as possible is transferred to a chemically cleaned sterile test tube.

(iv) All the deposit is then transferred by means of the capillary pipette to the centre of a microscope slide and, without having been spread, the drop is dried by gently heating. The conical part of the centrifuge tube is then washed with two or three drops of the supernatant fluid and the washing transferred to the dried drop on the slide. Without spreading, the slide is then dried for ten minutes in the 55° C. incubator, and in this way a highly concentrated film is obtained. Afterwards it is stained in the usual manner by Ziehl-Neelsen's method.

(v) Precipitate the proteins from the supernatant cerebro-spinal fluid obtained in (iii) above by Folin and Wu's method, as follows: Measure 16 c.cm. distilled water into a test tube and add 2 c.cm. of the cerebro-spinal fluid, 1 c.cm. sodium tungstate, and 1 c.cm. 2/3 normal sulphuric acid; mix gently, allow to stand for five minutes, then filter into another test tube, using a funnel and Whatman's No. 1 filter paper. Estimate the sodium chloride content of the filtrate as follows:

(vi) With 10 c.cm. bulb pipette transfer 10 c.cm. of the filtrate to a 50 c.cm. conical flask and add 5 c.cm. standard silver nitrate solution (using burette) and 3 c.cm. concentrated nitric acid.

Shake, cool under water-tap, allow to stand for two minutes. Add about 0.3 gramme iron alum, then titrate with standard potassium thiocyanate solution from 5 c.cm. burette until definite pink colour is obtained.

The formula upon which the calculation is made is:

(5 c.cm. minus volume of potassium thiocyanate used) $\times 200$ = No. of mg. sodium chloride in 100 c.cm. cerebro-spinal fluid.

Summary

1. Diminution of the sodium chloride content of the cerebro-spinal fluid—practically a constant feature of all inflammatory conditions of the cerebro-spinal nervous system—is greatest in tuberculous meningitis.

2. As different observers have given very divergent figures for this diminution a reinvestigation of the question has been undertaken and the results are here set out.

3. The chloride content of the cerebro-spinal fluid of 126 patients was investigated. Eighty-four suffered from tuberculous meningitis, and forty-two were non-tuberculous and served as controls. None of the controls showed a sodium chloride content below 580 mg. per 100 c.cm., the vast majority having over 600 mg.

4. A sodium chloride content of 550 mg. per 100 c.cm. and under was found only in tuberculous meningitis, and may be considered practically pathognomonic of this disease. Microscopical examination of such a fluid, if sufficiently prolonged, will always reveal tubercle bacilli.

5. Only about 2 per cent. of cases of tuberculous meningitis may show a high chloride content (over 600 mg. per 100 c.cm.), and these will fail to reveal organisms even after two and a quarters hours' search.

6. The technique of the test—a modification of that described by Whitehorn—is given in detail, and its performance occupies fifteen minutes. It is of the utmost importance to exclude any extraneous source of chloride contamination, and accurate technique is essential.

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The folowing medical promotions in and appointments to the Venerable Order of the Hospital of St. John of Jerusalem are announced in the *London Gazette* of June 22. As Knights: N. Corbet Fletcher, M.B., Lieut.-Colonel Sir James S. Elliott, M.D., G. Sprott, M.D.; as Commanders: Lieut.-Colonel H. Ross, C.I.E., O.B.E., M.B., F.R.C.S.I., A. B. Cardew, *M.C.*, M.B., F.R.C.S.Ed., N. McDougall, M.B., T. H. Goddard, M.B., Sir Henry L. Ferguson, C.M.G., M.D., E. Pratt, M.D., Lieut.-Colonel J. P. S. Ward, M.R.C.S., L.R.C.P., Major E. W. Herrington, T.D., L.R.C.P., M.R.C.S., E. McIntyre, M.R.C.S., L.R.C.P., Captain A. C. W. Knox, *M.C.*, M.B., C. E. Salt, M.B., Major J. R. Thomas, M.B., W. Young, M.D., Lieut.-Colonel W. R. Battye, D.S.O., M.B., F.R.C.S., Surgeon Rear-Admiral P. T. Nicholls, C.B., M.R.C.S., L.R.C.P.: as Officers: Major A. Tennyson-Smith, M.D., C. Gardiner-Hill, M.B., Colonel W. B. Purdon, *D.S.O.*, *O.B.E.*, R.A.M.C., M. H. Watt, C.B.E., M.D., K. H. Trebilcock, M.D., J. B. Thom, M.D., Colonel F. A. Maguire, C.M.G., D.S.O., V.D., M.D., P. Testa, M.D., L. H. Gill, L.R.C.P. and S., J. A. Durante, M.R.C.S., L.R.C.P., Captain S. B. Turner, M.R.C.S., L.R.C.P., Colonel P. H. Mitchiner, T.D., M.D., C. E. C. Wilson, M.B., S. W. Fisher, M.D.; as Serving Brothers: H. A. Madwar, L.R.C.P. and S., E. S. Toogood, M.R.C.S., L.R.C.P., Captain C. G. Kemp, *M.C.*, M.D., A. Juett, B.M., C. H. McComas, M.D., J. Mackenzie, M.D., S. Prior, M.B., R. R. Garrett, M.R.C.S., L.R.C.P., Captain L. E. Sutcliffe, M.B., Surgeon Captain R. L. Casolani, M.D., J. P. Prell, M.R.C.S., L.R.C.P., A. M. Robertson, M.B., T. Williams, M.R.C.S., L.R.C.P., A. J. Crawford, M.D., F.R.C.S., R. S. J. Fitzgerald, F.R.C.S.

EFFECT OF HEAT AND ULTRA-VIOLET RADIATION ON ISO-AGGLUTININS IN DRIED BLOOD STAINS

BY

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The primary object of the present study was to see to what extent adverse conditions would affect the grouping of bloods by means of dried stains kept in circumstances similar to those likely to be met with in ordinary medico-legal practice. For this we chose to deal with the iso-agglutinins as being more labile than the agglutinogens, and to expose the stains to dry heat and to ultra-violet radiation—these being factors likely to occur in practice, particularly in the Tropics—the influence of which on the stain might be important.

Method

Blood was collected from eighteen volunteers of both sexes and allowed to dry at room temperature on glass slides, on scraps of leather, and soaked up in ordinary plain surgical gauze. The material was kept in unsealed envelopes lying on the laboratory bench, conditions being thus pretty much what might obtain in the case of a stain met with in practical medico-legal work. The agglutinins of the stains were tested against cells of Type A, Type B, and two specimens of Type O, designated O1 and O2 respectively. The cells were collected in citrated saline, washed once, and suspended in 0.85 per cent. saline in a 3 per cent. suspension. The bulk of the tests were carried out on blood dried on slides, but no differences were detected in stains on leather or gauze. In each case a fragment of stain was detached and placed on a slide, a small quantity of dilute cell suspension added, and a cover-glass applied. After five minutes the cover was very gently agitated and the slide examined for agglutination, examination being again made at the end of a further five minutes. Brisk stirring is to be avoided, as it greatly encourages rouleau formation. The blood group of the donor had been determined at the time of collection of the blood stain by the usual slide method.

Results

All specimens were examined ten days after collection and without any further treatment. In each case the group was determined without difficulty and correctly, the worker reading the result being of course kept in ignorance of the already determined group. The results are tabulated in Table I.

One batch of six stains was heated to 64° C. for one hour in an electric drying oven and then submitted to grouping as before. Little, if any, diminution in agglutinin content was noticed, no difficulty being experienced in obtaining a correct group in each case at the first attempt.

Portions of all stains were then heated to 100° C. for one hour in the drying oven and typing done as before. The results are shown in Table III.

A further typing was carried out on a group of stains similarly treated six days after, the results of which experiment are listed in Table IV.

Difficulty was experienced in diagnosing the group of some of the stains, mainly in those cases where too brisk stirring had been employed. In all cases, so far as could be judged, the strength of the agglutinins was considerably diminished, and larger portions of the stains had to be taken to get agglutination.

Portions of seven stains (two from each of Groups A, B, and O, and one AB specimen) were placed in small glass staining blocks and exposed for one hour to ultra-violet light at fifteen inches from a Hanovia quartz analytical lamp. Care was taken to see that the portions of dried clot did not overlap and screen

TABLE I.—*Stains Untreated*

Group already Determined	No. of Specimen	Agglutination of Cells				Group Diagnosed
		A	B	O1	O2	
A	1	−	+	−	−	A
A	2	−	+	−	−	A
O	3	+	+	−	−	O
O	4	+	+	−	−	O
B	5	+	−	−	−	B
A	6	−	+	−	−	A
O	17	+	+	−	−	O
O	10	+	+	−	−	O
A	13	−	+	−	−	A
B	12	+	−	−	−	B
A	9	−	+	−	−	A
O	7	+	+	−	−	O
O	11	+	+	−	−	O
A	16	−	+	−	−	A
O	14	+	+	−	−	O
A	15	−	+	−	−	A
AB	18	−	−	−	−	AB
A	8	−	+	−	−	A

TABLE II.—*Stains Heated for One Hour at 64° C.*

Group already Determined	No. of Specimen	Agglutination of Cells				Group Diagnosed
		A	B	O1	O2	
A	1	−	+	−	−(R)	A
A	2	−	+	−	−(R)	A
O	3	+	+	−(R)	−(R)	O
O	4	+	+	−	−	O
B		+	−	−	−	B
A	6	−	+	−	−	A

(R) indicates rouleau formation

TABLE III.—*Stains Heated for One Hour at 100° C.*

Group already Determined	No. of Specimen	Agglutination of Cells				Group Diagnosed
		A	B	O1	O2	
O	3	+	+	−	−	O
O	11	+	+	−	−	O
O	10	+	+	−	−(R)	O
O	14	+(R)	+	−(R)	−	?O
O	17	+	+	−	−	O
A	6	−	+	−	−	A
A	13	−	−(R)	−	−	?AB
A	9	−	+	−	−	A
O	7	+	+	−	−(R)	O
AB	18	−(R)	−(R)	−	−	?AB
B	12	+(R)	−(R)	−	−	?B
A	8	−	+	−	−	A
A	15	−(R)	+	−	−	?A
A	16	−	−	−	−	AB
A	1	−(R)	+	−	−	?A
B	5	+	−	−	−	B
A	2	−(R)	+	−	−	?A
O	4	+	+	−	−	O

(R) indicates rouleau formation.

TABLE IV.—*Stains Heated for One Hour at 100° C.; Second Batch*

Group already Determined	No. of Specimens	Agglutination of Cells				Group Diagnosed
		A	B	O1	O2	
O	10	+	+	–	–	O
AB	18	–	–	–	–(R)	AB
O	7	+	–	–	–	B
A	16	–	+	–	–	A
A	8	–	+	–	–	A
A	15	–	+	–	–	A
O	4	+	+	–	–	O
A	13	–	–	–	–	AB
O	17	+	+	–	–	O
A	1	–	+	–	–(R)	A

(R) indicates roleau formation.

each other from the rays. The stains were afterwards grouped, and so far as could be observed the radiation produced no effect. A further experiment was therefore carried out. Portions of all stains were taken three weeks after bleeding and exposed in a similar fashion for three hours without apparent effect.

The effect of heat combined with ultra-violet light was investigated in a further group of six stains by exposing for one hour at fifteen inches from the quartz lamp stains which had previously been subjected to dry heat for one hour at 100° C. The results are contained in Table VI.

TABLE V.—*Stains Exposed Three Hours to Ultra-violet Light*

Group already Determined	No. of Specimens	Agglutination of Cells				Group Diagnosed
		A	B	O1	O2	
O	11	+	+	–	–	O
O	3	+	+	–	–	O
A	16	–	+	–	–	A
B	12	+	–	–	–	B
B	5	+	–	–	–	B
A	8	–	+	–	–	A
A	2	–	+	–	–	A
O	17	+	+	–	–	O
A	6	–	+	–	–	A
O	10	+	+	–	–	O
O	7	+	+	–	–	O
A	1	–	+	–	–	A
O	14	+	+	–	–	O
AB	18	–	–	–	–	AB
A	15	–	+	–	–	A
A	13	–	+	–	–	A
A	9	–	+	–	–	A
O	4	+	+	–	–	O

TABLE VI.—*Stains Heated One Hour at 100° C. and then Exposed One Hour to Ultra-violet Light*

Group already Determined	No. of Specimens	Agglutination of Cells				Group Diagnosed
		A	B	O1	O2	
O	10	+	+	–	–	O
AB	18	–	–	–	–	AB
O	3	+	+	–	–	O
A	1	–	+	–	–	A
A	2	?+	+	–	–	?O
O	7	+	+	–	–	O

It will be seen that in most cases radiation has produced no further effect on the agglutination except in Specimen 2, which shows a doubtful positive agglutination of A cells. The main thing to be noticed is the absence of any trouble from rouleau formation.

Discussion

It is evident that drying at room temperature and storage for ten days in ordinary conditions does not seriously affect the readiness with which stains can be grouped by their agglutinins. These also appear to resist dry heat for one hour at 64° C. without serious impairment, but a similar exposure to 100° C. does cause some loss of power. A further point is the apparent increase of the factors tending to regular rouleau formation. This may be apparent only, and due entirely to the extra concentration necessary to produce agglutination; but our feeling is that this is not the whole explanation, since we noticed the appearance of this phenomenon when the concentration of the stain was not greatly increased. It is curious also that subsequent irradiation seems to diminish rouleau formation almost to vanishing-point. To investigate these facts further is not possible by the relatively crude methods we have used in the present series of experiments.

Conclusions

1. In agreement with generally accepted views no difficulty has been experienced in accurately diagnosing the group of a blood by the agglutinins present in a dried stain. Moreover, no difficulty ensues after exposing the stains to dry heat at 64° C.

2. Dry heat at 100° C. diminishes the strength of the agglutinin factor to a considerable extent, but does not usually abolish it completely; and this temperature seems to have some influence on the appearance of regular rouleau formation.

3. Ultra-violet radiation under the above-described conditions produces no obvious effect on the agglutinins. On the other hand, it does seem to have a certain influence in diminishing the formation of regular rouleaux.

4. It seems unlikely that ordinary blood stains would lose much of their agglutinin content if kept dry, even if they were exposed to strong sunlight and fairly high temperatures.

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The literature on the subject is so extensive that no attempt is made to cite it here.

So far our search has not shown any work on the agglutinin factors in dried stains on the lines of the present investigation. A good review of the general technique of blood grouping is to be found in a paper by J. C. Thomas (*Medico-Legal and Criminological Review*, 1937, 5, 54).

The National Institute of Industrial Psychology (Aldwych House, W.C.2) has just published the July–August issue of *The Human Factor*, price 2s. 6d. The first article, by Mr. H. D. Henderson, deals with the displacement of labour by machinery. Mr. T. G. Rose, recently appointed general director of the Institute, has written an article on clearer business vision, in which he stresses the need for good will in any industrial concern. Dr. O. A. Oeser of St. Andrews University deals with the complex social and psychological factors which may determine the choice of a career. The Institute is now developing an advisory service to educational authorities on the design and provision of equipment, and on methods of heating, lighting, and ventilation in schools. Results of various investigations are detailed in an article on school buildings.

Clinical Memoranda

Neuritic Symptoms following Injection of Gold Salts

Graham Lescher (1936) has recently described a case of polyneuritis following treatment by gold salts and has commented on the extreme rarity of this complication. In our experience, obtained mainly in the treatment of skin diseases, lupus erythematosus, psoriasis, lupus vulgaris, sarcoids, etc., over a number of years, neuritic complications have not been seen.

The common gold reactions—exfoliative dermatitis, eczematous reactions, stomatitis—cannot be foreseen in any individual case, but as Hartfall and Garland (1936) have indicated, are less likely to occur with small doses of gold. However, there is interest in the speculation that the neuritic type of reaction may be anticipated and be preventable.

CASE REPORT

Our patient was a lady of 57 years who complained of burning in the soles of the feet for a year. Several years ago she had had pain and swelling of the small joints of the hands. The skin of the feet, particularly at the pressure points, was red, hyperkeratotic, and showed numerous telangiectases. On the lower lip, spreading beyond the red margin, was a red defined area, finely scaling. The tip of the tongue was red and smooth. At the angles of the mouth there was some dry fissuring. On the right of the scalp was a bald patch with slight atrophy. The appearance of the lower lip and of the feet suggested the diagnosis of lupus erythematosus, and the bald patch on the scalp was thought to represent the site of a healed area of this disease. The patient gave no dyspeptic history, but a test meal showed no free or combined acid during the two hours following the meal. The blood count (Dr. Knott) gave 100 per cent. haemoglobin, 5¼ million red blood cells, and 8,900 white blood cells, with a normal differential count. The blood uric acid (Dr. Ryffel) was normal (3.2 mg. per 100 c.cm.). The following doses of gold were prescribed: October 15, 1936, solganol B 0.05 gramme; October 22, solganol B 0.1 gramme; October 29, solganol B 0.1 gramme (on this date she was given 20 grains each of sodium bicarbonate and potassium citrate before meals, and 40 minims of dilute hydrochloric acid in water with meals); November 6, solganol B 0.1 gramme. Three days after the last dose of gold the temperature rose to 102°, and remained 99° to 100° in the morning and 102° to 104° in the evening for thirteen days. There was severe pain in the limbs and the back, with sweating. The throat was injected. At first she was thought to have contracted influenza. There was superficial tenderness to touch in the limbs, particularly severe around the upper abdomen and ribs. The knee-jerks were normal and the plantar reflexes were not obtained.

There was increasing restlessness at night, which was not relieved by full doses of Dover's powder, allonal, veganin, and chloralamide. The temperature gradually subsided after a further three weeks. The patient was comfortable during the day, but the superficial tenderness and pins-and-needles with severe restlessness returned at night, together with a rise of temperature. Dragging of the feet was noticed when she got out of bed. The temperature and symptoms subsided gradually during the next month.

Lescher's case showed some points of similarity with the above. Thus, the patient was a lady of middle age, there was some glossitis with achlorhydria, and a normal blood count. In our case, however, only 0.35 gramme of solganol B had been given against 1.56 grammes of myocrisin; but, as Lescher states, "nervous complications can occur soon after the first injection of the salt, or more commonly near the end of the first or subsequent courses." The restlessness, insomnia, and desire to walk about at night have been observed by others.

Whether the febrile reaction seen was due to the direct toxic action of the gold is a matter for discussion. The extreme rarity of the complication would suggest the possibility of another factor, and in this connexion we would refer, as Lescher has done, to Douthwaite's (1936) cases of gastrogenous polyneuritis, in which the only constant finding was an achlorhydria associated sometimes with anaemia. The achlorhydria and glossitis were present in the two cases discussed above, and it appears possible that a latent polyneuritis was activated by the gold.

It seems to us a counsel of perfection to give a test meal and take a blood count in all cases of skin disease in which gold treatment is proposed and in some cases may be impracticable. If in spite of the finding of an achlorhydria it is considered desirable to give gold, preliminary medication with hydrochloric acid, glycerin of pepsin, and vitamin B, as Douthwaite suggests, might improve the health of the peripheral nerves and prevent the appearance of this distressing complication.

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Carcinoma of Bronchus in a Boy of 19

It may be of interest to report a case of carcinoma of the bronchus in a boy of 19 resembling in many ways the case described by Dr. J. Gordon Hailwood in his interesting paper in the *Journal* of March 20 (p. 606).

H. E. S., transport driver's mate, aged 19 years 11 months, was admitted to this sanatorium in March, 1935, with a history of cough and scanty sputum for the past ten weeks, diagnosed as "bronchitis"; two weeks prior to admission his sputum was blood-stained. He also complained of pain and stiffness of the hips and knees, present for about two weeks.

On admission there was a large right-sided pleural effusion with gross displacement of the heart and trachea to the other side. The opposite lung was congestive in appearance. Sputum 1 oz., frothy and blood-stained, tubercle-negative; temperature 100° F., pulse 120. On aspiration the fluid was uniformly haemorrhagic, and 42 oz. was slowly aspirated to bring the heart back to its normal position. A few days later the effusion was replaced by air, 80 oz. of blood-stained effusion being removed. A radiograph at this stage showed a large mass occupying the right lower lobe area, and the mediastinal shadow was double width. The pain in the legs persisted and progressed, and within ten days of admission he had developed a complete flaccid paraplegia with sphincter incontinence. The Wassermann reaction was negative. The diagnosis made was neoplasm of the lung with secondary mediastinal glands and secondary deposit in the spine. He was discharged to a general hospital, where he died four and a half months later.

A necropsy revealed a tumour the size of a small orange apparently arising from the main right bronchus; the growth had extended and had infiltrated the walls of the right auricle and ventricle. The mediastinal glands were involved, secondary nodules were present in the liver, and there was neoplastic destruction of two of the lower dorsal vertebral bodies. On section the tumour was found to be an oat-celled carcinoma.

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Reviews

INJURY IN RELATION TO DISEASE

Trauma and Disease. Edited by Leopold Brahdy, B.S., M.D., and Samuel Kahn, B.S., M.D. (*Pp. 613*; illustrated. 35s. net.) London: H. Kimpton. 1937.

Textbooks of medicine mention injury as a factor in the aetiology of a great many diseased conditions, but the evidence of such a relation is often most inadequate, amounting to little more than the fallacious argument, *Post hoc, ergo propter hoc*—"Toads appear after rain, therefore it has rained toads." Drs. Brahdy and Kahn have set out in this book to show exactly in what circumstances and to what extent injury may cause or aggravate disease processes; these editors have been assisted by twenty-two colleagues, and the result of their labours is a most valuable book. The postulates are clearly expressed upon which an opinion may be based as to whether a given pathological condition is a result of trauma. The work of previous investigators is subjected to a critical review, and a great deal of original observation is recorded. The great war provided an immense amount of material for research in this matter, and some interesting deductions are made. It was found, for example, that the incidence of organic disease of the central nervous system was not appreciably greater among those exposed to war hazards than among persons not so exposed. The possibility of tumours being due to injury is thoroughly discussed, and the conclusion is reached that "there is no reasonable evidence of any relationship between a single injury and the production of a cancer," exception being made in the case of sarcoma arising in the site of a fracture, and malignant disease supervening in a scar. There is experimental evidence to show that injury is just as likely to set up retrogressive changes in a tumour as to accelerate its growth. Injury is so common (in 1933 there were recorded over eight million disabling accidents in the United States, and Vernon estimates that the annual total is much higher than this) that the factor of coincidence is very important. The authors assert that "trauma has not been proved to have any significant tendency to cause or aggravate tumours of the brain," and figures are quoted showing that although a history of head injury was elicited in 13 per cent. of a series of 431 cases of cerebral glioma, a similar history was obtained among 35.5 per cent. of a control group of 200 normal persons.

There is an excellent chapter on trauma and diabetes mellitus, written by Dr. Joslin, with the co-operation of Drs. Root and Marble. The hereditary factor in this disease is stated to be of very great importance, but is often insufficiently appreciated owing to lack of adequate inquiry. Thus a woman developed diabetes at the age of 20, when she quoted only one relative as suffering from this disease; twenty-two years later it was established that eighteen of her relatives were diabetic, including her mother and grandmother. Although a single direct injury to the pancreas can scarcely ever set up diabetes (unless nine-tenths of the gland is destroyed—a state of things almost certain to be quickly fatal), yet the disease may appear in a susceptible person—that is, one with a diabetic heredity—as a result of overfeeding and lack of exercise consequent upon an injury. One war veteran in America actually established his right to a pension in respect of diabetes, brought on by "exposure to food" in a camp at Hoboken, where he put on much weight! The incidence of diabetes among the American troops in France was lower than among those who did not proceed over-seas; and out of 12,498 wounded men there were only three recorded cases of diabetes, two of which were seen by the author, who found no reason to attribute the disease to war service; his conclusion was that neither the organic nor the psychical traumata of war had any appreciable importance as causes of diabetes.

The general plan in this book is to give a short, systematic account of a pathological condition, then case-histories showing how such a condition may follow injury, and finally a commentary explaining the relation of the disease to the injury. No attempt is made to deal with such obvious sequences as fractures due to single accidents, perforation of viscera by foreign bodies, or ordinary infections of damaged tissue. Other omissions are less easily accounted for. Thus there is no discussion of the problem of traumatic hernia, or of detachment of the retina after blows on the head. "Juxta-epiphyseal strain" is not mentioned as a predisposing factor in osteomyelitis; indeed, the opinion is expressed that trauma plays "an extremely rare role in the aetiology" of this disease, except in cases of compound fracture.

The book is well printed and has an adequate index and very full bibliographical references, and should prove to be of great value to those who have to advise in cases of claims for personal injury in which the relation of the alleged injury to the present condition is not clear.

HYGIENE FOR MEDICAL STUDENTS

Handbook of Hygiene. For Students and Practitioners of Medicine. By Joseph W. Bigger, M.D., Sc.D., F.R.C.P.I., D.P.H. (Pp. 406; 16 figures. 10s. 6d.) London: Baillière, Tindall and Cox. 1937.

Works on hygiene published lately in this country have shown a tendency to arrange themselves into two main groups: first, the smaller books, which seek to aid the medical or other student in the revision of his previous knowledge, and, secondly, the larger textbooks, addressed to candidates for a public health diploma, which include a wider field. But neither group meets the genuine need of the student of medicine. For his own study of hygiene he requires something between.

A work which may claim to fill this gap in a very adequate manner now appears from the pen of Professor Bigger of Dublin. It is, as the author states in his preface, specially intended for medical students. After an introductory note on vital statistics the communicable diseases are presented, as is proper, in some detail. The view is expressed that the student of medicine derives little profit from courses of instruction in vaccination as usually conducted. On disinfection the author says, "With the exception of small-pox, room disinfection is only necessary in the case of diseases conveyed by insects." He deprecates alarmist discussion of the so-called cancer menace. "More nonsense," he says, "has been spoken and written about the cause of cancer than about almost any other subject." That his outlook is not limited to the narrow seas is shown by his reference to the mottling of the dental enamel occasioned in North America and elsewhere by fluorine-charged waters. One of the many good points which he makes is that "while ventilation and heating must be considered together, they must never be effected together."

Where opinions differ the author is fair to both sides, but he never fails to state his own view, which is a substantial merit in a work of this kind. He writes with candour and elegance, and from time to time makes happy use of a lively phrase to vary his graver discourse.

For example, speaking of air temperature, he says, "It is doubtful which of the two feels more uncomfortable—an American in an English house or an Englishman in an American house during the winter."

The book covers its field well. In addition to the usual topics it includes a section on war gases. It should meet the requirements of those to whom it is addressed. In his preface the author expresses the hope that his students will not sell their copies when their examinations have been passed. We do not think they will.

LIFE IN THE R.A.M.C.

Soldiering With a Stethoscope. By Colonel N. J. C. Rutherford, D.S.O., M.B. (Pp. 288; illustrated. 12s. 6d. net.) London: Stanley Paul and Co. 1937.

This book, as its name implies, is a chronicle of life in the R.A.M.C. Colonel N. J. C. Rutherford joined this corps in 1898, and a year later he was on active service in South Africa, his varied experiences in the campaign including a term as medical officer of a Colonial mounted infantry unit—Nesbitt's Horse. In 1908 he served for a short time in Sierra Leone. During the great war he saw much active service in France and on the Salonika front, followed by a period in Constantinople during the troubled years which succeeded the armistice. In 1924 he was stationed in India, seeing that country for the first time at the age of 50, and finally, on his retirement from the active list, he held the post of resident medical officer at the Tower of London for four years until 1933.

There is not a dull page in this book. Blessed evidently with an equable temperament Colonel Rutherford takes the rough with the smooth and never fails to see the humorous side of life. The chapters on the war of 1914–18 are especially good. The author describes the dashing escape of a German Uhlan from some British headquarters in the Hotel de Ville at Steenwerck: "It was a real romantic effort and I hope he got away safely." This comment is from the colonel's diary, written at the time, and shows the consistent freedom from hate and rancour which appears to be a pleasant feature of his character. This book reveals what an enjoyable, useful, and interesting life may be spent in the R.A.M.C., and many readers will probably regret that their career has lain in less adventurous paths.

PROBLEMS OF GROWING CHILDREN

The Growing Child and its Problems. Edited by Emanuel Miller, M.A., M.R.C.S., L.R.C.P., D.P.M. (Pp. 231. 6s. net.) London: Kegan Paul and Co. 1937.

This is a volume of useful essays by seven well-known writers on child psychology, including the editor, on the problems presented by the mental growth of children from 5 years of age to the close of adolescence. They attempt to describe the sort of mild disorders which show that a child is troubled or maladjusted, and how best to meet these difficulties and clear the path by which the child may enter adult life with a reasonable prospect of success. Miss Gwen Chesters writes a practical article on play therapy and the use of water, sand, dough, and such simple materials in straightening out a child's mind and making it intelligible to himself and his guides. Miss Constance Simmins explains education, guidance, intelligence-testing, and the art of matching a child's schooling with his abilities and tastes. The remaining writers are medical, and Dr. Laura Hutton deals with the adolescent girl and the problems bound up with puberty and its disturbance of the endocrine balance. Personality deviations in children are considered by Dr. Clifford Allen. Dr. Paterson Brown, in an essay on habits, traces the origin of most of the excessive practices which give trouble in childhood, and advises the parent or teacher to be tolerant of habits if he would be saved from worse disasters. In a study of neurosis in school children Dr. C. L. C. Burns points out the contributory factors in the parents and gives sound advice for treatment.

The last essay in the book is by the editor, on problems of the growing child; Dr. Miller writes in his usual effective manner on the basis of his great experience. The several papers are, on the whole, conspicuous for the practical attitude which their writers adopt towards these difficult subjects.

GASTROPHOTOGRAPHY

Atlas der Gastrophotographie. By M. J. Heilpern, O. Porges, and H. Hofmann. (Pp. 29; 38 plates, 7 figures. M. 10; geb., M. 12.) Leipzig and Vienna: F. Deuticke. 1936.

The difficulties in diagnosis of gastric diseases have driven practitioners to seek methods of securing information about the state of the mucous membrane of the stomach if possible by means that cause no inconvenience or risk to the patient. The earlier gastroscopic apparatus, rigid and of a large enough diameter to obtain useful views, was by no means free from danger, and many were led to try methods of obtaining photographs of the lining of the stomach. The difficulties were those principally of illumination and of sighting to obtain views of lesions thought to be present. Professor Porges and his collaborators have invented a gastrophotographic apparatus which they have modified over the years, and by means of it they can obtain very fair photographs of the gastric mucous membrane. In a short book they have brought together the results of their work. Twenty pages are given to the description of their improved apparatus and the technique to be adopted in using it, and the remainder of the book is made up of series of photographs of the gastric mucous membrane in all sorts of states—normal, inflamed, ulcerated, and malignant. There are many fallacies in the interpretation of the pictures obtained; the appearance of mucus or blood must be recognized, normal folds of the gastric lining have to be differentiated from hypertrophic or atrophic states and the edges of ulcers or the projections of cancer.

The photographs are clearly reproduced and their meaning is discussed in the text, and readers will find in the book a very useful guide to a highly specialized and difficult technique. And those who have worked at the subject and recognized its limitations will still feel that a better and more satisfactory diagnosis may be made by confirming the serial pictures, obtained by careful technique with *x*-ray and barium meals during the filling and emptying stages of the stomach, with gastroscopy by means of the convenient flexible modern gastroscope the use of which is fraught with little or no risk to the patient.

Notes on Books

The Soul of the White Ant, by the late EUGENE N. MARAIS (Methuen, 7s. 6d.) is a remarkable study in natural history, comparable to the work of Henri Fabre. The term "white ant," as the author admits, is a misnomer, for the book deals with the life of termites. The author puts forward the theory that the organic unity of the termitary may be compared with the human body, the position of the queen being analogous to that of the human brain. Maeterlinck, in his *Life of the White Ant*, maintained the same thesis, but Miss Winifred de Kok,

who has translated the present volume from the original Afrikaans, brings evidence to establish Marais's claim to priority. While the greater part of the book is devoted to the termitary and its inmates (or constituent parts), the author digresses in one most interesting chapter entitled "What is the Psyche?" to baboons. As a result of long and close acquaintance with these animals he states that the difference between the psyche of the lowest baboon and of the highest mammal below the primates is far greater than that between the baboon and man. He regards the psyche of man and of the baboon as the same in quality, differing only in quantity. This book is a record of painstaking observations and the deductions drawn from them by an independent, logical, and analytical mind. Any reader to whom the subject appeals will find it of absorbing interest.

The Transactions of the American Gynecological Society for 1936 (Volume 61) have been issued under the editorship of Dr. OTTO H. SCHWARZ by the C. V. Mosby Company of St. Louis. The papers contributed to this society during the year are followed by obituary notices of six American gynaecologists, and of Sir Kedarnath Das of Calcutta and Professor William Blair-Bell of Liverpool.

No. 17 of the Individual Psychology Medical Pamphlets includes the *Parent–Child Relation*, and other papers read before the Medical Society of Individual Psychology, London. It is published by the C. W. Daniel Company, Ltd., at 2s. 6d.

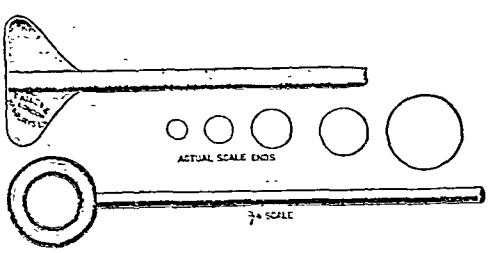
The Union Press of Bombay has printed in pamphlet form a paper on *Assessment of Risks in Life Assurance Practice*, contributed by Dr. JEHANGIR J. CURSETJI of Bombay to the third Indian Insurance Conference, held in Calcutta on March 7, 1937.

Preparations and Appliances

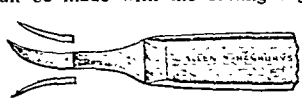
INSTRUMENTS FOR PLANTAR WARTS

Dr. F. A. E. SILCOCK (honorary dermatologist, Leicester Royal Infirmary and City General Hospital, Leicester), writes: Having recently had several cases of plantar warts to deal with by surgical excision, I got Messrs. Allen and Hanburys Ltd. to make to my design the following instruments, which have proved very useful.

1. Several punches, consisting of various sized circular steel cylinders with a sharp bevelled cutting edge. These are for punching out the warts, using a size slightly bigger than the actual wart to be removed.

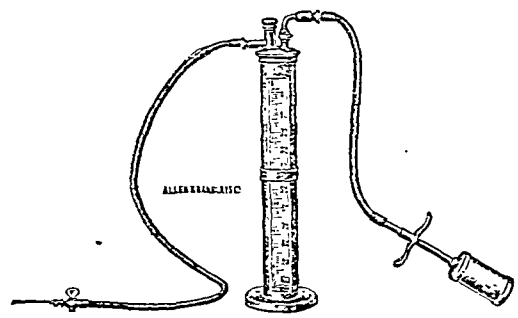


2. A small-bladed scalpel, with the blade curved on the flat. This blade can be made with the cutting edge facing either



right or left. These are handy for either removing the warts by undercutting them or to free the base of the piece of tissue punched out as above.

3. An apparatus for injecting solutions into the skin or subcutaneous tissues under pressure. It can be used for various solutions or for injecting local anaesthetics. The principle of this is similar to that of a soda-water siphon, only the pressure is obtained by means of a small removable external force pump which can be worked with one hand. It consists of a graduated glass cylinder inserted in a metal frame, resting on a rubber base, with a screw-down top provided with two metal connexions leading, one to the pump and having a turn-off tap, the other by means of a short



length of metal tubing from the solution in the cylinder, provided with a fine screw-down release valve, and which can be connected with a length of rubber tubing to the injecting needle. There is also a small turn-off tap at the distal end of this rubber tubing, on to which the needle is fitted. In order that oily or thicker solutions may be used, if required, larger bored metal tubing can be substituted in place of the finer one leading from the solution in the glass cylinder by screwing them on instead. All parts of the apparatus are readily taken down for cleaning and sterilization, and with the exception of the glass cylinder are rustless and unbreakable. If one wants to estimate the exact pressure it can be done by connecting a pressure gauge in place of the pump, but in actual practice I have not found this necessary, as one can be guided by the rate of flow of the fluid, etc. An obvious advantage of this instrument is that one can keep "on tap" large quantities of various solutions, ready to inject, with the minimum of preparation when required. Being of fairly stout construction it should be less liable to be broken than the average glass syringe.

NEW VALVE AMPLIFIER HEARING AID

The technical laboratories of Allen and Hanbury's Acoustic Department have produced a new valve amplifier hearing aid. It appears in two patterns, one working from a two-volt accumulator and dry battery, employing two stages of amplification, and the other with larger capacity batteries and using three valves, giving increased output. The smaller model gives twenty-five hours' use before the accumulator needs recharging, and the dry battery has a life of about three months. The instruments have a wide frequency range, giving effective amplification over 50 to 6,000 cycles per second. Very little background noise is experienced, and for cases in which the slightest background noise may be intolerable a piezo-electric crystal microphone, entirely free from "background," is available at a small additional cost. The user has a choice of four types of air or bone conduction earpieces. An important feature of the instrument is the standardization of automatic volume control, ensuring the maintenance of a comfortable level, with non-registration in the instrument of loud noises in the immediate vicinity. The construction and performance seem to be admirable; the maintenance cost is low—only a few pence per week—and a comprehensive service is guaranteed. The smaller model is carried in a leather case rather like a small camera, to which a shoulder sling can be added. The other model, a more powerful instrument, is carried in a black hide brief case, but being very flat it is no more incommodious than an ordinary handbag. The cost of the models is sixteen and eighteen guineas respectively, in each case including a spare accumulator.

Nova et Vetera

THE SCOTTISH TRADITION IN SURGERY

Sir David Wilkie delivered an address on the Scottish tradition in surgery to the Caledonian Society of London on February 11.

Sir David recalled that it was in London that John Hunter started this Scottish tradition. When some ninety years before the founding of your society, he said, the uncouth West Country lad came up from East Kilbride to London to study anatomy with his learned brother William an epoch in surgery began—from being little more than a craft it was destined to become a science. Hunter, first by his intimate study of anatomy, then by his study of comparative anatomy and biology, by bringing his remarkable powers of observation to bear on disease and founding what we now term surgical pathology, and finally by introducing into the solution of surgical problems the experimental method, laid the foundation for all progress in surgery since his day. He was one of the three greatest surgeons of all time and a worthy founder of the Scottish tradition in surgery. His breadth of view in searching the whole field of nature for the secrets of bodily form and function and their disorders, his rugged honesty, his insatiable curiosity and untiring industry set a standard never since equalled, but forming a constant stimulus and inspiration to all surgeons.

When Jenner, the discoverer of vaccination, debating in his mind the possibility of immunizing human beings by giving them cow-pox, wrote to Hunter for advice he got the laconic and characteristic reply: "Don't think; try it."

Scottish Surgery After Hunter

It is perhaps not without significance to note that at the time of the foundation of your society Scottish surgery stood in higher repute than it ever since has done. In that year Sir Charles Bell returned to Edinburgh to the chair of surgery after a distinguished career in London. Known all over Europe for his researches in anatomy and physiology, he was as distinguished a scientist as he was a gifted artist.

His brother, John Bell, had died some years before, but his influence as a teacher and a surgeon was still evident in the practice of his pupils. One of them, Ephraim McDowell, way out in Danville, Kentucky, had successfully performed the first abdominal operation and generously given the credit to the teaching of John Bell. Lizars followed up McDowell's work in Edinburgh, and was the first ovariotomist in this country.

Syme, one of the greatest surgeons of all time and the father-in-law of Lister, held the chair of clinical surgery and was the leading teacher of the day. It has been said of him that he "never wasted a word or a drop of ink or a drop of blood." To this day the operations which he devised are practised and his principles of teaching are observed.

Just a year before, Syme's colleague, Liston, had gone from Edinburgh to London, where he was to become the leading surgeon of the day. A man of magnificent physique, standing 6 ft. 2 in., he was the greatest exponent of the rapid surgery of pre-anaesthetic days. The students, with their watches in their hands, timed his operations in seconds—amputation through the thigh, 1 minute 15 seconds; removal of a stone from the bladder, 2 minutes 5 seconds. Strangely enough he was the first surgeon in this country to use a general anaesthetic—ether—the year before Simpson first used chloroform in Edinburgh.

When Liston left Edinburgh his place was taken by a surgeon, Fergusson by name, a skilled anatomist and teacher, who four years later went to London, where he justly acquired a commanding reputation as a surgeon and teacher and the greatest exponent of conservative surgery in the country. Sir William Fergusson became Serjeant-Surgeon to Queen Victoria and the leading surgeon of his day.

This remarkable group of men all had this in common—they had all been teachers of anatomy in the famous classrooms of Barclay and of Robert Knox, they had the lion's heart and the lady's hand required for major surgery, especially in pre-anaesthetic days, and all their work was distinguished by sound judgement and by a wise conservatism.

Lister in Scotland

If anaesthesia was first used by Scottish surgeons in this country the still greater advance—antisepsis—was evolved by an Englishman, Lister, working in two Scottish universities. Attracted to Edinburgh by Syme's reputation, Lister became a devoted disciple of this great surgeon and found the atmosphere which favoured the germination of the ideas which were already stirring in his mind.

It was while professor in Glasgow that Lister carried out the crucial tests of his antiseptic system, and when he returned to Edinburgh to fill the chair vacated by Syme it remained only to convince others of the great truth he had laid bare. Returning to enthusiastic students and to visiting surgeons from all over the world, this Edinburgh period was the happiest and most fruitful in his life. Later in London he met with opposition and, still worse, indifference, and often sighed for the generous and open-minded enthusiasm of the crowded classrooms he had left. No one followed the Hunterian tradition more consistently than Lister, who, by bringing the scientific methods of the laboratory to bear on a practical surgical problem, changed the whole face of surgery and for all time made it safe.

The Tradition in Modern Times

Coming still nearer to the present we find the tradition of careful observation and logical deduction leading to rational and successful treatment exemplified in the work of Macewen of Glasgow on the surgery of the brain and of the chest, pioneer work which has stood the test of time. In Aberdeen Ogston maintained the reputation of Scottish surgery for enterprise, combined with soundness, and of Scottish teaching for clarity and candour. Meanwhile in London Watson Cheyne promoted Listerian practice and Scottish teaching methods, and later Thomson-Walker handed on the torch.

In Edinburgh Caird and Stiles raised high again the good name of Scottish surgery, and by their habits of travelling far and wide kept in the forefront of an ever-moving science. That Edinburgh should have again become a Mecca for surgeons from the Dominions and America is largely due to the brilliance of these two men as surgeons and as teachers.

The opportunity for research and for advance in knowledge which surgery now offers to the surgeon and the benefits which result from a correlation of clinical and experimental work were long in being appreciated in this country. It is to the credit of Scottish surgery that the first Department of Experimental Surgery in the Empire was opened in Edinburgh twelve years ago, an example followed in Montreal and London. That young surgeons should have the training in the careful observation and the controlled experiment which the experimental laboratory provides is one of the most important factors in making for advance in medicine, and in promoting this Scotland has led the way.

As in other fields, so in surgery, the Scot owes much to his primary education and to following out the principle that only on a sound foundation of the basic sciences,—anatomy, physiology, and pathology—can a noble edifice for surgery be built. The habit of travel brings enlightenment, and with Scottish surgeons it has been a creed. The reputation for care and for stability, for common sense and blunt honesty, has made the opinion of the Scottish consultant proverbially sound. The young Scottish surgeon has indeed a noble heritage.

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CHEAP MILK FOR MOTHERS AND CHILDREN

A "positive milk policy" is being urged upon the Government by the Children's Minimum Council, a body of which Sir Frederick Gowland Hopkins is president and which has the support of twenty-six national organizations concerned with maternity and child welfare. The Council has submitted a plan to the Ministry of Health for the provision of cheap milk for mothers and children under school age. Some recent investigations have shown that the consumption of milk in working-class households is far below the amount regarded as desirable, that consumption falls with falling household income and number of children in the family, and that many children get little or no fresh milk. The report of the Advisory Committee on Nutrition, published in April last,[1] recommended from one to two pints a day for children, two pints for nursing and expectant mothers, and half a pint for other adults; but the Council points out that at present prices this would mean for a family consisting of three children, a mother again pregnant, and a father a weekly milk bill of 13s. 3d.—an impossible expenditure for a working-class family with dependent children. Last year a survey was made of 587 households in Oxford, taken at random and not confined to the working class. In the families where there were no children the average weekly consumption of milk per head was 4.60 pints, and steadily diminished with the number of children until, with six children or more in the family, it became 1.85 pints. In 1,000 "welfare" families in the county of Durham it has been found that the average amount of fresh milk purchased falls from 0.7 pint a week per head for families of three persons to 0.4 pint for families of five. No doubt distaste, prejudice, and indifference contribute to the low consumption of milk, but the full benefit of educational propaganda cannot be effective in the classes where consumption is lowest until milk is offered at a price which the people can afford to pay. In Great Britain the average price of liquid milk is much higher than in any other country of North-West Europe or in the United States. In Sweden, with milk at 1½d. a pint, the annual consumption of the non-agricultural population is 420 pints per head; in Great Britain, where the average price is more than twice as high, it was only 150 pints in *1934–5*. In the Council's opinion no general reduction of price which seems commercially feasible in the near future will of itself be enough to bring milk within the range of mothers and children in less well-to-do homes. Milk must therefore be made available for these people as a matter of social policy.

The proposal of the Council is that milk should be purchasable at 1½d. a pint for all expectant and nursing mothers and children under school age in families of insured workers and others of like economic status, and that the quantity available at that price should be up to two pints a day for mothers and one pint for children. Its view is that a substantial increase in consumption of milk by these people is of such vital importance to public health that it would be in the national interest to subsidize existing retail prices (averaging 2s. 2d. a gallon) sufficiently to bring milk within reach of the poorest. But the position of the milk industry makes such a costly resort unnecessary. Rather more than one-third of the milk sold through the Milk Marketing Board is sold for manufacture at prices which average at less than 5½d. a gallon. Part of this flood of cheap milk should be diverted to the needs of mothers and children. The Council calculates that a sufficient supply of milk could be made available, if producers and distributors agreed on some concession, at 1s. 5d. a gallon. The gap between this figure and the 1s. a gallon to be charged for the milk would need to be bridged by a subsidy from the Exchequer. The scheme should be organized through the public health authorities and the milk distributed to the homes of the consumers. It is estimated that in Great Britain there are about three and a half million expectant and nursing mothers and children under 5 of this economic status. If they became eligible for cheap milk and their demands averaged only half a pint a day the total consumption at the cheap prices would be just under eighty million gallons a year, entailing, at 5d. a gallon, a national subsidy of £1,663,000.

The principle of differential prices is of course not new; many industries—and professions too—charge lower prices to certain consumers or clients in order to meet demands at different levels. The milk producers themselves practise price discrimination when they charge 3½d. a gallon for milk which is to be made into butter and cheese, and 1s. 3d. when it is to be resold to the housewife. The producers enjoy a monopoly of the home market, have statutory power to fix the price of their produce,

[1] *British Medical Journal*, April 10, p. 771.

and receive substantial assistance from the Exchequer. To enable the Board to maintain present pool prices and at the same time to sell manufacturing milk at world prices, the public are not only paying a relatively high price as consumers, but as taxpayers they are subsidizing the sale of milk for manufacture. The good will of the public for the Marketing Board, on which its success to some extent depends, will be more readily accorded if it can be shown that the Board's monopoly powers do not result in depriving a large section of the public of the milk essential for their children. The Council is also urging that milk should be supplied free for expectant mothers and young children in families where the money available for food is insufficient for full health. At present under most local authorities, even after a stringent income test has been satisfied, the milk is only supplied free when clinical symptoms reveal the need for additional nourishment. In the Ministry of Health's circular accompanying the Advisory's Committee's report it was urged that the scale of income for milk assistance should be so framed as not to render it difficult for any mothers to take advantage of the authorities' arrangements. The Council suggests that a basis should be laid down by the Minister in the light of nutritional requirements, possibly following the estimate made by the Nutrition Committee of the British Medical Association as to the minimum costs of satisfying food requirements, revised to conform with the milk recommendations of the Advisory Committee, or the Advisory Committee itself might be asked to draw up a scale for the guidance of local authorities.

Some discussion on milk policy arose during a session of the Imperial Social Hygiene Congress held in London last week. Sir John Boyd Orr, in an address on nutrition, said that the primary policy of the Government should be to ensure that an amount of milk adequate for health is brought within the purchasing power of every member of the community. The representative of a county council asked whether it was wise to stress milk so far as adults were concerned, in view of the fact that this might blind people to the need for a good mixed diet. Sir John Orr replied that milk was not an essential food for anybody; even for young children a perfect diet could be devised without milk at all; but the reason for emphasizing milk was because the common diet of the poorer population, with its large reliance on white bread, sugar, and margarine, was deficient, and milk offered itself as the cheapest means of correcting nutritional faults. For those who could command a varied diet of tomatoes, green vegetables, and so forth milk was unnecessary.

GASTRIC DISORDER AMONG BUSMEN

In the *British Medical Journal* of July 10 (p. 69) there appeared a full summary of the contents of the report by Dr. A. Bradford Hill on the sickness experience of London transport workers, published by the Industrial Health Research Board.[1] The report is so clearly written that we need not again summarize the findings. It is sufficient to say that the scope of the medico-hygienic problem still requiring investigation has been satisfactorily defined, and that it should now be possible, given the frank co-operation of those having expert knowledge of the administrative, medical, and psychological questions involved, to reach a solution. We think, however, that both what was said before the report appeared and the way the report has been received give cause for reflection.

Since in the most populous European states free discussion of subjects which have, or are thought to have, political or social implications is about as dangerous as criticism of the Government under Tiberius, we are not unnaturally proud of the very different position in our own country. But not a little of what has appeared in the public press since the bus strike must make the judicious grieve. So far as this derives from party spirit, from a desire to make a party score on one side or the other, we have no concern with it. Even when it is suggested that the correct plan of a scientific investigation was settled long ago by the Queen of Hearts, "Sentence first—verdict afterwards," we can afford to smile. But there is more than a suspicion that these eccentricities are not wholly confined to politicians. In the first place we do not think that either in the evidence taken by or in the report of the tribunal appointed at the time of the strike, the public were sufficiently informed of the facts (*a*) that a scientific investigation had been proceeding for more than three years; (*b*) that, as in every investigation of the aetiology of sickness, an adequate "control" group must be obtained; (*c*) that the method of investigation must be statistical, but a statistical investigation checked at every point by medical and administrative experts.

There was a tendency to depreciate the statistical method as inferior to some other, not clearly defined, more scientific approach. The public are still ignorant of the amount of work done by the Medical Research Council and the Industrial Health Research Board—work in which members of the medical profession take a large part—in focusing knowledge of industrial health problems. In this particular case they and their investigators have been done considerably less than justice. No prob-

[1] Report No. 79. H.M. Stationery Office (6d., postage extra).

lem can be solved until it has been correctly stated. Finally there have been signs of an extension of a habit which used to characterize some high-browed periodicals. We are all familiar with the supercilious reviewer who remarks that if Mr. X. had been acquainted with the important papers by Y. and Z. he would not have written his book at all or would have written it quite differently. In this case there has been a tendency for experts in particular fields to overemphasize the value of specialist knowledge. What has not been realized is that the problems of industrial sickness are essentially matters for team work, and that violent or scornful emphasis on this or that method of approach tends to destroy the spirit of co-operation without which team work is impossible.

THE REPAIR OF ANAEMIA

In health the blood is maintained with surprising constancy at a level about 5,000,000 red cells and 100 per cent. of haemoglobin per c.mm. The length of life of the red cell is not known with any certainty, but it is supposed to be from twenty to fifty days. Assuming a span of life of twenty-five days, calculation shows that some 200,000 old red cells must die and 200,000 new red cells must enter the circulation every day. Anaemia may result from an increased rate of destruction or a decreased rate of production of red cells or from a diminution in their length of life. In pernicious anaemia the poverty of the blood and the megaloblastic degeneration of the bone-marrow are nowadays attributed to a decreased rate of production of red cells from lack of essential principles. There is a close correlation between the degree of anaemia, the extent of hyperplasia of the bone-marrow, and the height and duration of the reticulocyte crisis on the inception of treatment with optimum doses of liver or other effective substances.[1] Mathematical formulae have been devised whereby the expected reticulocyte crisis can be calculated, and such formulae are of value in testing therapeutic preparations. The anaemia which follows a sudden fall in the number of circulating red cells, as from a haemorrhage or a crisis of haemolysis, is repaired spontaneously within a few weeks, and we have been accustomed to attribute this repair to an increase in the rate of erythropoiesis. Such an increase could be explained either by a more rapid maturation of the cells through the stages of erythroblast and reticulocyte to mature erythrocyte, which seems *a priori* improbable, or to an increase in the amount of haemopoietic tissue, which is in fact confirmed by pathological findings. This explanation is challenged by Schiodt,[2] who has made careful observations on blood regeneration in man after haematemesis and melaena. He finds that there is a distinct correlation between the minimal blood count and the daily rise in red blood cells. The more the patient has bled the faster the blood mounts, and all the curves, though starting at different levels, tend to meet at the level of 4.54 million red cells per c.mm. about forty days after the haemorrhage. This phenomenon, and especially the straight line character of the curves, could quite simply be explained by assuming that the rate of blood formation and the longevity of the red cells remain constant. The number of red cells removed from the circulation by death, however, is directly proportional to the total count. If the red cell count falls to 2.5 million only 100,000 red cells will die every day, and there is therefore a natural surplus of 100,000 to correct the anaemia. The theory is perhaps too ingenious, and it does not explain the reticulocyte crisis and the hyperplasia of the bone-marrow which accompany a haemorrhagic or a haemolytic anaemia. But if the rate of production of red cells is actually accelerated for a time it is surprising that repair does not more often overshoot the mark and produce an erythrocytosis. Moreover, one would have expected a sigmoid curve rather than the straight line that Schiodt found. Schiodt's patients were treated by Meulengracht with early feeding. Iron and blood transfusion had no obvious effect on the rate of repair of the anaemia, but it was retarded by fasting or a strict ulcer cure. It is also possible that the use of alkalis may have acted as a check to the attainment of the normal level of 5,000,000 red cells during the period of observation.

[1] *Physiol. Rev.*, 1937, **17**, 291.
[2] *Amer. J. med. Sci.*, 1937, **193**, 313, 327.

VISIT OF BRITISH SURGEONS TO PARIS

A party of thirty surgeons representing the Royal College of Surgeons of England and the Association of Surgeons visited Paris on Monday and Tuesday, July 5 and 6, at the invitation of the Académie de Chirurgie. They were received by the president, Dr. Baumgartner, the secretary, Dr. Louis Bazy, and other members of the Académie. On Monday morning they visited the anti-cancer centre at Villejuif, where they were received by the director, M. Roussy, by M. Bertillon, Mme Simone Labord, and the heads of the various departments. The anti-cancer organization of France, distributed over twenty centres, was explained by Professor Roussy, who then showed the party the extensive and important clinic and laboratories of Villejuif. Of perhaps special interest were the radium unit, designed by Mme Simone Labord, and containing five grammes of radium, and the magnificent x-ray plant, of which one unit could reach an intensity of 600,000 volts. Leaving Villejuif the party was entertained at lunch at the Hôtel Foyot, one of the oldest and most famous restaurants of Paris, and afterwards met in conference with the Académie de Chirurgie at its house in the Rue de Seine. After an opening address the president announced that the French Government had conferred upon Sir Cuthbert Wallace, Professor George Gask, and Mr. H. S. Souttar the high honour of the Croix d'Officier de la Legion d'Honneur in recognition of the part they had played in establishing relations and friendship between the Royal College of Surgeons of England and the Académie de Chirurgie. By the authority of the President of the Republic Dr. Baumgartner

decorated each of the recipients in due form. Sir Cuthbert Wallace responded in suitable terms, expressing the deep appreciation which all those present felt of the honour which had been conferred by the President of the French Republic upon the Royal College of Surgeons of England. Several important papers were presented by members of the Académie on the subject of surgical infarctions, and the members then adjourned to the physiological laboratory, where Professor Binet had prepared a series of experiments demonstrating points which had been made in the discussion. In the evening the party, and the ladies who accompanied them, were entertained at dinner by the Académie de Chirurgie at the Hotel Ritz. The occasion was a very brilliant one, and the presidents of the Académie de Chirurgie and the Royal College of Surgeons expressed in short but admirable terms the friendly relations of the two great societies. Tuesday morning was devoted to visits to the hospitals of Paris, where a series of operations had been arranged, and the meeting closed with a visit to the Château of Chantilly, which was specially thrown open for the party by the French Government. The meeting was felt by all to be a great success, and to mark another step in what is hoped may be a long and close friendship between the surgeons of France and of Great Britain.

FURTHER WORK ON THE HYPOTHALAMUS

Localization of function in the brain has been made possible by two distinct methods of approach. One is to expose the area to be investigated and observe the effects of stimulation by accurately placed electrodes. The other is either to remove or to damage the area and to study the disorder produced by loss of function of that particular part of the brain. A localized disease process may either confirm the results of such experiments or, in inoperable areas of the brain, serve as a substitute for them. Both these methods have been used in recent research on that mysterious region of the brain, the hypothalamus. For some time it has been known that electrical stimulation of the anterior part of the hypothalamus gives rise to sweating of the footpads in animals, and there has also been convincing evidence that the hypothalmus contributes to the maintenance of body temperature. Masserman[1] has carried out a series of experiments on animals which go to show that sodium amytal—and possibly barbiturate drugs of a similar nature—has a specific inhibitory effect on the sympathetic reactions of the hypothalamus. A study of the influence of a disease process affecting the hypothalamus on the heat regulation of the body has been made by Finkelman and Stephens,[2] who measured the increase in oxygen consumption and the ability to maintain the normal temperature on exposure to cold in patients with chronic epidemic encephalitis as compared with normal subjects. They found that heat regulation was defective in chronic encephalitis, there being a greater loss in temperature and a smaller gain in oxygen consumption than in normal controls. The greatest loss in temperature on exposure to cold was found in patients with encephalitis who had been treated with atropine. The authors deduce from the findings here briefly outlined that atropine disturbs the heat-regulating centre in the hypothalamus, and they ascribe the disorder of heat regulation in epidemic encephalitis to a lesion at this site. In a disease in which the lesions are so widespread further work is needed to confirm these views.

[1] *Arch. Neurol. Psychiat.*, Chicago, 1937, 37, 617.
[2] Ibid., 1937, 37, 514.

ANAESTHESIA IN GENERAL PRACTICE

There appears in this week's issue of the *Journal* the first of a short series of signed articles on anaesthesia in general practice. Anaesthesia has not lagged behind other branches of medicine, and during the past few years has made rapid advances. The comfort of the patient, the importance of allaying anxiety, the choice of anaesthetic agents for different types of patient and for different types of operation are all matters which have received, and are receiving, the attention of those who specialize in the subject, aided as they are by the researches of the chemist and the physiologist. Although anaesthesia is now incomparably safer than it was years ago, new agents introduce new risks, and new methods of dealing with these have to be devised. These and other questions will be considered in the series, which is intended first and foremost for men in general practice, especially for those not within easy reach of elaborate equipment or expert assistance. It therefore seemed apposite to start with a paper by someone actually in general practice, so that the articles that follow may be read against the background of experience of practical difficulties and needs—a background provided by the article at page 126 by Dr. Helen Lukis, who was awarded the Sir Charles Hastings prize in 1934 for her clinical study entitled "The Problems of Anaesthesia in General Practice."

BONOMO AND THE ITCH-MITE

Two hundred and fifty years ago a young doctor of Leghorn identified the itch-mite and refuted the belief that scabies was a disease of internal origin. The revival of interest in Bonomo is due to Dr. Ugo Faucci, whose researches have shown how this discovery furthered the understanding of contagion. When the Italian Society of Dermatology met last month at Leghorn in honour of Bonomo and his collaborator Cestoni, Dr. Faucci brought to light the correspondence of Bonomo with Lancisi, the famous papal physician.[1] The letters are amusing and instructive. Bonomo had submitted his book to the Congresso medico Romano, a private medical society, and Lancisi tells him of its reception. He warns him not to believe everything that he thinks he has seen through his microscope, and says that he is too bold in generalizing about the parasitic origin and

[1] Ugo Faucci: *La Polemica Bonomo-Lancisi sull' origine acarica della scabbia.* Livorno. 1937.

contagious nature of scabies because he has found "worms" in certain cases. When Bonomo repeats his claims Lancisi answers with a formidable display of learning. The English reader will notice that he quotes Willis among many authorities, ancient and modern, including the Bible, to show that scabies can arise spontaneously. Bonomo sent him in return some doggerel verses on the spontaneous generation of insects, and this time Lancisi answers more sternly, hinting that Bonomo's ideas are very near heresy. In a final note the young man admits that his master cannot be mistaken, and that scabies may sometimes arise without contagion. Dr. Faucci suggests that Bonomo's submission was more politic than sincere. He has annotated the letters from a wide knowledge of the period, and they give us an intimate view of medical life in Italy at the close of the seventeenth century.

CANNED FOOD

The canned food of to-day is hermetically sealed and processed in a metal container. The original containers in this method of preserving, as first used by Nicholas Appert in Paris in 1809, were glass bottles. Soon afterwards Durand in England began to employ tin canisters, which were a notable improvement, since they were less fragile than the bottles and also more amenable to heating and sealing. From these beginnings the industry grew, slowly at first, more rapidly later. Great Britain now heads the list of importers. In 1919, as a result of war shortages, there was a sudden increase in the volume of canned imports conveyed to this country. Just as Appert's bottled food was devised for armies in the field, so in these latter days its canned counterpart has already contributed to the "iron ration" of Britain, and may again. Economically the canning industry holds an assured place. Scientifically it has outgrown its early empirical stages and is developing along the lines of an exactly controlled system. A survey of the various procedures now favoured by packing houses is well presented in a recent work by O. and T. W. Jones.[1] The aim of the authors has been to put together a book of practical value. The general principles are broadly laid down and, where necessary, amplified in detail according to the special conditions of the process under consideration. Beginning with the selection and preliminary preparation of the food, the authors next discuss the various forms of the can, indicate the most suitable grades of tin-plate, and explain the purpose of processing. They detail the management of the cannery laboratory. They devote attention to water supply and the question of the hardness of water, including its softening where required. Other topics which are set forth in the same informative manner include general chemical analysis, the microbiology of canning, the preparation of culture media, the food-spoiling organisms, and the effects of canning on nutritive values. A pamphlet by H. B. Cronshaw[2] is concerned more particularly with the wholesomeness of canned foods. Both the principles and procedure of canning are set forth in a concise and lucid manner. Metallic contamination, gas production, and bacterial growth are discussed. Ptomaine poisoning is rightly discounted and medical testimony to the safety of canned foods is aptly quoted. The pamphlet ends with the words: "After a century and a quarter of practical experience the public confidence in canned foods to-day is greater than ever before." This confidence is, we think, in general not misplaced.

[1] *Canning Practice and Control.* By Osman Jones, F.I.C., and T. W. Jones, B.Sc. Chapman and Hall, 25s.

[2] Information Circular No. 2. Issued gratis by the International Tin Research and Development Council, 378, Strand, W.C.2.

EGYPT AND THE DRUG TRAFFIC

In his annual report to the Egyptian Narcotics Bureau for 1936, T. W. Russell Pasha chronicles his continuous warfare against illicit traffickers in dangerous drugs. Two new branches of the Central Bureau have been opened at Tanta and Ayût; the destruction of flowering poppy-crops has been energetically pursued, and the arrest of persons trafficking in hashish and heroin vigorously proceeded with. The danger spot for international traffic in narcotics is Suez, where the door is wide open for smugglers. It is, according to Russell, through the Suez Canal that the bulk of heroin from Manchukuo finds its way to America. The report states "the fact is now beyond dispute that the world source of illicit white drugs is China north of the Wall and for some distance south of it." These areas are nominally under Japanese jurisdiction, but it appears that the trade in opium and heroin is an open business concern and is not considered to be illegal. It is alleged that ships' personnel and passengers can buy a kilo of heroin in Tientsin for 5,000 francs and sell it at Port Said and Suez to purchasers for 12,000 francs; these again dispose of it at great profit to themselves. The urgent need for better port control is stressed. Bumboatmen, cargo workers, etc., who await the arrival of ships, are potential smugglers. As there are some 400 or 500 vessels arriving every month, many of which are from suspect ports in China, India, and the Persian Gulf (three-fourths of which carry oriental crews), the peril of world-wide distribution of narcotics from this centre is evident. These facts, Russell urges, must be boldly stated at Geneva, and the co-operation of Great Britain, the United States, and other countries concerned sought for and secured if any real advance is to be made in the suppression of illicit traffic.

THE HALF-YEARLY INDEXES

The usual half-yearly indexes to the *Journal* and to the *Supplement* and *Epitome* have been prepared and will be ready shortly; they will, however, not be issued with all copies of the *Journal*, but only to those readers who ask for them. Any member or subscriber who wishes to have one or all of the indexes can obtain what he wants, post free, by sending a postcard notifying his desire to the Finance Department, British Medical Association House, Tavistock Square, W.C.1. Those wishing to receive the indexes regularly as published should intimate this.

ANAESTHESIA IN GENERAL PRACTICE

This is one of a series of articles, contributed by invitation

CHOICE OF ANAESTHETIC IN GENERAL PRACTICE

BY

HELEN LUKIS, M.D.

The choice of anaesthetic in general practice does not, of course, differ in essentials from the similar problem in hospital, and the main guides must be the nature of the operation, the idiosyncrasies of the patient, and the skill and individual preferences of the administrator. There are, however, certain difficulties, specific to general practice, which make some of the newer methods impracticable for the family doctor. The general nature of his work, which makes him a man who is expected to know something about everything, makes it impossible for him to know everything about any subject, and the mastery of a special technique may require more study, time, and experience than he is able to spare. He may not give an anaesthetic for several weeks on end, and then be called upon to give a series; at least 60 per cent. of his cases will consist of dental gases and minor operations, while 50 per cent. of the remainder will be emergency cases in which there are so many other details to arrange (it is not unusual for the doubtful acute abdomen and the surgeon to arrive at the nursing home together) that there is very little time for complications of anaesthetic technique.

Time is an all-important factor, because a day is not, unfortunately, infinitely elastic, and the one or two hours required for an operation can perhaps only be done by leaving undone something which ought to have been done; any technique, therefore, which necessitates prolonged preparation, visiting at a specified time beforehand, or an extension of operative time must be considered not only in relation to the patient but with regard to the needs of other sick people.

The general practitioner's close personal relationship to his patient makes it essential that he shall not use methods too experimental, too dangerous, or too unusual, while the peripatetic nature of his work makes portability a consideration. He lacks adequate storage space, so that bulk is undesirable, and his chronic lack of skilled assistance makes it important that the apparatus should not require elaborate upkeep; rust, the perishability of rubber, the insidious passage of time, and the limited space at his disposal make it necessary to exercise a rigorous economy over the apparatus he has to maintain. His ideal anaesthetic, therefore, should be 100 per cent. safe; easily portable; not so complicated that it takes time to assemble or requires prolonged pre-operative attention; not liable to be found out of order after three or four months' disuse; neither taking up too much room, nor requiring stores of spare parts, nor liable to run out in the middle of an operation; not too expensive, and as pleasant as possible to the patient. Bearing these considerations in mind, the actual choice of anaesthetic may be discussed under the headings: (1) local anaesthesia; and (2) general anaesthesia—non-inhalational and inhalational.

Local Anaesthesia

Local anaesthesia would appear to offer many advantages: the difficulty of obtaining a second doctor on, say, a fine Sunday makes any method which would enable one to operate single-handed in an emergency worthy of consideration.

Superficial local anaesthesia is achieved by spraying or plugging with the chosen solution, or by freezing. The former method is applied chiefly to the mucous membranes: it is the anaesthetic of choice in most ophthalmic operations, except glaucoma and excision, and in most nasal operations. It is possible in a fairly stoical adult to perform a myringotomy under 20 per cent. cocaine and adrenaline, while the application of novocain to a cut surface makes suturing almost painless if a fine needle is used. Anaesthesia from freezing is of so short a duration that it is only available for a limited number of operations, such as the incision of superficial abscesses.

Injections of novocain or allied substances have the advantages that the anaesthesia is of a longer duration than gas or ethyl chloride in minor operations, no second doctor is required, there are none of the pre- or post-operative problems connected with the unconscious patient, there is greater safety, and the addition of adrenaline makes the field of operation relatively bloodless. On the other hand there are certain disadvantages. Neurotic, frightened, or hysterical patients, and young children do not react well to the thought of consciousness during an operation; a considerable number of people show more or less serious idiosyncrasies; sepsis, which constitutes the greater part of the minor surgery of general practice, is a definite contraindication; and the range of anaesthesia is rather limited unless the drugs are used in great bulk (which presents problems of sterilization and skilled assistance) and by regional infiltration of the nerves supplying the part, which demands specialized anatomical knowledge which, to quote the national health insurance regulations, "general practitioners as a class cannot be expected to possess." The principal value of regional anaesthesia is in affections of the terminal phalanges (paronychia, whitlow, foreign body, etc.); the digital nerves can easily be blocked by 2 per cent. novocain injected at either side of the first phalanx at the level of the web between the fingers.

Böhler's method of reducing fractures by the injection of 20 to 40 c.cm. of 2 per cent. novocain into the haematoma is very tempting, but the difficulties of exact localization of the fracture and of sterilizing and keeping sterile such a large quantity of solution without a trained and skilled assistant are very great.

Spinal anaesthesia presents enormous difficulties to the occasional anaesthetist, who has so few opportunities of practising its technique, and should, in my opinion, be left entirely to the specialist.

Non-inhalational General Anaesthesia

Non-inhalational general anaesthesia may be administered rectally or intravenously. Rectal administration is, without question, one of the pleasantest ways of inducing narcosis; the drug can be given as a simple enema to an unknowing patient, who falls asleep and wakes up many hours later without any consciousness of having been operated upon. The method cannot be used in diseases of the rectum or anus, and may set up an acute colitis.

Avertin, the drug most commonly used, appears to come in safety between chloroform and ether. In doses guaranteed to produce surgical anaesthesia it is more dangerous, and it frequently, therefore, requires additional inhalation anaesthesia. The apparatus is bulky, breakable, and awkward to pack; it requires elaborate and somewhat complicated calculations of dosage, takes up a full hour of pre-operative time, and the patient requires four to twenty-four hours of close post-operative attention. It must be heated to 37° C. and not over 40° C., cannot be prepared more than an hour before the operation, nor, under general practice conditions, can its administration be left to an assistant: in short, it is an invaluable weapon in the hands of a specialist and a very dangerous one in those of the family doctor.

Intravenous anaesthesia is dramatically quick in onset; there is no mask or feeling of suffocation, and post-operative gastric and pulmonary complications are rare. Veins are hard to find in children, the fat, and shocked or exsanguinated cases, and the duration of both surgical anaesthesia and post-operative coma are very variable. Nembutal has been extensively used, but hardly seems safe enough for the family doctor. One drug, however—evipan sodium—is to the general practitioner what avertin is to the specialist. Used in the doses recommended for minor operations, when 10 c.cm. is rarely exceeded, this drug is almost 100 per cent. safe; its efficiency is only limited by the difficulties of intravenous medication; it is very pleasant to take, keeps well, and requires very little pre-operative time. The apparatus required is:

10 c.cm. syringe, kept sterile in ether.

Two intravenous needles, kept sterile in ether.

Package of evipan containing ampoules of the drug and distilled water.

A file.

A rubber catheter or tourniquet.

A small dressing, two swabs, a bandage.

A mouth prop or gag.

The ether can be used to sterilize the skin, and the needles will not rust as they do if kept in spirit.

The freshly made solution of the drug is injected slowly into the vein while the patient counts: when he stops the amount given is noted, and as much again is inserted.

Evipan produces an ideal anaesthesia for many of the minor operations of general practice, such as dental extractions, fractures, acute septic infections, etc., because the patient has one to two hours' post-operative sleep, which is very valuable in these painful conditions. There is often, however, a period of semi-intoxication, which makes the drug entirely unsuited for use in the consulting room or dentist's surgery.

Inhalational Anaesthesia

It will appear from the foregoing remarks that some kind of inhalational anaesthesia will be the general practitioner's choice in most cases, and the decision will rest between gas and ethyl chloride for short operations, and between gas and oxygen, chloroform, and ether for the more prolonged ones.

The advantages and disadvantages of nitrous oxide are too well known to need any discussion, but many do not realize the value of ethyl chloride for the minor operations of general practice. It is easily portable, gives an anaesthesia lasting about twice as long as that from a single dose of nitrous oxide, is so rapid in action that difficult patients such as struggling children are anaesthetized in a couple of breaths, and recovery is sufficiently rapid to make it suitable for consulting-room use. The most diverse opinions are held about its safety, but American authorities put the mortality at about 1 in 13,365 cases. It may be given on an open mask, when the dosage is difficult to control, but I prefer to give from 3 to 5 c.cm. in a closed bag. The face-piece is slowly approximated to the face while the child counts or talks, and anaesthesia usually supervenes without any struggling or distress. When the breathing becomes stertorous the face-piece is removed and the operation performed. Ethyl chloride is not suitable for continuous administration, and nearly all the fatalities have followed attempts to prolong the anaesthesia by giving supplementary doses.

Gas and oxygen is, of course, the ideal anaesthetic from one point of view, because it is the nearest approach to 100 per cent. safety we possess. It has unfortunately, however, great drawbacks. The apparatus is costly and bulky, liable to mechanical breakdowns, and requires constant and careful maintenance to keep it in working order. While many of us are fortunate enough to have the use of an apparatus at our cottage hospital, we are reduced to chloroform or ether for the majority of our cases outside.

If only chloroform were safe it would be the ideal anaesthetic for general practice. It is the most easily portable and least bulky of all the available drugs; it never fails to anaesthetize, is far more pleasant than ether, is non-inflammable, and gives a delightful, quiet, and uncongested sleep. Operations such as tonsillectomy and large-scale dental extractions, for example, which may be a shambles under ether, are a delight under chloroform. Nevertheless, the fact remains that figures collected by hundreds of different observers under all sorts of different conditions show that there is a steady mortality of 1 in 3,000 with this drug, and that this mortality tends to be of that most heartbreaking type—that is, the unexpected case—the apparently healthy young adult who snuffs out under some comparatively trivial operation such as circumcision or tonsillectomy.

Ether is probably rather more than twice as safe as chloroform. In addition, its victims are much more likely to be people who are bad anaesthetic risks, and whose death does not come as such a shocking tragedy, and for this reason it must remain the anaesthetic of choice for most cases. It has, however, one great and real drawback, which is its inflammability, and there will always be cases in which it cannot be used for this reason. In 208 recent confinements, for instance, there were only seven in which there was not a naked flame in the room. In forty-seven there were gas or electric fires, which could be turned out easily, and in 154 coal fires, at distances from the patient ranging from three to twelve feet. The lighting was by gas in twenty-seven instances, lamps in eleven, and candles, waved wildly by the midwife, in five. Under such conditions of lighting and heating it is a lucky general practitioner who will not have to have recourse at some times to the dangerous but very satisfying anaesthesia of chloroform.

My choice for the major operations of general practice is to induce with 5 drachms exactly of C_2E_2. A gamgee square with a large hole in the centre (a torn hole is much better than a cut one) is placed on the patient's face "to keep anything out of the eyes." The mask is held about three inches away, and the C_2E_2 is poured on drop by drop while the patient counts or talks. The mask is slowly approximated to the patient's face until it rests on the gamgee shortly before the 5 drachms of

mixture are exhausted. If the change to ether is then made slowly a smooth induction without coughing or struggling is nearly always achieved.

To sum up, then, the choice of anaesthetic in general practice will be along these lines.

Minor Operations.—Nitrous oxide, ethyl chloride, or local anaesthesia for surgery use. Evipan sodium for a patient in bed.

Major Operations.—Gas and oxygen in hospital, C_2E_3—ether sequence in general. Chloroform if close to naked flame.

NEW BLOCK AT ST. BARTHOLOMEW'S

OPENING BY QUEEN MARY

Queen Mary visited St. Bartholomew's Hospital on July 8 to open the new medical block, which is to be known as the "King George V Building," an erection of six floors, occupying the site of the old south block, with accommodation for 253 beds. The ceremony took place in a large marquee erected on one side of the hospital square adjoining the new building. Her Majesty was received on arrival by Lord Stanmore, treasurer of the hospital, the Earl of Strafford, senior almoner, and the Countess of Strafford, president of the hospital women's guild. Among those presented were Dr. Alexander Gow, senior physician, Mr. Harold Wilson, senior surgeon, Dr. George Graham, physician, Mr. W. Girling Ball, surgeon and dean of the medical college, and Miss Helen Dey, matron and superintendent of nursing.

After prayers by the Archdeacon of London, Lord Stanmore read an address recalling the history of the hospital, how for eight hundred years on that site, as its founder Rahere ordained, it had admitted the sick, the wounded, and women labouring with child. Just four hundred years ago, as a result of the Reformation, with the dissolution of the monastery whose canons, with sisters, had ministered to the spiritual and physical needs of the patients, the hospital was left almost derelict, whereupon the Mayor of London, Sir Richard Gresham, and the Aldermen and Commonalty presented a petition to Henry VIII, who in consequence refounded the institution and enabled the work of tending the sick poor to be resumed. During these last four hundred years the patients had been treated by physicians, surgeons, and nurses, whose work had added to the prestige of the hospital. Lord Stanmore recalled previous visits of Queen Mary. She had accompanied King George V in 1907 on the occasion of the opening of the out-patients' department, and in 1921 had laid the foundation stone of the nurses' home, which bore her name. (He might have added that she also came to the hospital in 1917 and distributed parcels to a number of patients who had been injured in an air raid in the locality.) He concluded by saying that the opening of this block of medical wards with the most modern equipment would enable the ancient hospital to retain the position it had always held in the forefront of the healing art and allow a larger number of patients to be treated in accordance with the highest ideals of modern medicine. The Queen then declared the new building open, and after the architect, Mr. T. A. Lodge, had been presented she proceeded to inspect the block, also visiting the British Red Cross library and the nurses' home

The New Medical Block

Each of five floors of the building (except the ground floor, which has slightly less accommodation) is divided into two units of twenty-five beds, each unit comprising a large ward of twenty-three beds and two single-bed wards. Attached to each unit also are sanitary rooms, ward kitchen, sisters' room, and linen room, and on each floor examination rooms, staff rooms, and rooms for various routine purposes. Each large ward is equipped with a sun balcony for beds facing south, and on the top of the building a solarium has been placed. The top floor contains an isolation unit of seven beds, also laboratories forming an extension of the Dunn laboratories built with the surgical block in 1930. There is also a lower ground floor with rest and common rooms for patients' friends, departments for cardiographic work, and a number of stores and offices. The equipment throughout is of the most modern type; particular attention has been given to the fittings, and as far as possible all cupboards have been built in. The building is considerably larger than the block it replaces, and careful planning has been necessary to secure maximum light and ventilation to the various rooms. The eighteenth century appearance of the hospital square, of which Bart's is legitimately proud, has been preserved by the use of Portland stone facings to the part of the building which adjoins the square, and as far as possible the old stone, used when the old building was constructed two hundred years ago, has been re-used for the purpose.

TRAVELLING FELLOWSHIPS IN TUBERCULOSIS

The Medical Research Council has awarded Dorothy Temple Cross Research Fellowships to the following candidates intending to study problems of tuberculosis at centres abroad during the academic year 1937–8:—

BRIAN CONNOR THOMPSON, M.D., Cantab., formerly Assistant Tuberculosis Officer, Durham County Council (renewal of present fellowship for three months).

RONALD HERBERT ROBERT BELSEY, M.B. Lond., F.R.C.S., Resident Surgical Officer, Hospital for Consumption and Diseases of the Chest, Brompton, London.

BRIAN MAURICE MAXWELL, M.D. Belf., Senior Assistant Medical Officer, Cheshire Joint Sanatorium, Market Drayton.

OSWALD SYDNEY TUBBS, B.Ch.Cantab., F.R.C.S., Chief Assistant to a Surgical Unit, St. Bartholomew's Hospital, London.

ENID MARY WILLIAMS, B.Sc., M.D., Wales, Assistant Lecturer in Tuberculosis, Welsh National School of Medicine, Cardiff.

The next annual meeting of the International Society of Medical Hydrology, which is open to non-members on payment of a fee of £1, will be held in Germany, at Frankfurt and the neighbouring spas, from October 17 to 22. The members of the Congress will be housed in Wiesbaden throughout, but the ceremonial opening meeting and first discussion will be held at Frankfurt. The other spas to be visited are Bad Nauheim and Bad Ems, at each of which meetings will be held, and a flying visit has been arranged to Schwalbach and Schlangenbad, on the way to Eltville, where a Rhineland vintage festival will take place. After the meeting there will be optional excursions to Kissingen, Heidelberg, Würzburg, Worms, Baden-Baden, and other places. The inclusive charge for accommodation and excursions during the meeting is RM. 85 (about £7); the party to travel from London on October 16. The subjects for discussion are (1) bioclimatology; (2) psychological factors of health resort practice (one of the openers being Dr. R. G. Gordon of Bath); and (3) natural history of peloids (moors and muds). There will also be demonstrations of laboratory and experimental work. All information may be had from the I.S.M.H., 109, Kingsway, London, W.C.2.

NEW TRAINING COLLEGE FOR CRIPPLES

THE STANMORE ENTERPRISE

A college for the training of crippled lads in useful trades has been established in association with the Royal National Orthopaedic Hospital in the ample grounds of the country branch of that institution at Stanmore. The college is to be formally opened during the present month (July) on the completion of the building, but in fact it has been functioning, though not to its full capacity, for the greater part of a year.

In this woodland country of Middlesex a very pleasing group of buildings has been put up, the lay-out of which is difficult to convey in a photograph, where one hundred male cripples between the ages of 16 and 22 will be given a chance, despite their physical disabilities, of going out into the world as self-supporting individuals. The single-story buildings, including the dormitories, have been arranged in the form of a wide arc so as to secure the maximum sunshine and air. In spite of the fact that the building is on sloping ground, there is not one step which the cripple has to mind.

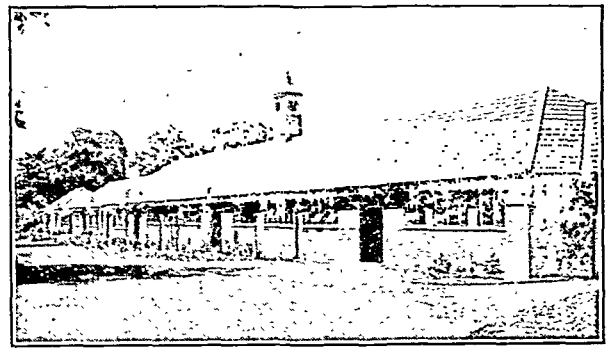


FIG. 1.—The Cripples' Training College, Stanmore.

Although it is controlled by the hospital committee and enjoys some of the hospital services, the college is quite separate from the hospital. But it must be considered a significant extension of the hospital idea that the care for the disabled should include not only their physical compensation as far as that may be possible, but the provision of training for a craft which will enable them on final discharge to meet life more or less on equal terms. The college is a new undertaking so far as the Royal National Orthopaedic Hospital is concerned, but it really continues the work of the Home for Crippled Boys, Woolsthorpe House, Wright's Lane, Kensington, which was founded in 1865 to board and lodge cripples and teach them a trade. The hospital took over this institution, with the boys actually in training, and these boys, numbering forty-eight, have formed the nucleus of the Stanmore college, which now that it is completed will accommodate 100. The cost of the new buildings has amounted to nearly £70,000.



FIG. 2.—At work in the boot-making shop.

The Course of Training

The college is approved by the Board of Education, which has authorized local authorities to pay £90 per annum for each trainee, with entitlement to the 50 per cent. grant made by the Board. The boys are generally sent to the college by local authorities or social or philanthropic organizations. In very exceptional cases they may be admitted slightly below the age of 16, but that is not favoured. The course of training covers a minimum period of three years.

The trades taught, all under expert instruction, are boot-making (surgical and ordinary) with repairs; mattress-making and upholstery; painting and sign-writing; general woodwork and cabinet-making; tailoring; and watch and clock repairing. Other trades may be included as the organization develops. A whole-time schoolmaster is employed, and the lads in classes all have an hour's general education a day. The hours of work or instruction are from 9 to 5, with an hour's interval, and then the lads are free of restraint, except that they are expected to be in by a certain hour.

Accommodation and Resources

A tour of the college proved this to be one of the pleasantest places of the kind we have ever visited. Indeed, the only drawback is that the working and domestic conditions are so cheerful and healthy that when the students eventually go out into workshops less clean and spacious and orderly, and into lodgings lacking these refinements and amenities, they will be aware of an unpleasant change in their circumstances. Nowhere is there any institutional atmosphere. The dining hall, with the flowers on its tables, would do credit to a good-class hotel. There is a recreation room, with provision for table tennis, billiards, and other games, a quiet room where even the wireless is prohibited, and a concert hall of quite surprising size, equipped with stage and accessories. The dormitories, one of them constructed with specially large open windows for lads with a tuberculous tendency, have been arranged on the most modern hygienic principles, and there is also a self-contained sick bay with six beds for cases of temporary illness; any cases of serious illness are of course sent away to hospital. There is also ample bathing provision, and some of the baths have been so designed as to facilitate lads with certain deformities getting in and out. Outdoor sports are encouraged, and the football team is by all accounts quite formidable to its opponents. A scouts troop is well supported, and amateur dramatic and debating societies have discovered much hidden talent. The first copy of the stencilled college magazine, entitled *The Trainee*, entirely produced by the pupils themselves, is a remarkable production. As for the workshops themselves, these seemed to be, from the point of view of light and hygiene and convenience, model establishments under the Factories Acts. Although the disability in the case of some of those at work was obvious, many others were working in such positions that apart from close inspection they would have been taken as physically normal.

Organization

As already stated, the fee paid on behalf of each trainee is about £90 per annum, exclusive of certain extras which have to be paid by the responsible authority, such as the payment of the trainee's fare home for two periods of holiday in the year, also the provision and repair of any surgical boots or appliances, dental plates, and spectacles, as may be found necessary, and an outfit of clothing sufficient for use for twelve months after admission. The boys on entry are examined by the college medical officer as to their suitability for training, and a probation period of three months has to be completed to the satisfaction of the general managers. The college does not guarantee to get the lads jobs when they leave, but of course every effort is made to do so, and a careful register of the after-history is kept. Out of eleven recent departures nine of the boys taken over from the Wright's Lane home had already got jobs.

In the organization and opening of the workshops the college authorities have had the advantage of the help of Mr. J. Rhaiadr Jones, of the Derwen Cripples Training College, Oswestry, founded by Dame Agnes Hunt ten years ago for cripples of both sexes, and Mr. Jones is the honorary consulting superintendent of the Stanmore college, so that the Shropshire experience is available for the Middlesex venture. Dr. C. W. Durward, assistant resident medical superintendent of the country branch of the Royal National Orthopaedic Hospital, is the medical officer of the college, and Miss Williams, matron of the hospital, its lady superintendent. The college is also fortunate in its general manager, Capt. E. K. Wood, lately of the Indian Army, whose vigour and enterprise are evidently felt in every part of the undertaking.

BEIT MEMORIAL TRUST FOR MEDICAL RESEARCH

A meeting of the trustees of the Beit Memorial Fellowships for Medical Research was held on July 9 for the election of Fellows and other business. Deep regret was expressed at the death of Sir Edwin Deller, who since 1929 had given important help in his *ex officio* trusteeship as Principal of the University of London. He is succeeded in this *ex officio* appointment by the new Principal, Mr. Herbert L. Eason. The trustees noted with pleasure the distinctions received by two members of the Advisory Board during the past year: Professor J. C. G. Ledingham's knighthood, and the award to Sir Henry Dale of a Nobel prize for medicine. The honours gained by past Fellows include the K.C.B. granted to the present secretary of the Medical Research Council, Edward Mellanby, and J. McMichael's election to the Johnston and Lawrence Research Fellowship of the Royal Society.

Election of New Fellows

The total number of Fellowships held by full-time workers during the year 1936–7 remained unchanged at twenty-four.

The following elections were made:

Fourth Year Fellowships (value £500 per annum).—Robert Percival Cook, B.Sc., Ph.D. To continue his research on cholesterol metabolism in reference to the cause of atheroma in blood vessels (Institute of Biochemistry, University of Cambridge). Stuart Lawson Cowan, B.Sc. To continue his research on the neuro-muscular transmission of nervous excitation (Department of Pharmacology, University College, London). David Ezra Green, M.Sc., Ph.D. To continue his studies on intracellular enzymes and on the influence of vitamin B on oxidation processes (Institute of Biochemistry, University of Cambridge). Maurice Jowett, D.Sc., Ph.D. To continue his study of the action of narcotic drugs on the metabolism of the central nervous system (Biochemical Laboratory, Cardiff City Mental Hos. ital).

Junior Fellowships (normal value £400 per annum).—Ian Alfred Anderson, B.Sc., M.B., B.S. Proposed research: iron analyses of diets of women of the poorer classes at Aberdeen, and studies on the treatment of anaemia (Metabolic Research Laboratory, Aberdeen Royal Infirmary). Desmond Beall, B.A., Ph.D. Proposed research: sterol metabolism, with special reference to sex hormones (Department of Pathology, British Postgraduate Medical School, Hammersmith). James Gowans Chalmers, B.Sc. Proposed research: the role of polycyclic hydrocarbons in experimental tumour production (Glasgow Royal Cancer Hospital). Frederick Colin Courtice, B.Sc., D.Phil. Proposed research: the influence of insulin and endocrine secretions on the metabolism of prolonged muscular exercise (Physiology Laboratory, University of Oxford). Hugh Davson, B.Sc. Proposed research: the cause of primary chronic glaucoma of the eye (Department of Physiology and Biochemistry, University College, London). Thaddeus Rudolph Robert Mann, M.D., Ph.D. Proposed research: on intracellular compounds of blood pigment and the metabolism of oxalic acid in mammalian tissues (Molteno Institute, University of Cambridge). Antoinette Pirie, Ph.D. Proposed research: the metabolism of filterable organisms by analysis of their enzyme systems (Institute of Biochemistry, University of Cambridge). Derek Richter, B.Sc., D.Phil. Proposed reseach: the action of adrenaline and related substances on the metabolism of individual organs (Institute of Biochemistry, University of Cambridge).

All correspondence of Fellows and candidates should be addressed to Professor T. R. Elliott, M.D., F.R.S., honorary secretary, Beit Memorial Fellowships, University College Hospital Medical School, University Street, W.C.1.

Reports of Societies

OVARIAN EXTROVERSION

At a meeting of the North of England Obstetrical and Gynaecological Society held in Newcastle-upon-Tyne on June 11, with the president, Dr. J. W. BRIDE, in the chair, Dr. K. V. BAILEY read a further note on the operation of ovarian extroversion.

Dr. Bailey said that he had read his original communication on this subject to the North of England Obstetrical and Gynaecological Society in February, 1936. He had delayed setting down his conclusions until now because of two points raised at the time—namely, the advisability of carrying out a laparotomy which was not a surgical necessity, and the lack of proof of ovulation following operation even in the successful cases. He briefly outlined again the technique of his operation. A laparotomy was performed, and a wedge, having its base at the periphery, was excised sagitally from the cystic ovary. The apex of the wedge was carried down to the region of the hilum. Sutures were then passed through the ovary in such a way as to turn the cut edges of the ovary partially inside out.

In his series of seventeen cases thirteen showed a successful result by the establishment of regular menstruation immediately following the operation, and there were four failures. Most observers would agree that in the present state of our knowledge only temporary results were likely to be achieved by endocrine injections. In spite of the unscientific optimism which had replaced unreasonable scepticism with regard to endocrine treatment, he believed that it should be tried in all cases at first. When it had failed he thought that the operation of extroversion of the ovaries should be carried out, provided the patient realized that a successful result could not be guaranteed.

Proof of Ovulation

The regularity with which menstruation had followed operation in the majority of his cases strongly suggested ovulation from ovaries which certainly showed no recent or remote evidence of this at the operation. Proof of this fact, however, was not forthcoming in this series until

recently, when his third case, which had had two and a quarter years' amenorrhoea and in which there was no trace of a corpus luteum in either ovary at operation, became pregnant seven months ago. In this case regular menstruation began five weeks after operation, and continued without endocrine assistance at regular intervals of four to five weeks for two years until the advent of the present pregnancy. Ovulation, therefore, had taken place recently, and it seemed fair to assume that ovulation had occurred on other occasions since the operation. Some regular stimulus to menstruation had been present in this case (as in the other successful cases of the series) which had not been present before the operation. In his opinion this stimulus was ovulation, which could not, of course, be proved in any case unless pregnancy took place.

Dr. Bailey said that, while recognizing the inadvisability of performing a laparotomy without a thorough trial of general and endocrine treatment, he would definitely assert that this operation was justifiable both with the object of restoring normal menstruation and also improving the prospects of pregnancy, provided that all concerned were aware that a successful result could only be expected in 75 per cent. of cases.

Discussion

The PRESIDENT (Dr. Bride) said that Dr. Bailey had cleared up many of the points which were not clear in his previous communication. Mr. HARVEY EVERS (Newcastle) said that in his experience cystic ovaries were rare in secondary amenorrhoea. He mentioned a case where a whole year of endocrine therapy was necessary to produce a period. Almost at once the patient then became pregnant, and a year after the first confinement she had another baby. Dr. J. W. A. Hunter (Manchester) congratulated Dr. Bailey. He thought it disappointing that a surgical method could produce better results than endocrine treatment. He asked whether Dr. Bailey's cases were due to pituitary or to ovarian deficiency. He could not see how an ovarian operation could affect a pituitary deficiency. He asked whether any of Dr. Bailey's cases had developed dysmenorrhoea, and whether the basal metabolic rate had been taken. He thought it would be useful if such cases could be thoroughly investigated before and after the operation.

Dr. BAILEY, in reply to the president, said that the risk of the operation was small, with little bleeding at the time. He always investigated for adhesions subsequently. In his series he could feel—in most cases—cystic ovaries. The basal metabolic rate had not been estimated and examination of the endometrium had not been carried out, as all but two of this series were operated on before the publication of Kauffman's paper on the endocrine treatment of this condition. In his opinion most cases of secondary amenorrhoea were due to primary ovarian deficiency, or insensitivity of the ovary or uterus to pituitary stimuli. He agreed with Dr. Hunter about the indiscriminate application of this operation; that was why he had been sixteen months considering his cases before reading his second paper. He said that the operation should not be done except as a last resort.

Dr. WILLIAM HUNTER (Newcastle) read a short paper on two cases of rupture of the uterus and two cases of prolapse of the umbilical cord. Mr. BRYAN WILLIAMS (Liverpool) read a note on the use of prontosil in obstetrics. Mr. T. F. TODD (Manchester) discussed the relief of pain in pelvic malignancy, with special reference to the intrathecal injection of alcohol. Finally Professor FARQUHAR MURRAY read a paper on the evolution of the emergency service.

Professor Jacques Parisot of Nancy and member of the Conseil Supérieur d'Hygiène de France has been elected chairman of the Health Committee of the League of Nations in the place of Dr. Madsen of Copenhagen.

OXFORD OPHTHALMOLOGICAL CONGRESS

The Problem of Myopia

With the Master, Mr. C. G. RUSS WOOD (Oxford) in the chair, the twenty-sixth annual meeting of the Oxford Ophthalmological Congress took place on July 8 to 10 at Keble College, when a discussion on the problem of myopia was opened by Mr. N. BISHOP HARMAN and Mr. ARNOLD SORSBY.

Mr. Bishop Harman said that the myopic eye was a diseased structure, and this disease, which began in childhood, was caused and influenced by environmental factors. The school was responsible for its development in the first place, and close work later in life for the breakdown that myopes experienced. The greater incidence of myopia in girls (who did much fine work) than in boys, the effect of debilitating conditions in precipitating myopia, the significance of astigmatism as a half-way house to myopia, the greater incidence of visual defect in the poorer sections of the community, all tended to emphasize the significance of environmental factors. Evidence from Sweden showed that the introduction of an advanced system of school hygiene had reduced the incidence of myopia in that country. Mr. Bishop Harman could see little support for the theory of heredity as the determining factor in the development of myopia. In his own statistics of high myopes no family history of myopia could be obtained in 67 per cent. The incidence of the breakdown that myopes experienced in later life had a direct relation to the degree of myopia. Myopia was responsible for 3.6 per cent. of blindness in children and for a much heavier percentage in adults. The myope schools had their justification in providing for the myopic child an education from which it could benefit and which prepared it for later life.

Mr. Sorsby said that Mr. Bishop Harman's finding of a family history in 33 per cent. of his cases of high myopia was more significant than his failure to obtain such a history in 67 per cent., for it supported the view that myopia was a recessive character. The belief that myopia was caused and aggravated by environmental conditions was part of the mechanistic theories of the last century, which saw the myopic eye as an elongated structure and searched for mechanical factors to explain that elongation. Yet axial elongation as the cause of low and medium myopia had never been satisfactorily proved, and recent work by Tron seriously challenged that conception. There was no valid reason for regarding most myopia as pathological. The biomathematical approach denied the emmetropic eye as an ideal; departures from it either in the hypermetropic or myopic direction were to be regarded as biological variants. Such a conception had to face the difficulty that myopes on this distribution were in excess of the theoretical incidence. This excess was to be regarded as representing pathological myopia. The fundus lesions in myopia were not always present, even in high myopia; and the possibility of these being linked with pathological and hereditary myopia only had to be considered. That it was the pathological myope only who showed the myopic fundus changes was supported by the reports on the familial incidence of retinal detachment in myopia.

In the discussion that followed Mr. T. HENDERSON (Nottingham) argued for myopia as a stigma of constitutional weakness; Mr. WILLIAMSON-NOBLE suggested that refractive errors and eye colour tended to be inherited together; Mr. R. BEATSON HIRD (Birmingham) drew attention to adrenaline in the treatment of myopia; Mr. T. HARRISON BUTLER (Birmingham) stressed the hereditary basis of anisometropia; and Sir ARNOLD LAWSON described the symptoms of incipient progression in myopia.

Hormones and Vitamins in Ophthalmology

A paper by Sir WALTER LANGDON-BROWN on hormones and vitamins in ophthalmology critically reviewed the

present state of knowledge in these fields. Vitamin A, which was responsible for the power of the normal epithelium in withstanding infection, but had proved powerless in combating the infection itself, had now been proved a chemical organizer, for faulty development of the eyes was seen in the young of a sow deprived of vitamin A. Vitamin B_2 had been shown as responsible for a form of retrobulbar neuritis, and vitamin D played an important part in hypocalcaemia with zonular cataract. Of the ductless glands the pineal body and the pituitary had pressure effects in disease, the pituitary further influencing the eye through the thyrotropic hormone of the pars anterior, which is responsible for exophthalmos, particularly the paradoxical type seen after thyroidectomy. The ophthalmoplegia of exophthalmos was possibly also of thyrotropic origin. The adrenals played as doubtful a part in glaucoma as did the gonads in retinitis pigmentosa. A host of obscure lesions with ocular signs such as fragilitas ossium, the Laurence-Moon-Biedl syndrome, arachnodactyly, osteitis deformans, were also regarded as of endocrine origin on inconclusive evidence. The ocular lesions in diabetes were more definite, though there were difficulties in recognizing some of them clearly as diabetic. Temporary ophthalmoplegia did not seem to be so frequently seen now as in the pre-insulin days. A point of importance in the development of diabetic lesions was to recognize the change in the dietetics of diabetes that insulin had brought about.

Night Blindness

The Doyne Memorial Lecture this year, on "Night Blindness in Eye Diseases—Suggestions and Speculations," was read on behalf of the late Dr. DAVID J. WOOD (Capetown) by Dr. R. C. J. MEYER (Johannesburg), who first paid an eloquent tribute in memory of his colleague. Laying stress upon the histology of the pigment epithelium, the photo-chemical changes in the rods and cones, and the significance of vitamin A deficiency as the cause of epidemic night-blindness, the argument developed to bring out the significance of an intracellular enzyme as the initiator of the changes which lead to the building up of visual purple from vitamin A. A defect of this intracellular enzyme was to be regarded as one of the inborn errors of metabolism. It was possible that the same enzyme produced pigment pre-natally and metabolized visual purple post-natally. The reported treatment of retinitis pigmentosa by carotene, the precursor of vitamin A, was but one indication of the possibilities which must await a fuller understanding of the chemical processes involved.

Other Papers

Among other papers read at the Congress there was a profusely illustrated discourse on plastic surgery of the eyelids by Professor JOSEPH IMRE (Budapest), and an account by Dr. J. DALLOS (Budapest) on the principles underlying the fitting of contact lenses so that they could be tolerated for practically constant wear. Dr. A. J. BEDDELL (Albany, N.Y.) showed a series of highly successful colour photographs of the fundus oculi, and Mr. TUDOR THOMAS (Cardiff) described two modifications in the technique of corneal grafting, one being the discontinuance of the use of oil for the reception of the graft, and the other a new method of tying the sutures holding the graft in position.

The first *Catalogue of British Medical Films*, published by the British Film Institute and noted in these columns (February 22, 1936, p. 378) listed some four hundred films. A *Supplementary Catalogue* has now been issued in which details are given of about a hundred further films. They are classified and described under general headings, and there is in addition a subject index. The number and variety of purely medical and surgical films catalogued gives some indication of the rapid extension of this branch of cinematography within recent years.

Local News

INDIA

Proposed India League of Health

Lord Horder gave a luncheon party last week at Claridge's Hotel, London, to meet the High Commissioner for India (Sir Firoz Khan Noon) and representatives of the Councils of the People's League of Health to commend a project for the establishment of an All-India League of Health on lines analogous to the organization in Great Britain. The possibility of placing at the disposal of the people of India the knowledge gathered and co-ordinated by the People's League of Health, said Lord Horder, was first mooted in 1925, when Major-General J. B. Smith, then Medical Adviser to the Secretary of State for India, expressed the view that such a body would be of much value to the Indian Empire. The present time was felt to be an opportune one to explore the possibilities of establishing a sister body in India which might collaborate with the League in making the people of the Indian Empire "health-conscious," and thereby the better able to fulfil the duties of citizenship which were now being entrusted to them. Although the League had the sympathy and encouragement of the Minister of Health and of other Government Departments, it was a voluntary body. In a highly individualized society there existed a mass of expert knowledge, resident in trained and responsible men and women, which needed mobilizing in the interest of the community. To do this and to make this knowledge available for the people by the way of health education was the work of the League. "We venture to think that a similar body, having similar functions, may be of equal service to the people of India." Brief speeches were then made on different aspects of the work of the League by Dr. C. O. Hawthorne, its chairman of council; Dr. P. Manson-Bahr, who spoke on the triumphs of tropical medicine; Professor J. C. Drummond and Dr. Harriette Chick, who spoke on nutrition; Sir Frederick Hobday, who explained the importance of the work done by the veterinary council of the League; and Professor James Young, who described an investigation now taking place under the League's auspices on the nutrition of expectant and nursing mothers. The High Commissioner congratulated the League on having a worker like Miss Nethersole. India, he said, had reached a stage where she was able to co-operate in matters of public health and medical research with scientists in this country for the benefit of her own people. He mentioned various achievements which had already taken place, notably the elimination of cholera from the Punjab. The great difficulty was the poverty of the people. The urgency and importance of health problems was very much in the minds of the legislators; they were doing their utmost to solve them as far as finances allowed, and they would be indeed grateful for the offer of expert help which was now being made.

On the motion of Lord Horder a resolution was carried to the effect that the time had arrived when an appeal should be made to the people of India, with the sympathy of the Indian Ministries of Health and other social organizations, to co-ordinate the health work already being done in India on an all-India basis under an Indian League of Health on the lines of the People's League of Health in Great Britain. A further resolution requested the High Commissioner to convey to the authorities the offer of the People's League of Health to place at the service of India the combined knowledge of its Medical, Science, and Veterinary Councils as also its co-operation in every respect, to make the Indian League of Health a success.

The Kashmir Mission Hospital

In 1936 the Church Missionary Hospital in Kashmir received 2,383 in-patients; there were 3,976 surgical operations and the attendances totalled 39,500. Entropion and trichiasis have much decreased during recent years, probably in consequence of patients coming for treatment more readily in the early stages of trachoma. The reduced incidence in the case of this hospital is also partly explained by the greater number now of State dispensaries for these patients. There were fewer cases of kangri-burn epithelioma, and the reason given in the annual report for 1937 of this institution is that dress reform in Kashmir has led to the superseding of a loose garment resembling a night-shirt by a closer-fitting coat, waistcoat, and shirt, which prevent the krangi from being hugged close to the skin, at any rate in the daytime. Heart disease, more especially involving the mitral valve, is still common, and there are more cases of incompetence than of stenosis. Massive doses of digitalis sometimes proved to be dramatically effective. Cases of bone disease were also common, and caused difficulties of accommodation owing to the usually long in-patient treatment generally necessitated. These patients had had long periods of treatment with ointments by unqualified native practitioners, and very often sequestra had to be removed or amputation be performed. Financial difficulties, owing in some cases to temporary and non-recurring emergencies, have been considerable this last year, and Dr. E. F. Neve appeals for increased assistance for this hospital, which was one of the first in India to adopt Listerian antisepsis wholeheartedly. Situated outside the city of Srinagar, there is a great influx of poverty-stricken patients from the whole of Kashmir.

ENGLAND AND WALES

Qualifications of Coroners

The London County Council, which for many years has made a practice of appointing as coroners only persons with a double qualification, both legal and medical, has decided to fall in with the recommendation of the Departmental Committee that in future only solicitors or barristers should be appointed as coroners, but that whenever possible they should have had experience as deputy coroners. Before making a recommendation to this effect the Public Control Committee of the Council received representations from the British Medical Association against the proposal, and subsequently heard the views of deputations from the Association, the General Medical Council, the Law Society, and the General Council of the Bar. The Public Control Committee reported that in its view there was no doubt that the past practice of the Council of requiring both a legal and a medical qualification had restricted the field of candidates. In 1919, when candidates were required to possess only one or other of the prescribed qualifications, there were forty-three applications. On the basis of the dual qualification this number was reduced to twenty, fourteen, and sixteen respectively on the occurrence of the three succeeding vacancies. Apart from this, it was felt that regard must be had to the findings of the Departmental Committee in this respect, "and the representations made to us by the British Medical Association on the subject have not changed our view." Section I of the Coroners (Amendment) Act, 1926, stipulates that no person shall be qualified to be appointed a county coroner unless he is a barrister, solicitor, or legally qualified medical practitioner, of not less than five years' standing in his profession, provided that no person who has been a franchise coroner or a deputy to a county or borough coroner shall by reason of this provision be disqualified from being appointed to be a county or borough coroner. The resolution as adopted by the Council states that no person shall be eligible for appointment as coroner in the County of London unless he is a barrister or solicitor or possesses one of the qualifications required by the above section, and that in the choice of persons for such appointments due weight shall be given to experience as deputy coroners and to the possession of a knowledge of forensic medicine. It is pointed out that effect has already been given by the Council to many of the recommendations in the Departmental Committee's report. For example, with regard to the recommendation that post-mortem examinations ordered by coroners should be made by special pathologists, for many years past a panel containing the names of skilled pathologists has been kept by the Council for the use of coroners. Provision is contained in the schedule of fees made by the Council for fees not exceeding seven guineas to be paid to expert pathologists and toxicologists for special examinations in response to requests made by coroners. The schedule also makes provision for the payment of a fee of half a guinea to a medical practitioner who attended the deceased and from whom the coroner asks for a report.

The Health Congress in Birmingham

Representatives from all parts of the world have assembled in Birmingham this week for the health congress held there by the Royal Sanitary Institute. The delegates include representatives from China, Colombia, Germany, Guatemala, Iran, Liberia, Luxembourg, Rumania, Siam, and the United States of America, and from practically every British Dominion and Colony. Delegates have also been appointed by a large number of local authorities, Government Departments, and learned societies in Great Britain. The president, Lord Dudley, gave his inaugural address on Monday, and the Minister of Health, Sir Kingsley Wood, addressed a general session on Tuesday. Sir Arthur MacNalty, Chief Medical Officer of the Ministry of Health, is the president of the Preventive Medicine Section, in which the development of the maternity service has been discussed. Mr. Geoffrey Shakespeare, M.P., has addressed the Section of Maternity, Child Welfare, and School Hygiene, which discussed on Thursday the care of the pre-school child. Papers dealing with meat inspection and the protection of the milk supply have been discussed in the Veterinary Hygiene Section. In addition there are Sections on National Health Insurance, Hygiene in Industry, and Sewage Disposal, and also a Section on Tropical Hygiene for the visitors from over-seas.

West London Medico-Chirurgical Society

The fifty-fifth annual dinner of the West London Medico-Chirurgical Society was held at the Trocadero Restaurant on July 7, under the presidency of Mr. Neil Sinclair. In proposing the toast of "The Society," Sir Gervais Rentoul, K.C., pointed out that the area of his jurisdiction covered West London, and therefore his contacts with members of the Society were many. He drew an amusing distinction between the doctor, who in public was always praised, and the lawyer, who was always reviled, suggesting mildly that in private the reverse might hold. He paid a tribute to the Society for the way in which it had helped to maintain "the high standards of a very great profession." In responding to the toast, Mr. Neil Sinclair sketched briefly the progress made during the year. There was a record number of new members, the Society had moved into its new headquarters, a large number of meetings had been held, and a particularly successful Cavendish lecture had been delivered by Sir Walter Langdon-Brown. The president conveyed the thanks of the Society to the honorary secretaries, Dr. W. K. McKinstry and Mr. A. Simpson-Smith, for the work they had done. In proposing the toast of "The Guests and Kindred Societies," Mr. V. B. Green-Armytage mentioned the many distinguished medical societies represented there by their presidents, and he made a special reference to the late Sir Squire Sprigge, who, he said, was once an honoured

member of the West London Medico-Chirurgical Society. In replying, Sir Walter Langdon-Brown discussed the work of Henry Cavendish, which had been described as a triumph of the third place of decimals, particularly from the point of view of the part played by imagination in scientific medicine. Sir William Willcox, president of the Medical Society of London, who also responded on behalf of the guests, paid a further tribute to the West London Medico-Chirurgical Society, which, he said, was fortunate in having among its members so many general practitioners.

Silicosis in Miners and Quarrymen

The Medical Research Council's Committee on Pulmonary Diseases is planning a comprehensive investigation of the incidence of silicosis and other pulmonary diseases in miners. The executive council of the South Wales Miners' Federation has agreed to co-operate in the inquiry, which will involve the medical and radiological examination of a large number of men employed at selected collieries. At the same time a clinic established last year by the King Edward VII Welsh National Memorial Association is continuing work on the prevalence of silicosis and tuberculosis among the quarry workers at Blaenau Festiniog. In an interview reported in the *Manchester Guardian* Dr. J. W. Morris, medical officer of health for this area, suggested that since the adoption of rock drilling by compressed air machinery underground the number of quarrymen suffering from silicosis had substantially increased. The men engaged on this work were supplied with masks, but he thought that they did not all wear them. For reducing the prevalence of silicosis among these workers he thought that a better system of ventilation was necessary to draw the dust from the rock-face, and the wearing of masks should be made compulsory.

Health of the Port of London

On Saturday, July 10, a number of medical men were entertained by Mr. Alfred Robertson, chairman of the Port of London Health Committee of the Corporation of the City of London, on board the Port of London Authority's steam yacht *St. Katharine*. The members of the committee and guests assembled at Tower Pier and embarked at 10 a.m., and had a most interesting trip to the lower reaches of the Thames, arriving at Gravesend in time for a luncheon party on board. Dr. P. G. Stock, proposing the toast of the Lord Mayor and Corporation, said that few people realized the magnitude and efficiency of the organization of the Port of London health service. Alderman Sir John Laurie, in reply, acknowledged the support given by the Ministry of Health in this work, and said that the motto of the committee was "Deeds, not Words." Mr. Fred Whittingham expressed thanks to the Port of London Authority for its courtesy in lending the yacht for this annual inspection, and Mr. A. Binns, chief engineer, replied on behalf of the P.L.A. Mr. Alfred Robertson proposed a comprehensive toast to his guests, coupling with it the names of Mr. E. G. Culpin of the L.C.C., Sir Robert Stanton Woods, and the Mayor of Gravesend. Sir Robert expressed his admiration for the smooth running of all the work of the City Corporation, and in particular for its wonderful sanitary organization which kept the biggest port in the world free from disease. The speeches ended with a very warm tribute to Mr. Robertson from his predecessor in the chair of the Port Health Committee, who described him as essentially a practical man; and the chairman thanked Dr. C. F. White, M.O.H. for the Port of London, for all he had done to make the day's work and pleasure a success. The company then went on board the hulk *Hygeia*, from which all incoming vessels are inspected by the port medical staff, and spent an hour ashore at the isolation hospital at Denton, returning to Tower Bridge by river in the *St. Katharine*.

Testimonial to Dr. F. W. Eurich

After being in practice as a consulting physician for over thirty years and for twenty-four years professor of medical jurisprudence at Leeds University, Dr. F. W. Eurich has intimated his intention to retire from practice. The very large number of colleagues who, during the long period of Dr. Eurich's work have sought his aid in the treatment of their patients, including in many cases themselves and their relatives, wish to give some small indication of the great esteem in which he is held by all who know him. It is proposed that subscriptions, limited to one guinea, should be invited from all medical practitioners who have been associated with Dr. Eurich, and it is intended to present this token of esteem at a dinner to be held at 8 p.m. on Wednesday, September 29, at the Midland Hotel, Bradford. (Charge 10s. 6d. exclusive of wines.) Any medical practitioner wishing to subscribe to the testimonial or be present at the dinner is invited to send a remittance to Dr. F. E. Chester Williams, hon. secretary, Bradford Medico-Chirurgical Society, or Dr. Geoffrey Priestman, hon. secretary, Bradford Division, British Medical Association.

SCOTLAND

Health Problems of Edinburgh

The annual report by Dr. John Guy, medical officer of health for the city of Edinburgh, shows that the death rate in Edinburgh for 1936 was 13.4 per 1,000, an increase over the 15.3 of 1935. The report refers to the average death rate for the preceding five years. Births had numbered 7,391, or 15.9 per 1,000, which was an increase over the 15.3 of 1935. The report refers to the difficulty experienced in staffing the general municipal hospitals, which had retarded any effort to shorten the hours of duty of the existing staff. This difficulty applied particularly to the staffing of hospitals for chronic sick patients, but was a common experience of all the hospitals in the country. Attention is drawn to the fact that the actual number of females in the 20–25 years age group of the population has diminished, and this is suggested as a partial explanation of the difficulty in obtaining probationer nurses. The importance of mental examination of delinquent children is emphasized in the report, which points out that no legal provision exists for the mentally defective child under the age of 5 years, and while most of these are best treated in their own home, there is a proportion for whom some form of institutional care is imperative. Accordingly, the Public Health Committee has set aside in Gogarburn institution a block of twenty cots to which uncertified children may be admitted.

At a meeting of the Public Health Committee of Edinburgh Town Council on July 1 a proposal was made to abolish fees for treatment in the municipal general hospitals, but it was decided to continue charging those patients who were able to pay. One speaker said that while the English Act of 1929 compelled municipal hospitals to charge, in Scotland the provision was that they might charge patients. In Edinburgh they had resolved that if a patient could pay he would be expected to do so, but that the limit charge would be 25s. per week. There was a waiting list of 3,000 for the Royal Infirmary, of whom 1,000 were Edinburgh ratepayers entitled to claim admission to a municipal general hospital. The provision of a new hospital for this number of persons would add 1s. 1d. to the rates in the £1. It would, further, have the effect of hindering not of helping the voluntary hospital. The remedy, in the speaker's view, was that the spirit of the Local Government Act should be applied in the treatment of sick poor, and all admissions to

hospitals from the Public Assistance Department should be transferred to the Public Health Department, so that these people would be treated as sick persons and not as paupers.

St. Andrews University

At the graduation ceremony of St. Andrews University on June 30 thirty-four graduands received the degrees of M.B., Ch.B., and two that of M.D. The degree of LL.D. was conferred, among others, upon Angus Macgillivray, M.D., D.Sc., and Professor A. Blyth Webster, in presenting him for the degree, said that he was a graduate of Aberdeen and had been reader in ophthalmology at the University of St. Andrews, while as assessor on the University Court since 1921 he had taken a great interest in the work of the University. The principal, Sir James Irvine, in an address to the graduands, discussed the benefits for which people attended a university. He said that it was a rare privilege to be a member of a university and have the riches of learning continually spread before them. He gratefully recognized that there was little to criticize in the daily activities of the average student, but the fact could not be ignored that a change was gradually creeping over their traditional resolute character. There was a concensus of opinion that in most universities the proportion was growing of those who passed through the university with the candid intention of having "a good time." Their intention was disguised under the pretext that a university was intended as much for the development of character as for the inculcation of knowledge, and there was a danger that minority example might degenerate into a species of minority rule. He pleaded for the University of St. Andrews to take a stand in opposition to the irresponsible tendencies of the age, and call for a revival of older and sterner standards of student duty. University life must be arduous, but it could be very happy without incurring the reproach of being frivolous. The real test of a student was found not in examination results alone, but in his choice of friends and in the way he spent his hours after the work of the day was over. Even if rules could not be formulated to control the use of leisure, there remained a hope that public spirit in the universities would frown on flaunting idleness as bad form. Graduates of a university could find many opportunities to influence their successors, and the university should take a lead in making the quest for pleasure a secondary issue and not the main objective of the student's life.

Aberdeen University Graduation

At the Aberdeen University summer graduation on July 7 Lord Meston, the chancellor, who presided, conferred 201 degrees, including that of M.D. upon six graduates, Ch.M. upon one, and M.B., Ch.B. on seventy-nine. The degree of LL.D. was conferred upon Emeritus Professor Theodore Shennan, of whom the dean of the Faculty of Law said that he had been a graduate in medicine of Edinburgh and a Fellow of the Royal College of Surgeons of Edinburgh. He had come to Aberdeen to occupy the chair of pathology in 1914 equipped with a wide pathological experience gathered in the Royal Infirmary of Edinburgh, where he was senior pathologist. During his tenure of this chair he had acted as pathologist to Aberdeen Royal Infirmary, where his experience was widely sought in medico-legal matters and other questions of importance. He had rendered valuable service to the Senatus, and from 1931 had been a member of the University Court, where his contributions to the organization of the medical school, the welfare of its students, and the care of their professional interests had been of great importance. He had been specially concerned in securing to the students one free afternoon each week for sport and athletics. The University of Aberdeen was glad to honour one who had given a large part of his life to her services and added greatly to her lustre.

Correspondence

Defective Hearing and a Deaf Persons Act

SIR,—The statistical imagination is a rare gift, by using which Mr. A. G. Wells has offered an estimate of the number of persons who would come within the scope of a Deaf Persons Act on the lines of the Blind Persons Act, 1920. Unfortunately he has not been restricted by the provisions of the Act he mentions, and is equally unhampered by the purposes hitherto set out as desirable in a Deaf Persons Bill. To be scientific and accurate he should state the kind of Deaf Persons Act to which his estimates apply.

It was the long neglect of officials and politicians concerning the duty of instructing deaf children in speech at the optimum time for its acquirement, between the ages of 2 and 5 years, which prompted the main purpose of the suggested Bill; and with this was involved discovery by requirement of early registration of deafness under a penalty; and also the power of ascertainment of fitness by compelling necessary medical examination. Again, when the usual school age was passed, to prevent a costly education being wasted, the need of training in some vocational skill was suggested as a duty.

These things can all be got in time, but would come quickly if there were a Deaf Persons Act turning the attention of councils and municipalities to the neglect of the deaf. We may accept Mr. Wells's estimate as reasonably covered in all respects by 30,000 persons coming within any educational care imposed by such an Act, remembering that a great part of their needs is already met. The other purpose in the Bill was directed to the many deaf who, like the blind, easily fall out in the whirl of life. Earlier than usual they become unemployed and unemployable. Dr. Eichholz pictures them old: "entry into the workhouse means confinement to mental solitude and isolation for the rest of their lives. Neither inmate nor staff can, as a rule, understand them or extend to them even the limited amenities of social life." Here the Blind Acts make the benefits of the Old Age Pensions Acts applicable from the age of 50 years. Apart from those deaf from an early age, and already more or less under care of the Act, any cases qualifying under such provisions would be comparatively rare.

In another statistical flight Mr. Wells claims 113,000 persons over 65 years of age, and some 35,000 noisy traders for inclusion under the proposed Act, or some 70 per cent. of his gross total. Not one-fiftieth of these numbers would ever have the slightest likelihood of recognition in any Deaf Bill which would get reasonable consideration.

A Deaf Act should be got on the Statute Book as soon as possible. The estimate of those affected directly by the Act would be 30,000 at present getting incomplete educational help but requiring full recognition and educational benefits. Later in life probably about 15,000 cases, including a majority formerly included in the first category, would appear for pension help. The greatest aid, however, would be in municipal recognition of deaf welfare as a social duty, and the many ancillary trivial ways in which a community can benefit its individuals. For the benefits in these innumerable ways the cost would be very small.—I am, etc.,

Edinburgh, July 5. JAMES KERR.

The Prevention of Constipation

SIR,—I have only just read Dr. E. M. Dimock's reply (*Journal*, June 26, p. 1336) to my letter in your issue of May 29 (p. 1134). It seems to me he does not reply to my criticisms but to some imaginary contention which I have not advanced. It is true that I quoted a distinguished and independent-minded physician as stating the views to which I, an experienced but mere journeyman of medicine, also had come; but it is no answer to my contention to say that:

"The fact that such an acute observer as Dr. Hutchison has no high opinion of the dietetic treatment of constipation is probably explicable on the grounds that the patients with constipation that he sees in his consulting practice are a selected group—selected by their severity and hypochondriasis—and are not suitable material on which to form an opinion as to the treatment of the ordinary habitual constipation which is encountered in general practice."

In remote Cornwall and in East London I at least have not come into contact with "a selected group." I still see no reason to differentiate "physiologically" between the action of a seidlitz powder, which osmotically retains a sufficient bulk of water in the alimentary canal to promote peristalsis, and the action of a substance such as fibre or psyllium seed, which absorbs and retains fluid as a colloidal property. The empiric point is that in over forty years' practice I have never found patients—needing eliminative help—who have as a result of taking mild salines, such as seidlitz powders or fruit salts, experienced the unpleasant results that Dr. Dimock in his enthusiasm for bran seems to have discovered in his patients.—I am, etc.,

London, E.1, July 7. HARRY ROBERTS.

Technique in Knee-joint Operations

SIR,—As one who believes that surgical technique has made great advances since the days of Lister, I am sorry to find so eminent a surgeon as Mr. Naughton Dunn (*Journal*, July 3, p. 34) still advocating the antiquated and barbarous practice of slopping powerful chemical antiseptics into what should be clean operation wounds. Everyone knows that it is not possible to sterilize the skin by means of chemical antiseptics. But there is a considerable amount of evidence that the application of tincture of iodine or spirit to the dry skin effects at least a superficial disinfection which is of some value as a preparation for operation. It has been shown that this effect is due almost entirely to the hyperaemia and leucocytosis produced by the application. It should be noted, however, that the skin must be dry, and that washing it with soap and water or otherwise moistening it nullifies this effect. Chemical antiseptics are general protoplasmic poisons, and it is unlikely that a smear of iodine on the moist surface of a wound has any bactericidal action unless the application is so strong that it destroys all the living cells with which it comes in contact.

The fundamental principle of the Lane technique is that skin is septic, that anything which has touched skin is septic, and that anything which has touched that thing is also contaminated. The tissues deep to the skin are normally sterile, so that if access can be obtained to them without contaminating them from outside, an operation can be conducted aseptically. Skin, therefore, must be excluded from the field of operation at once, and thereafter the only things allowed to enter a wound are untouched boiled steel, sterile swabs handled with sterile forceps, and a very few ligatures and sutures, also untouched. It is true that theoretically the passage of the knife through the skin contaminates the subcutaneous tissues. But, provided that the knife is clean and sharp, this risk is practically negligible, and Lane always insisted that the cut edges of the skin should not be irritated by chemical antiseptics, which do no good and which only damage the exposed tissue cells, increase post-operative reaction, and delay healing. Some surgeons have an almost pathetic belief in the virtues of "a spot of iodine."

No reasonable person can doubt that a sterile towel is a cleaner thing to be touched by instruments entering and leaving a wound than the dirty skin of the patient, and I cannot share Mr. Dunn's fantastic notion of micro-organisms of the skin jumping through a sterile towel as soon as it is put over them. I agree that nothing can eliminate the possibility of infection, and Lane was the first to admit that there is no such thing as absolute asepsis. But there is no question that the proper use of wound towels practically excludes the principal source of infection, and no surgeon who pretends to operate aseptically can afford to ignore this elementary precaution. The Lane technique is a method of aseptic operating which has never been surpassed and rarely equalled. It is a mass of detail, each item seemingly trivial enough in itself, but as a whole giving the greatest measure of security that has yet been achieved in surgery.—I am, etc.,

London, W.1, July 6. A. S. BLUNDELL BANKART.

PS.—Since writing the above I have read Mr. Eric Lloyd's letter in the *Journal* of July 10 (p. 87), and I would like to add that it was not I but Mr. Lloyd himself who attributed his stitch abscesses to catgut. I agree that catgut can be infected in many ways. But I gave Mr. Lloyd the credit for being the careful and conscientious surgeon that I know he is. He wears gloves, he does not handle his sutures, and I presume that he uses one of the reliable brands of catgut which is sterile and not over-hardened. Was I not justified in pointing out the one obvious source of infection which he chooses deliberately to ignore?—A. S. B. B.

Treatment of Retained Placenta

SIR,—I have read with great interest Mr. David Currie's article on retained placenta (*Journal*, July 10, p. 57). Some years ago I was foolish enough to express the opinion that manual removal of the placenta was never necessary. The following week I had to do it twice. In each case it was like separating a fly-paper from the ceiling—slow, tedious, and tiring, but quite capable of competent performance.

There appear to be several statements in Mr. Currie's article to which exception might be taken. In my view placental retention is stressed when it really is of small importance. Once the placenta has separated there ought to be little difficulty in expelling it, and the idea of removing it by hand appals me. Again, what evidence is there that irregular contractions of the uterus are caused by interference? We hear constantly of meddlesome midwifery, but we hear too little of midwifery in which somebody has not meddled in time.

The intelligent use of forceps is the chief glory of the intelligent obstetrician. There is one thing above all others that must be retained—the efficiency of the uterus. Efficiency will not be retained by refusal to interfere until the uterus is exhausted. The cases Mr. Currie has seen of contraction ring following interference are due, I suggest, to bad midwifery—that is, to failure to help the powers in time. The questions to be asked at all

stages are: "Am I still clean?" and "Am I conserving the uterus?"

It is instructive to note that so much has the meddlesome bee buzzed in Mr. Currie's bonnet that a patient bled to death for want of a hand on the fundus, but estimates of the pulse rate, measurements of the blood pressure, and calculation of the amount of blood lost appear to have been a routine. There is no need to be afraid of Credé's method, nor need to be surprised that it has yielded better results in the hands of the general practitioner, who constantly gets results comparable with those of any hospital.

I cannot understand the logic of refusing to put a hand on the fundus because it is meddling, and squirting large quantities of saline up the umbilical cord because it is scientific. If the country really wants to improve on the already excellent mortality rate let it see to it that the profession eliminates its few known black sheep and put midwifery into the hands of general practitioners who have had their tonsils out.—I am, etc.,

London, N.W.4, July 12. R. W. COCKSHUT, M.B.

Cancer of the Oesophagus

SIR,—Mr. Herbert Tilley's communication on the treatment of carcinoma of the oesophagus in the mid-thoracic region by deep *x*-ray therapy (*Journal*, June 12, p. 1199), and Mr. Steele's comments on this (June 26, p. 1338), raise many points of interest for the practising surgeon who is concerned primarily with the treatment of the individual patient. Experience of these cases has convinced me that the main obstacle to the institution of early treatment is the prevalent conviction among practitioners that no available treatment really relieves the patient's symptoms, so that the patient is not sent to hospital until the need for a gastrostomy is imminent.

The purpose of this communication is to urge that all patients with dysphagia, even intermittent, should have an oesophagoscopy as well as a barium swallow as soon as their symptoms lead them to consult a doctor. That an oesophagoscopy is essential is illustrated by one of my patients, a woman of 52, who had a normal *x*-ray appearance of her oesophagus when first seen at the medical out-patient department four months after the onset of symptoms, but when an oesophagoscopy was performed two months later a large fungating growth bleeding profusely on manipulation was discovered in the middle third of the oesophagus. It is difficult to believe that oesophagoscopy would not have revealed some abnormality earlier.

Mr. Steele states his conviction that severe malaise is a usual concomitant of deep *x*-ray treatment. This is not the general experience where modern methods by long narrow fields geometrically placed are employed daily over a period of about four weeks: indeed, Mrs. Hilton has been able to treat two of my patients as out-patients without any serious general disturbance, one patient making an hour's journey each way daily, and the other being an old lady of 76 who refused any treatment which involved entrance into a nursing home or hospital.

I have had five patients with carcinoma of the mid-thoracic region (which Dr. Levitt finds less favourable than the upper third area) treated by Mrs. Hilton in the radiotherapy department of University College Hospital during the last three and a half years. All have had swallowing restored; three, treated respectively over three years, eleven months, and seven months ago, are eating normal food normally; one, who required a gastrostomy before treatment was begun, was able to swallow comfortably for five or six months until she died; while the fifth, who was bed-ridden with arthritis, was able to swallow sufficiently to prevent the necessity for a gastrostomy, which had seemed urgently called for when treatment was begun.

If practitioners could be assured that patients with carcinoma of the oesophagus when treated by *x*-ray therapy by the exact methods elaborated by Finzi and Levitt can have the power of swallowing restored, at any rate for a time, without much constitutional disturbance, patients would be sent for diagnosis and treatment at an earlier stage; and the modest claim of Mr. Tilley and Mrs. Hilton that there is now a little more hope in the treatment of this hitherto fatal disease will have an opportunity for greater fulfilment.—I am, etc.,

London, W.1, July 11. D. J. COLLIER, F.R.C.S.

Ionization for Hay Fever

SIR,—Much has been said and written about hay fever treatment, but we should not forget that the general psychological state of the patient is a big factor. It appears to be much more prevalent now than it was before the war even. Is this due to the stress of modern life, or is it due to the continuous irritation of the mucous membrane by the fumes of the modern atmosphere? Doubtless there is a big element of nervous instability, but desensitization of the nasal mucosa will damp the fuse.

It is advisable in ionization of the nasal mucosa to let the patient hold the applicators in her nose so that she can remove them at will rather than run the risk of a panic, with consequent damage in using a headband.—I am, etc.,

London, W.1, July 5. C. HAMBLEN-THOMAS.

SIR,—The excellent letter from Dr. Adam on this subject induces me to write a further short note. My results of treatment for this year are not yet complete, but the percentage of successes are not as good as last year. Three cases showed no improvement, and it is interesting to note that in each of these the hay fever was combined with asthma. I regard this combination as giving a bad prognosis for cure. I wonder if others have had this experience? Perhaps Mr. Vlasto had the bad luck to get this combination in most of his cases. I have given calcium gluconate to all my cases this year. This rather obscures the issue, but the cure of the patient must be our first concern. The gluconate is the best form of calcium—far better than the lactate—in allergic conditions.—I am, etc.,

Guildford, July 11. T. B. JOBSON.

Benzedrine and Belladonna for Hay Fever

SIR,—I have suffered from severe hay fever for ten years. Last year I had a course of zinc ionization which merely exaggerated my symptoms, and in previous years I have tried "pollacine" without any effect. There seems to be quite a large class of persons whom it is impossible to desensitize by such injections.

This year I obtained great relief with benzedrine and belladonna. On rising in the morning I took 10 minims of tincture of belladonna in half a tumbler of water and 10 milligrammes of benzedrine. This kept me free from symptoms for the greater part of the day. I have tried both these drugs separately and find them much more efficacious when used together, although the tendency for the pupils to dilate seems greater than when belladonna is used alone. In many cases the above is too large a dose, causing an unpleasant dryness of the throat and a feeling of nervous excitement, and 5 milligrammes of

benzedrine and 7 minims of tincture of belladonna are sufficient. All unpleasant symptoms can be prevented by reducing the dose.

This treatment is not claimed as a cure, for the symptoms generally return in the evening. I have tried it on several friends, all of whom obtained great relief. A useful adjunct for very bad cases is the "benzedrine inhaler," but this alone did very little good in my case. I have only tried this treatment in a few instances, so naturally my remarks about it are tentative.—I am, etc.,

Eastbourne, July 6. R. B. HEISCH.

The One-eyed Motorist and Pilot

SIR,—One-eyed pilots who flew before a certain date somewhere in 1919 can, I understand, get an A licence but they cannot get B licences.

It is possible that one in seventy of our population have useful sight in one eye only—say, 700,000 persons. They are one-eyed and for the purposes of this letter let us consider many of them blind in one eye. They live normal lives; they walk, cycle, hunt, and drive cars; they shoot; and often do not know they are blind in one eye. Indeed some who have the defect pointed out, even proved, state they do not believe it. They think their medical advisers have been mistaken. On this point some are so emphatic that they are indeed mentally blind. What I want to know is, What are the reasons which permit them to do so much that they want except fly in the air? There are no special reasons except one—that in the very rare event of sudden loss of sight in the remaining eye they must "crash land." Even this reason could be overcome by a parachute drop. In any case they should be permitted to take this risk. This same risk is taken by one-eyed motorists, hikers, mountaineers, and it is taken in lesser degree but greater quantity by two-eyed pilots. How can we live without risk? A young patient told me this week that the increasing casualty lists in the air increased his determination to join the Air Force and made it all the more attractive to him.

Remember it is not a question of the Air Force or air services, but only that of the private flyer, flying for pleasure or to help him in his work. Flying is, after all, only motoring without the road risks. One of my two-eyed friends tells me he reads a book in his Hornet Moth when flying long distances. How little the two-eyed pilot gains when flying blind (not mentally blind)!

I therefore merely ask that one-eyed individuals should be allowed the same privileges in the air that they possess on the ground. If they are allowed to drive cars, then they should be allowed to fly. If thought desirable a higher standard of vision in the single eye might be determined upon at first or for a trial period. I entirely agree with a flying instructor who tells me that a one-eyed pilot in a cabin machine is safer than a two-eyed pilot in most types of goggles.

It intrigued me to find the other day that a certified blind person whom I found to be genuinely blind within the Blind Persons Act had been drawing blind pension for ten years, and all that time he had held a driving licence! He drives a car, rides a bicycle, and has had no accident. The case was brought to my notice by a man who had been his passenger on a journey to fetch his blind pension money. In any case he told me himself that he was too blind to read the regulations in the fine print in which they are typed! He had only one eye, but could read the number plate at 25 yards with a pocket telescopic spectacle, which of course contracted his field of vision. For it must not be forgotten that persons with really bad sight and defective fields of vision and colour blindness are allowed to drive cars if they can pass the driving tests. A normal-sighted one-eyed motorist should be safer therefore than many of these individuals.

Let us here examine the position of motorists in greater detail. We find it most extraordinary. Persons who can see 6/18 (for example, a standard number plate on a car at twenty-five yards in average illumination) may drive a car, although they may have contracted fields of vision and perhaps colour blindness. Those holding licences before 1935 need not pass a driving test; thus persons eligible for blind pension may drive a car (see Group 3 below). Any persons with 6/18 vision and contracted fields would probably not pass the test, but if they become so blind at any period after the test they may continue to drive.

Roughly the blind may be divided into three groups:

1. Those with less than 3/60 vision with glasses.
2. Those with vision between 3/60 and 6/60 with glasses, when other conditions of an intricate nature, some of great complexity, are present.
3. Those with vision up to 6/6 with glasses, with fields of vision contracted to around 10 per cent. of the fixation point.

Now Group 3 is a large one, and there must be many of these persons about. Glaucoma, which is a disease with contracted fields as an essential factor, accounts for about 10 per cent. of the blind. Other common conditions with contracted fields which might account for another 10 per cent. are optic atrophy, retinitis pigmentosa, and corrected high myopia and cataract cases that have had their operations completed satisfactorily. If, therefore, this is permitted surely the one-eyed pilots with good sight have a strong case, and I should like to see them press their claims for A licences.

Standards for One-eyed A Licence Pilots

Group	Good Eye	Other Eye
(1)	6/6 vision or 100 per cent., without glasses	Blind Standard or Group 1 / Group 2 / Group 3
	Normal field of vision	
	Not colour blind	
(2)	6/9 or 90 per cent., without glasses	6/60 to 6/24 (with or without glasses)
	Normal field	Field good
	Not colour blind	
(3)	6/6 or 100 per cent., without glasses	6/24 with correction
	Normal field	Field good
	Normal colour vision	Binocular vision

Putting one-eyed A licence pilots in the air would decrease road risks, and would make other pilots more careful! It would promote aviation and its welfare (more private landing-grounds, etc.) and it would please the one-eyed individuals. It is not so much the question of "one eye *versus* intelligence" as the unintelligent pilot soon "liquidates" himself, whether he has one eye or two. There are many instances of well-known one-eyed pilots, but it is difficult to name the living ones. Wiley Post, for instance, Hinchliffe, and no doubt many others.

As I have stressed before, the difficulty of operating any standard is no easier whatever that standard may be. Revision of standards is constantly going on, but a certain amount of agitation with concrete proposals is always necessary to bring these changes about. I therefore append new standards for one-eyed A licence pilots

which I consider would meet the case, and I trust will prove acceptable. In any case it is a serious attempt to be of use in the matter.

Even in Group 3 it will be noticed that while the bad eye is below present standard required the good eye is above present necessary standard, and colour vision and fields are normal. There will always be difficult and confusing borderlines, and they could be settled by appeal as at present. This standard is not as simple as the present one, but it would be workable *at a price* which the one-eyed would be happy to pay. Somewhat similar standards if enforced for motorists would be of considerable safety value, but would prevent large numbers of motorists from driving.

If anyone, ophthalmologist or other, can see any mistakes or loopholes in this letter I should be very glad to have them pointed out.—I am, etc.,

London, W.1, June 29. J. MYLES BICKERTON, F.R.C.S.

An Obscure Case of B. coli Peritonitis

SIR,—I was much interested to read about Messrs. Wise and Gabriel's case (*Journal*, July 3, p. 34). I think one must blame the appendix as the *fons et origo* because it contained offensive pus and threadworms at the first operation. Threadworm acute appendicitis is often associated with odourless purulent fluid in the peritoneal cavity without any signs of inflammation on the outside of the appendix; in these cases infection is probably direct but blood stream infection cannot be excluded owing to the occurrence of such diseases as *B. coli* meningitis. Only a few weeks ago I removed an appendix full of threadworms and foul pus with very little peritoneal change, yet there was a large amount of odourless pus, containing pneumococci, in the peritoneal cavity. A pneumococcal empyema later delayed recovery, so there was no doubt about a blood stream infection in this case.

Having assumed that peritoneal infection could have occurred, the other difficulty is the latent period of one week; this, however, is not very unusual in post-operative peritonitis. I can recall the sudden development of signs of peritonitis 10 days after an operation for strangulated hernia, while the post-mortem examination revealed no pathology of the intestine.—I am, etc.,

Liverpool, July 5. M. J. BENNETT-JONES.

Foot-and-mouth Disease in a Man

SIR,—The following case may be worth placing on record.

In April, 1937, an auctioneer aged 24 consulted me casually for a "sore mouth." There was slight gingivitis, and there were three small bullae the size of split peas in the buccal cavity; the temperature was normal. The following day the bullae, which had become larger, were punctured by the teeth, and two fresh ones appeared; the temperature was 99.2° F. Next day there were numerous bullae and painful ulcers, and the temperature was 100.2° F.; but constitutional symptoms were surprisingly slight considering the filthy appearance of the mouth. The case was transferred to hospital, where the diagnosis of foot-and-mouth disease was confirmed. The Ministry of Agriculture were assisted in their investigations by Professor J. A. Nixon of Bristol, but up to date no trace of the infected cattle has been found.

Comparison with a case reported ten years ago is interesting. The daughter of a local farmer had only slight signs in the mouth, but there were extensive lesions of the hands; examination of the cattle in the yard brought to light early "limping" and "slobbering," and the diagnosis in three of the beasts was soon confirmed by the Ministry officials, and an extensive epidemic efficiently controlled.

A remarkable coincidence is that the late Dr. W. T. Briscoe described a local case of "human" foot-and-mouth disease over thirty years ago. I am convinced that the co-operation of the veterinary surgeons would bring to light many more cases and assist in preventing a financially serious loss to the farming community.—I am, etc.,

Chippenham, Wilts, June 17. J. HOBART NIXON, M.D.

Tests for Renal Function

SIR,—The interesting paper by Dr. C. S. D. Don in the *Journal* of July 10 (p. 54) shows a comparison of the tests for renal function and their variations. That the maximum specific gravity should be normal in certain cases of uraemia and that the phenolphthalein test should in many cases show a loss of renal function before the urea clearance test are examples. Dr. Don remarks that this failure of the tests to agree closely suggests either that they are not altogether reliable or that different renal functions are being measured.

Whether or not the tests measure different functions is a very difficult problem, although some believe they do—for example, impairment of concentrating ability showing tubular failure. I may be able, however, to mention a feature of the phenolphthalein test which must be taken into account. In a paper I contributed to the *Journal* on this test (September 29, 1917, p. 414) it was stated that Kendall had made experiments showing that want of oxygen caused destruction of the dye by the reducing substances, and also that certain cardiac diseases caused a fall in its excretion. These factors may be present in Bright's disease. It was also mentioned that in "trench" nephritis a patient with slight albuminuria but with no casts may give only an excretion of 20 per cent. in the first hour, whereas a case the urine of which is loaded with albumin and containing numerous casts may give a 50 per cent. excretion. This shows a selective action on the part of the dye.—I am, etc.,

London, W.1, July 10. A. G. AULD.

Air Raid Precautions

SIR,—One is glad to read such a sane and refreshing letter as that of Mr. Ian Fraser's in the *Journal* of July 10 (p. 90). It is an admirable review of the present position, and the suggestion of a medical committee of inquiry is an excellent one. The same cannot be said of Dr. McClean's exclusively political effort.

When I took a course of gas lectures I was not aware that I was acting as the tool of any government. I was merely trying to make myself of more use to my fellow men. I am sure that no one, in the Government or out of it, would suggest that there is any panacea against the effects of air raids, or that their prevention can be, at best, anything but a very difficult business; but that is not to say that we should give up trying unremittingly. If we can only save or relieve a small proportion of those exposed, our efforts will not have been in vain. To talk of air raid precaution schemes as being "propaganda designed to keep up the war spirit of the general population" sounds to me like utter claptrap. The war spirit simply does not exist in this country. The majority of us know only too well the horrors of war, and many of us those of gas also. What we ask is that our rulers shall arrange for us all the protection and security that is humanly possible, so that we can go peacefully about our avocations.

I admit that competitive rearmament is deplorable. But what are we to do? We were the last to come in. Others set the pace, and we perforce had to follow suit. That is the way of competition, but it is an unescapable accompaniment of the age-old principle, "Get on or get out." This applies especially to our country. We are a rich, ripe plum ready to be plucked, and our competitors will not scruple to do the necessary if we leave the orchard unprotected. In any case, Sir, cannot we stick to our briefs, and cease to "prostitute" the columns of the *Journal* with the discussion of high politics? It is a waste of valuable space in a scientific publication, and such matters should be confined to the lay press.—I am, etc.,

Shrewsbury, July 10. R. L. E. DOWNER.

SIR,—Yes, by all means let us accept Dr. W. Colquhoun's suggestion (June 26, p. 1339), and have a medical committee to "go fully into the measures adopted by the Government to protect the public." Obviously they will find, as Dr. Ian Fraser points out (July 10, p. 90), that the Government has made "no great claims at all" in this direction, and this will give the committee an opportunity themselves to make some proposals based on medical experience and knowledge. At present the Government is prepared, or is preparing, to give us all gas masks which have been proved "a protection for all known non-blistering gases," and also protective clothing against gases of the blistering kind. Against incendiary bombs it is suggested (I still quote Dr. Fraser) that "in the hour of danger" we should lay "a layer of sand on the floor of the upper rooms of our house." Finally, against high explosives, "no claims are made by the Government . . at all"; "diffusion and scattering of the population . . is all that is advised."

The Government clearly furnishes some suggestions—and with its usual generosity is prepared to expend unlimited funds—for the mitigation of casualties in the event of world war, but just as clearly it does not for one moment undertake to protect the people in anything that could be called an "adequate" fashion. Our Government, like all others, is mainly out to prevent war and this it, and they, propose to do by trying to win the armaments race.

We must not suppose, however, that the Government has no intelligence at all. It realizes—or at least its individual members do—as anyone with an elementary knowledge of human nature would, that world war with full use of modern methods of destruction would mean universal panic and chaos, at least in the big cities, and that this would be something which even the most highly qualified psychotherapeutic experts, backed by the police—or the police backed by the psychotherapeutic experts—would be entirely powerless to stem. Even the knowledge that people in other European cities were being bombed as well would do nothing to reassure the despairing and half-demented victims. In fact, the generalization may safely be made that if general war arrives the danger in the different districts will vary directly with the density of population. In other words, not merely from the point of view of danger to life and limb, but from that of starvation also, the Londoner will be in the worst position and the Hebridean crofter in the best.

If therefore an unbiased medical committee can be got together—and there is not a moment to lose—I would venture to suggest that one of the first items of their deliberations should be the following. Seeing that, in the event of world war, all the three kinds of bombs are certainly going to be used, and simultaneously, on the cities, had not the city dwellers better be preparing at once for the worst possibility? Had not "diffusion and scattering of the population," as hinted by the Government experts themselves, better begin now, when it can be done in something like decency and order, and not be delayed until hostilities open, when it will resolve itself into general pandemonium and a panic rush from the towns? As one who all his professional life has been pointing out that the increasing urban centralization of our times was going to lead civilization to disaster, I may end at this point by requoting the old adage, *Naturam expellas furca, tamen usque recurret*—which means that with whatever violence we attempt to drive Nature away she will always get her own back in the long run. It is "contrary to Nature" for the bulk of the population to be herded together into cities, and Nature will not be mocked in vain.

I trust that the main finding of the proposed medical committee will be that there is now nothing for it but advocacy of a general "diffusion and scattering of the population"—in fact, of a speedy return to the land—and that in this case we shall have no minority recommendations.—I am, etc.,

North Queensferry, Fife, July 10. A. J. BROCK.

*** This correspondence is now closed.—ED., *B.M.J.*

An Echo of Culloden

SIR,—Sir Arthur MacNalty, in his most interesting lecture at the National Temperance Hospital on June 24, reported in the *Journal* of July 3, refers to Dr. Archibald Cameron as "one of the most unfortunate of medical plotters." You may remember that ten years ago there was some correspondence in your columns on Dr. Cameron. I had delivered a lecture to the Brighton and Sussex Medico-Chirurgical Society on "Some Famous Medical Criminals," and in that lecture I referred to Dr. Archibald Cameron. This was reported in the *British Medical Journal* of December 4, 1926, and was followed by a strong protest from "Nomadic Doctor" against including Dr. Cameron in such a list. I at once saw I was wrong, for Dr. Cameron was a man of the very highest character. He was medical officer in charge of troops during the rebellion of 1745. He freely gave his services to the wounded of both sides, and many Hanoverians gave testimony to his humanity to them. After the Battle of Culloden he escaped to France. Most of the rebels were pardoned, but an Act of Attainder was passed excluding certain people, including Dr. Cameron. Eight years later he returned to Scotland where he was arrested, and he was hanged in London in 1753. Many even of the Hanoverians regarded his execution as judicial murder.

I received from the late Sir Dawson Williams, Editor then of our *Journal*, one of his delightful and characteristic letters from which I quote the following: "Here you are again making trouble—not this time with a much harassed Editor, but with an irate Highlander who in the eighteenth century would probably have called upon you with his claymore freshly sharpened. We have drafted an editorial note which in this century might perhaps save you."—I am, etc.,

Hove, July 9. L. A. PARRY.

"The Medical Directory"

SIR,—To maintain the accuracy of our annual volume we rely upon the return of our schedule, which has been posted to each member of the medical profession. Should the schedule have been lost or mislaid we will gladly forward a duplicate upon request. The full names of the doctor should be sent for identification.—We are, etc.,

J. AND A. CHURCHILL, LTD.,
104, Gloucester Place, W.1, Publishers of the *Medical Directory*.
July 12.

Obituary

JOHN TENNANT, M.D., F.R.C.S.ED.

Late Surgeon, Ulster Hospital for Women and Children

Dr. John Tennant died at Stamford, Lincolnshire, on June 23, aged 69. He came of an old and distinguished Ayrshire family, and from his early youth showed evidence of very great ability. Dux of Ayr Academy, he entered the Faculty of Arts in Edinburgh University at the early age of 17, and in his first year won the first medal and the Scott and Dunbar prize for senior Greek, and a medal for Latin. He graduated M.A. with first-class honours in classics, and then entered upon the study of medicine. During his medical course, which he completed in four years, he won many distinctions, graduating with honours in 1893. After a long spell of hospital training he settled in Belfast, where he acted as demonstrator of anatomy with Professor Symington and also gave valuable assistance to Professor Lorrain Smith in connexion with a severe outbreak of typhoid in the city. Later he specialized in gynaecology and became surgeon to the Ulster Hospital for Diseases of Women and Children.

Somewhat disappointed with his prospects in Belfast, Tennant gave up his work there and went into practice in England, first in Lincolnshire and later at St. Annes-on-Sea. As a general practitioner he was devoted to his work; his training, ability, and fine character brought him great success, and he was much beloved by his patients for his skill, his kindly sympathy, and the careful attention he gave them. He was naturally of a modest, retiring disposition, and shunned the limelight. In company he revealed a quiet genial humour, never airing his erudition, but often a half-humorous remark of his would throw fresh light on a controversial subject. He was sensitive, and disliked any coarseness of speech or rudeness in any form. I can best compare him with Chaucer's ideal of a fine gentleman:

> "He never yet no vileinye ne sayde
> In all his life unto no maner wight;
> He was a veriay perfight gentil knight."

Dr. Tennant retired from work in 1922 and returned to Belfast, his wife's native city, where he had many friends. He resumed his classical studies with great zest, and up to the time of his last illness was absorbed in the minute study of the Greek used in the Homeric poems. He was never a bookworm. He loved outdoor sports and was expert at any game he took up, such as tennis in his youth and bowls in his later years. He had been a member of the British Medical Association for forty-two years.

J. V. P.

THOMAS GILLISON, M.B., C.M.

A cable message from China records the death on June 22 of one of the oldest and most beloved of Scottish medical missionaries in the person of Thomas Gillison, who passed away at Hankow at the age of 78, after fifty-five years of devoted and unselfish labour.

Born in Baldernock in 1859, the son of a Presbyterian minister, Thomas Gillison was educated at Merchiston Castle School and Edinburgh University, and worked as a student at the famous Cowgate Dispensary of the Edinburgh Medical Mission, in company with Christie, Duncan Main, Cousland, Edwards, the Neve brothers, and others whose names are famous in medical mission history. He sailed for China in 1882 under the London Missionary Society and was appointed to Hankow, where, eleven years later, he married Dr. Elizabeth May Harris, then in charge of the Hankow Women's Mission Hospital. From that time until their recent passing away within but a few months of one another, their whole life was devoted to the service of the suffering Chinese in Central China, where the names of Dr. and Mrs. Gillison will always remain enshrined.

In 1902 Dr. Gillison, in association with Dr. P. L. McAll, founded the Hankow Union Medical College, where he not only did valuable work in training students but also translated a number of important medical text-books into Chinese, including Luff's *Chemistry* and Cunningham's *Practical Anatomy*. In 1918 the Hankow Medical College was transferred to Tsinan, to form part of the medical department of Cheeloo University. Gillison accompanied his students to Tsinan and remained there for four years, continuing his translation work and helping in the work of the medical school. The influence of his personality, and, in particular, his simplicity and rugged sincerity, made him an invaluable colleague, but his heart was always among the sick poor, and in 1922 he returned to Central China to give his services once more to the Hankow Hospital, the men's section of which now bears his name. In 1930 he retired, but the following year saw him back in China once again, and there he remained until his death, translating further books, sharing in the work of the Church, and assisting Mrs. Gillison in the conduct of a very successful dispensary. At Hankow he was joined by his eldest son and daughter—surgeon and nurse respectively—who are proving worthy successors to their parents. Dr. Gillison was decorated by the Chinese Government with the Order of the Golden Grain.

Dr. Harold Balme, former dean of the School of Medicine, Cheeloo University, writes:

One of the humblest and most lovable of men, Dr. Gillison gave himself to those in need with a generosity and abandon that will never be forgotten. One incident, characteristic of many which could be quoted about him, will serve to illustrate this point. On one occasion he showed me, rather shyly, a Chinese letter which he had received, accompanying a gift for his hospital. It ran something like this: "Dear Sir, Twenty years ago, on a terrible night in the middle of winter, you were called out in a storm to go to the help of a poor woman in labour. You went at once, although you knew quite well that the woman was far too poor to pay anything for your services. That night I was born, and from that day my mother never ceased to speak of your kindness. Now that I am able to earn money, I want to ask you to accept the fee which you ought to have had then." To Gillison that incident was just a lovely instance of a Chinaman's gratitude. To many of us it suggested a good deal more.

The death occurred on June 22 of Dr. ERNEST DEWAR CHARLES of Stanley, Co. Durham. Dr. Charles, who was only 40 years of age, was the son of Dr. John Charles of Stanley and brother of Dr. J. A. Charles, medical officer of health for Newcastle-upon-Tyne. A graduate of the Durham University College of Medicine, he qualified M.B., B.S.Dunelm in 1919, and B.Hy. and D.P.H. in 1920. He held the posts of house-physician and house-surgeon in the Royal Victoria Infirmary, Newcastle, and afterwards served on the War Pensions Committee for the

North of England area. He joined the practice of Drs. Charles, Dewar, and Benson twelve years ago, and was deputy M.O.H. for Stanley during that time. He was a vice-chairman of the Consett Division of the British Medical Association and took a keen interest in the work. He was also actively interested in the social welfare work of the district, and was chairman of the Toc H movement and of the blind welfare committee. A severe attack of rheumatic fever some years ago left permanent effects, but he was able to carry on the work of a busy practice to within seven months of his death. His ability, together with a quiet manner, gained for him the respect and esteem of all, and he will be long remembered in the district for his lovable disposition and devotion to work. Dr. Charles is survived by his wife and a son aged 12 years, with whom there is widespread sympathy in their bereavement.

Dr. JOHN ALEX. HENDERSON of Gosforth died on June 28 at the age of 46. For some years he had been a deputy regional medical officer at Newcastle-upon-Tyne under the Ministry of Health. Educated at the University of Edinburgh, he took the M.B. and Ch.B. degrees in 1915, and was for a time resident physician to the Edinburgh War Hospital at Bangour, afterwards becoming medical superintendent of the Mount Vernon Sanatorium, Barnsley. Dr. Henderson joined the British Medical Association in 1917. He contributed clinical notes to the *British Medical Journal* in 1920 and 1932 and to the *Edinburgh Medical Journal* in 1922.

Universities and Colleges

UNIVERSITY OF LONDON

Mr. R. J. Kellar, M.B., Ch.B., M.R.C.P.Ed., M.C.O.G., F.R.C.S.Ed, has been appointed from October 1, 1937, to the University Readership in Obstetrics and Gynaecology tenable at the British Postgraduate Medical School

At a meeting of the Senate held on June 23 a cordial vote of thanks was unanimously passed to Mr. H. L. Eason, M.S., F.R.C.S., for the great services which he had rendered to the University during his tenure of the office of Vice-Chancellor.

Professor L. N. G. Filon, F.R.S., and Sir Ernest Graham-Little, M.P., were reappointed members of the Court for five years from October 1.

At the meeting of the Senate on June 23 the degree of Ph.D. in Helminthology (non-clincal) was awarded to Govind Dajiba Bhalerao (London School of Hygiene and Tropical Medicine); and the degree of Ph.D. in Pathology (non-clinical) to Helen Margaret Goddard (London Hospital Medical College).

Brown Animal Sanatory Institution Committee

The Senate received the report of the Brown Animal Sanatory Institution Committee for 1936, which recorded that Mr. W. Girling Ball, F.R.C.S., had been elected chairman for 1936–7. The superintendent had continued his research on viruses on former lines, and Dr. Nathan Raw had been engaged in carrying out a research on human and bovine tuberculosis, with special reference to infections of the human body by bovine bacilli.

Address of New University Building

It has been resolved that the name of the administrative offices of the new University Building, for address purposes, shall be "University of London: the Senate House."

UNIVERSITY COLLEGE

The following awards have been made in the Faculty of Medical Sciences:

Entrance Scholarship, Margaret E. Berry. *Entrance Exhibitions*, L. N. Yhap, H. F. Melhuish. *Bayliss-Starling Memorial Scholarship (Physiology)*, A. R. Moss. *Cluff Memorial Prize (Anatomy, Physiology, Pharmacology, and Chemistry)*, R. E. O. Williams. *Anatomy* (Senior Course, gold medal), L. Rosen. *Physiology* (Senior Course, gold medal), A. G. Riddell.

UNIVERSITY OF LEEDS

The honorary degree of LL.D. was conferred on July 5 on John Kay Jamieson, M.B., C.M.Ed., Professor of Human Anatomy and Embryology at Trinity College, Dublin.

UNIVERSITY OF LIVERPOOL

At a meeting of the Council on July 6 Professor W. H. Wood was appointed Dean of the Faculty of Medicine for one year from September 1.

The following candidates have been approved at the examinations indicated:

M.D.—R. T. Bowes, J. L. Brown, Hilda M. Davis, D. O. Hughes, K. W. Stroude.

M.B., CH.B.—[1] [3] [4]G. E. O. Williams, [2] [3]R. R. Hughes. *Part III:* A. M. Abrahams, J. de Bastarrechea, S. Bender, D. Boyars, W. E. G. Bradford, A. Brooke Bateman, K. W. Cameron, Sheila Carmichael, L. H. Chandler, R. I. Cohen, K. A. Colenso, K. W. Evans, J. G. Fox, Constance M. Frazer, T. C. Gray, [3]A. S. Hall, Elsie O. Hughes, H. Hughes, T. S. Jones J. Kay, [3]A. T. Leggate, M. Libman, G. B. Manning, R. Marcus, Doreen M. Martin, R. S. Riley, W. A. M. Robinson, J. P. G. Rogerson, P. J. Rooney, J. M. Russell, Henrietta Sloan, A. C. Smerdon, Gwenda Vaughan, J. Wajnerowicz, Evelyn M. Williams, Margaret E. Williams, H. Zalin. *Part II:* H. G. A. Almond, H. Alstead, H. Angelman, C. T. Baynes, Patricia M. Bennett-Jones, A. L. Black, E. J. Bowmer, A. R. Bracey, D. W. Bracey, H. Braslavsky, B. H. Brindle, H. Buckley, A. E. Burton, B. Carruthers, J. L. Chisnall, [3]W. H. R. Cook, J. W. Crowther, G. H. Daglish, H. Dakin, R. B. Davies, J. Donnelly, Mary W. Gaskell, K. B. Gibson, J. Griffith, E. L. Hamm, W. J. Hay, Anne F. M. Heaney, D. R. Holden, R. S. Holgate, E. P. Houghton, G. O. Hughes, [4]D. A. Hunt, Brenda M. Jones, [4]Iola L. T. Jones, M. P. Jones, P. Jones, Helen Kay, R. J. Keating, J. C. Kee, J. C. Kitchen, E. Leather, J. M. Marchant, J. Mills, J. Moroney, A. Nachmanovitz, S. Newman, J. H. Newmark, P. J. O'Flynn, E. N. Owen, [3]R. A. C. Owen, J. L. Patton, B. I. Phillips, Hilda C. Podmore, J. G. Pritchard, W. Pritchard, [4]E. B. Riding, D. J. Roberts, G. I. Roberts, R. H. Roberts, G. M. S. Ryan, [3] [4]E. L. Salingar, G. Sanderson, Joyce M. Scholefield, [4]V. K. Summers, R. J. D. Temple, G. R. Thorpe, G. C. Tweedie, Lucy H. E. Walker, R. Watson, J. H. D. Wetherell, [4]R. H. White-Jones, A. R. Whitman, [4]A. H. Williams, [4]C. J. Williams, Gwendoline Williams, [4]I. P. Williams, Joan S. Wood, E. G. Wright, [4]G. Wynne-Griffith, M. Wynroe. *Passed in Individual Subjects:* G. L. Manson (Forensic Medicine and Toxicology), R. H. M. Stewart (Public Health). *Part I:* [4]C. D. Alergant, G. E. Badman, Frances E. Brierton, R. F. Browne, E. H. L. Cook, Margaret Edge, R. M. Evans, H. B. Forrest, [4]D. M. I. Freeman, Thelma R. Gaunt, C. M. Gregory, G. C. Griffiths, J. Harders, F. Hedley, Bessie Howarth, H. Ingham, [4]C. T. Jenkins, W. Kulke, [4]A. L. Latner, P. C. Lawson, Pearl Lyons, D. H. McCormack, [4]Sylvia Makin, Eileen E. V. Martin, R. J. Miller, G. W. H. Millington, [4]J. D. Muir, P. J. O'Flynn, R. J. Parry, J. L. Patton, Geraldine M. H. Paul, [4]Eleanor M. Pearson, L. G. Poole, A. G. Porterfield, T. Price, V. A. Rogers, C. Rowlands, H. J. Shuttleworth, C. R. Sluming, H. J. H. Soulby, W. O. Spence, Lucy M. Sutcliffe, Catherine S. Thomas, [1] [4]G. O. Thomas, Megan E. Thomas, Joan P. Thomson, G. R. Thorpe, J. N. Threlfall, [4]Olivia S. Turner, J. A. Wethered, J. H. D. Wetherell, A. G. Williams, K. M. Willis. *Passed in Individual Subjects:* J. L. Chisnall, J. A. Gillet, R. R. Knowles, Kathleen Pugh-Jones (Pharmacology and General Therapeutics).

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—*Part B:* M. J. Brady, J. Courtney, T. D. J. O'Farrell, J. A. Ross.

D.P.H.—E. Agius, R. T. Bowes, [4]A. Dodd, Bessie Dodd, J. G. Hailwood, Joy C. Lowe, P. Somasundram, E. A. Stilon. *Part I:* G. R. Griffith, S. M. Laird, P. Somasundram.

DIPLOMA IN TROPICAL MEDICINE.—J. Yofe.

DIPLOMA IN TROPICAL HYGIENE.—G. G. Ludlam, S. H. R. Syed, Luise Wislicki.

[1] First-class honours. [2] Second-class honours. [3] Distinction in Surgery. [4] Distinction in Obstetrics and Gynaecology. [5] Distinction in Forensic Medicine and [illegible] in Public Health. [7] Distinction in Patholo[illegible]rmacology and General Therapeutics. [8] With distinction.

UNIVERSITY OF MANCHESTER

The following candidates have been approved at the examinations indicated:

M.D.—J. R. P. Edkins.

FINAL M.B., CH.B.—L. S. Anderson, J. C. Babbage, I. W. Ball, R. S. A. Beckett, G. H. H. Benham, Muriel L. Bennett, M. J. Blank, T. Dinsdale, J. H. Ferguson, J. H. France, Rosaline Green, A. B. Hamer, R. S. P. Hawkins, F. G. Hibbert, W. S. Holden, T. Holme, W. Ingman, Monica M. Job, Katharine I. Liebert, J. R. Monks, H. N. Osborne, Nydia E. Panton, A. F. Pearson, W. H. Purves, W. A. Robson, Nina Shtetinin, T. S. Stewart, F. Stratton, N. Whalley. *Part I (Forensic Medicine and Hygiene and Preventive Medicine):* N. Altham, J. N. Appleton, Muriel I. R. ApThomas, H. B. Austin, T. M. Brand, W. W. Burnett, T. E. A. Carr, J. E. Coates, A. E. David, D. B. H. Dawson, T. B. S. Dick, A. M. Dickson, G. Garmany, A. B. Hamer, K. Harrison, Kathleen

M. Henderson, A. G. Heppleston, C. P. Heywood, Barbara M. Jessel, F. A. Langley, N. Levy, L. Linnell, D. Longbottom, Jean Mason, J. C. Mellor, A. Morgan-Jones, S. Mottershead, T. H. Norton, Mary B. Oakden, Lilian P. Parry, J. K. Rowson, E. Saunsbury, M. R. Tomlinson, T. B. Whitehead, W. W. Wilson, Frances T. Wright. (*Pathology and Bacteriology*): P. N. Holmes, D. N. Kiff, Constance M. F. Lyth, J. C. Ramsden, J. F. Rickards, H. E. Thackray, E. J. Yates. (*Pharmacology*): J. G. Atherton, A. P. Bates, T. Brittain, J. B. Brownlie, E. F. Burndred, Olive I. Elkin, J. Gregory, J. E. Horocks, A. Manch, J. E. Schofield, W. P. Sweetnam, G. K. Tutton.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—*Part I:* Muriel Hughes.

UNIVERSITY OF ABERDEEN

The following degrees were conferred at a graduation ceremony on July 7:

HON. LL.D.—Theodore Shennan, M.D., F.R.C.S.Ed., Emeritus Professor of Pathology in the University of Aberdeen.

M.D.—*H. W. Fullerton, *E. J. R. Leiper, Helen M. Jardine, J. Leiper, J. S. Walker, D. E. Wilson (*in absentia*).

CH. M.—*J. F. Philip.

M.B., CH.B.—†‡E. K. Cruickshank, †J. G. Macarthur, †A. Macdonald, †R. F. Macdonald, †J. A. F. McLean, †*D. Matheson*, †*E. E. P. Murray*, †A. W. Souter, A. S. Ashby, H. W. Balch, J. A. Barclay, E. B. Bright, W. M. Burgess, R. McN. Cadenhead, A. S. Cameron, Margaret D. Cameron, R. W. Catto, Margaret R. Clark, Enid M. M. Clow, A. Coull, J. B. Cruickshank, D. J. Cusiter, A. M. Davidson, D. J. Dawson, L. H. Duthie, *A. H. Emslie-Smith*, J. K. Farquharson, Mary I. Forbes, F. W. Fyfe, E. N. Gauld, M. S. Glassman, Jamesina Gordon, R. M. Gordon, D. Harkins, W. Herbert, E. A. Horne, J. Innes, A. Jamieson, Phyllis D. Leslie, C. M. Liddell, J. G. T. Lunn, R. J. L. MacBean, R. McDonald, J. F. Mackay, J. A. McKenzie, Jessie M. McKenzie, A. McKerlie, J. M. McKiddie, G. S. M. Mackintosh, J. M. Mair, P. Matheson, Isabel M. Mathieson, G. N. Miller, S. J. H. Miller, A. Milne, L. McD. E. Milne, Marian B. Milne, P. C. Mitchell, R. D. Monteith, J. J. T. Morrison, A. F. Murray, F. S. Rae, D. D. Reid, G. L. Ritchie, Margaret M. Robinson, J. Ross, G. Sangster, W. A. McD. Scott, W. Selbie, Jean McK. Sheach, Elizabeth M. M. Simpson, J. Slorach, W. Smith, Florence Stephen, G. A. Stephen, I. C. Stephen, *H. Tatton*, *Hilda M. Teunon*, *Elsie J. Thomson*, W. J. F. Treacher, G. B. Will, Isabella M. Will, S. C. Wright, A. G. B. Young.

D.P.H.—W. J. Hogg.

D.Sc.—Allan Watt Downie, M.D., Henry Edward Shortt, M.D., Lieut.-Colonel I.M.S. (*in absentia*).

* Awarded Honours for Thesis. † With second-class honours. ‡ Passed Final Medical Professional Examination with Distinction.

QUEEN'S UNIVERSITY OF BELFAST

At a meeting of the Senate held on July 2 Dr. G. C. Lowry, professor of midwifery since 1920, was appointed to the combined Chair of Midwifery and Gynaecology.

UNIVERSITY OF DUBLIN

TRINITY COLLEGE

At the later summer commencements, held on June 30, the following medical degrees were conferred:

M.D.—A. J. O'Connor, J. B. Patrick, H. T. Ryan, W. C. Sloan.

M.B., B.CH., B.A.O.—M. C. Brough, H. M. Carson, F. J. B. Convery, E. R. N. Cooke, C. Cunningham, G. C. Donald, R. W. Duncan, C. Eppel, C. J. S. Flood, E. G. Fox, J. E. Gillespie, W. Hayes, F. C. Heatley, J. C. Lambkin, G. N. MacFarlane, H. F. T. MacFetridge, J. H. Mitchell, C. Mushatt, A. D. Parsons, (*in absentia*), R. Pollock, H. FitzG. Sloan, J. A. Strong, Jasmine Taylor, R. E. Taylor, H. J. Walker, W. J. G. Warwick, M. C. Wood.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A quarterly Council meeting of the Royal College of Surgeons of England was held on July 8, with the President, Sir Cuthbert Wallace, Bt., in the chair.

Sir Cuthbert Wallace, Bt., was re-elected President. Mr. Victor Bonney was re-elected Vice-President, and Professor G. Grey Turner was elected Vice-President for the ensuing year.

Mr. C. H. Fagge, Mr. W. Sampson Handley, and Mr. C. P. G. Wakeley were admitted to the Council.

Under the Moynihan Bequest not less than three, or more than five, lectures on the results of research in its application to surgery shall be given in alternate years by a lecturer who shall be styled the Moynihan Lecturer.

Lecturers

The following lecturers were appointed for the ensuing year:

Hunterian Professors.—Mr. P. B. Ascroft, one lecture on an Experimental Study of the Surgical Treatment of Arterial Hypertension; Mr. H. J. B. Atkins, one lecture on Chronic Mastitis; Dr. J. I. Munro Black, one lecture on the Lympho-epitheliomata; Mr. R. C. Brock, one lecture on the Pathology, Diagnosis, and Treatment of Intrathoracic New Growths; Mr. Maxwell Ellis, one lecture on the Function of the Bronchial Tubes; Mr. T. Stewart Heslop, one lecture on an Experimental Study of the Neurogenic Origin of Peptic Ulceration; Mr. J. Cole Marshall, one lecture on Detachment of the Retina and the Modern Operative Treatment; Mr. T. W. Mimpriss, one lecture on the Histology and Treatment of Imperfect Descent of the Testis; Mr. Reginald T. Payne, one lecture on Cancer of the Stomach as a Surgical Problem; Mr. Harold Rogers, one lecture on the Gastroscopic Appearances of the "Normal" Gastric Mucosa and its Constitutional Variations; Mr. T. F. Todd, one lecture on Rectal Ulceration following Irradiation Treatment of Carcinoma of the Cervix (Pseudo-carcinoma of the Rectum); Mr. William E. Underwood, one lecture on Recent Observations on the Pathology of Hydronephrosis.

Arris and Gale Lecturer.—Dr. John Beattie, three lectures on subjects relating to Human Anatomy and Physiology.

Erasmus Wilson Demonstrator.—Mr. L. W. Proger, six demonstrations on the Pathological Contents of the Museum.

Arnott Demonstrator.—Mr. A. J. E. Cave, six demonstrations on the contents of the Museum.

Mr. L. W. Proger was re-elected Pathological Curator of the Museum for the ensuing year; Sir Frank Colyer was re-appointed Honorary Curator of the Odontological Collection for the ensuing year; Mr. C. J. S. Thompson was reappointed Honorary Curator of the Historical Collection.

The Hallett Prize was awarded to Alexander James Innes, and the eighth Macloghlin Scholarship to David Somerset Short of Bristol Grammar School.

Mr. Constantine Innes Pocock was appointed Charles Ryall Library Research Assistant for one year from October 1.

Dr. *David Slome* was reappointed as a Mackenzie Mackinnon Research Fellow.

The following assessors were appointed for the Primary Fellowship Examination to be held overseas during the coming year: Professor F. Wood-Jones and Dr. C. H. Kellaway (Melbourne); Professor A. N. St. G. Burkitt and Professor W. H. Davies (Sydney); Professor W. R. Gowland and Professor J. Malcolm (Dunedin); Lieut.-Col. F. J. Anderson, M.C., I.M.S. and Lieut.-Col. S. L. Bhatia, M.C., I.M.S. (India); Professor D. E. Derry and Professor Gleb von Anrep (Egypt).

Diplomas

A Diploma of Membership was granted to William Bradford Foster.

Diplomas were granted jointly with the Royal College of Physicians of London as follows:

DIPLOMA IN PUBLIC HEALTH.—L. J. Bacon, T. E. Jones-Davies, J. MacC. Kilpatrick, A. E. Lorenzen, C. Mani, J. N. Matthews, Doris Onions, T. B. Patel, H. E. Raeburn.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—M. B. Brody, Hilda M. Capes, Bridget Coffey, E. C. Dax, T. R. C. Fraser, J. B. Giffen, W. G. Glassco, Joan E. Greener, A. Harris, G. T. James, C. A. Keane, J. S. Knox, E. H. Larkin, A. B. Monro, K. N. H. Rizvi, K. Soddy, J. T. W. Spiridion-Kliszczewski, C. E. H. Turner, G. P. B. Whitwell.

DIPLOMA IN LARYNGOLOGY AND OTOLOGY.—G. N. Barker, G. A. Fraser, K. H. Hakim, M. Jackson, J. A. Kersley, G. P. Rayen.

The Services

HONORARY PHYSICIANS TO THE KING

The King has appointed Colonel H. C. Buckley, I.M.S., and Colonel D. C. V. Fitzgerald, M.C., I.M.S., as Honorary Physicians to the King, in succession to Major-General Sir Cuthbert A. Sprawson, C.I.E., I.M.S., and Major-General C. W. F. Melville, C.B., I.M.S., who have retired.

HONORARY SURGEON TO THE KING

Surgeon Rear-Admiral F. J. Gowans, R.N., has been appointed Honorary Surgeon to the King in the vacancy caused by the retirement of Surgeon Vice-Admiral Sir R. W. Basil Hall, K.C.B., O.B.E.

HONORARY SURGEON TO THE VICEROY

Colonel S. G. S. Haughton, C.I.E., O.B.E., I.M.S., has been appointed Honorary Surgeon to the Viceroy and Governor-General of India.

Medical Notes in Parliament

In the House of Lords on July 13 the Royal Assent was given to the Physical Training and Recreation Act, the Trade Marks (Amendment) Act, and the Methylated Spirit, Sale by Retail, (Scotland) Bill. The Physical Training Bill had received a third reading on July 12. Also on July 13 the Local Government Superannuation Bill was read a second time, and the Cinematograph Films (Animals) Bill passed through committee.

In the House of Commons on July 12 Mr. Ramsbotham moved the second reading of the Milk (Amendment) Bill, which, he said, extended the Milk Act, 1934, as amended by the Act of 1936, for a further twelve months. The Bill was merely a continuing Bill, and he hoped that a policy of a more permanent and far-reaching character might have time to mature. The Bill was read a second time.

The Local Government Superannuation (Scotland) Bill passed the report stage and was read the third time in the House of Commons on July 13.

Marriage Bill

On July 7 the House of Lords went into committee on the Marriage Bill. Lord SALTOUN initiated the debate on Clause 1, which, as received from the House of Commons, provided that there should be no divorce within five years from marriage. He moved to insert the words "except as otherwise expressly provided in this Act." He said his amendment was necessary in order to make room for a subsequent amendment standing in his name. This subsequent amendment sought to enact that if one spouse, against the will of the other, refused to permit the conception or birth of a child without good reason, this should be a ground for divorce without delay.

Lord Saltoun's amendment was negatived.

Lord JESSEL moved to substitute three years for five as the period after marriage within which no petition for divorce could be presented to the High Court. A long debate followed and the amendment was eventually agreed to, and Clause 1 as amended was added to the Bill.

INSANITY AS GROUND FOR DIVORCE

On Clause 2 (Grounds of petition for divorce) the chairman, the EARL OF ONSLOW, informed the committee that he had received a manuscript amendment by Lord Dawson of Penn to substitute the words "believed to be incurable" instead of the word "incurably" in the provision of the Bill that unsoundness of mind which had been continuously under care and treatment for at least five years immediately preceding the presentation of the petition should be a ground for divorce. Before discussing Lord Dawson's amendment the committee considered one by Lord Elton to omit the subsection of Clause 2 dealing with insanity. He said this paragraph alone permitted divorce for a misfortune. The word "incurably" was a "question-begging" epithet, and he assumed that Lord Dawson in his manuscript amendment recognized that it was very difficult to maintain the word "incurably." The tendency of modern psychology was towards recognizing that scarcely any mental disease should be regarded as incurable. The Bill would pronounce a final sentence that the sufferer would have no hope of being cured. It was wrong that there should hang over the dark approaches of insanity a threat that if the worst should fall the sufferer would be stripped of all he valued most.

The ARCHBISHOP OF CANTERBURY supported the amendment. He imagined Lord Dawson had accepted the fact that they could not really speak of mental disease as being incurable. The adoption of the clause would result in retarding the recovery of those who were curable, and would sometimes upset the balance of those who were liable to become insane.

Lord DARCY DE KNAYTH pointed out that the report of the Royal Commission recommended that incurable insanity could only be a ground for divorce when the age of the insane person was, if a woman, not over 50, and if a man, not over 60 years. The last recommendation would exclude cases of senile dementia. There was nothing to that effect in the Bill.

MEDICAL OPINION

Lord DAWSON OF PENN said if there were not differences between experts there would be no progress in the world. It was a mistake to suppose that medical experts always differed. On essential subjects there was more general agreement in the medical profession than in any other. It was common ground that this particular group of cases demanded merciful consideration because in most instances the matter was not one of fault but of misfortune. That statement was not true in the case of chronic alcoholism producing dementia or in the case of syphilis, but broadly speaking misfortune came into the question of insanity more than into the question of adultery and cruelty. Speeches had been made from which one would think there was no suffering partner in the case of insanity, but anyone who had an opportunity of studying insanity in the homes would often conclude that far more sympathy was to be extended to the suffering spouse who felt acutely than to the patient who felt less acutely.

The proposed ground for divorce in Clause 2 could not be considered without regard to Clause 3, which provided that the insane patient must have had continuous treatment in some institution for five years. That was a great protection. A fair consensus of opinion was that the majority of patients who had been under continuous treatment for five years did not recover. To assert that anything in the world was incurable was not a wise statement from a scientific man, and he would propose to substitute "one who is believed to be incurable." In the first year of treatment for insanity the prospects were very good. There was a big drop in the prospects between one year and two years, and between three and four a greater drop. After five years the number who recovered was very small. Was it not the duty of that House to say, in justice to the suffering spouse, that after five years, when the prospects of recovery for the patient were so small, that spouse should have a chance of relief? It was not made compulsory. It should be remembered that the majority of people with whom the Bill was concerned lived in houses of only a few rooms, and therefore in cases of cruelty or insanity, whether caused by drunkenness or drug addiction, the hardship pressed more heavily.

The five-year clause had been put in the Bill after advice from experts, and that advice was right. Cases of shell-shock in the war were on a totally different footing from cases of insanity which resulted from organic and structural disease. For example, there had never been a case when the arteries of a man, which were getting harder and harder, had recovered. Similarly, there were definite structural causes of insanity which in their very nature must be incurable. It was important to distinguish between such cases and the large group of functional cases, which, if they were put under treatment, would most of them be cured in much less than five years. The idea that a prospect of divorce would affect an insane person was wrong. In the majority of cases where persons had been under continuous treatment for five years the range of mental vision contracted.

Lord SALISBURY said they could not contest with Lord Dawson any matter of medical opinion, but he had put before the House a case in which the majority of insane persons would not recover, suggesting that a substantial minority would undergo the risk of divorce. It did not follow that because a man was insane he had not the most acute feelings.

Lord ADDINGTON said he had had experience with a mental hospital in the visiting and discharging of patients. Medical science had progressed in the twenty-five years since the Royal Commission, and his hospital hoped to be able to discharge as cured an increasing number of patients even after five years. Lord ELTISLEY remarked that the question of lunacy had been carefully considered by the Royal Commission and debated at great length in the House of Commons.

The view of the House of Commons had been that the paragraph under discussion should be inserted in the Bill.

Subsection (*d*), providing for divorce for incurable insanity after at least five years' treatment, was then accepted by 95 votes to 31.

Lord DAWSON then explained that on the advice of his legal friends he would postpone until the report stage his amendment to substitute another form of words for "incurably" in order to permit redrafting. He also added that he would not move an amendment in which he had intended to add to the grounds of divorce after Subsection (*d*) "or has during that period been subject to recurrent attacks of insanity." He said that in cases of cyclical insanity, dangerous as these people were to the happiness of their homes, he was afraid it would be true that when the patient came back from a period of insanity and re-entered the home he would suffer as a result of knowledge that he might be divorced.

HOMOSEXUALITY AND DIVORCE

Lord DAWSON moved an amendment providing that a petition for divorce might be presented on the ground that the respondent had since the celebration of the marriage been guilty of the practice of homosexuality. He said that some explanation was due from him in moving this addition. Homosexuality was now looked on as a pathological condition. He was not at all sure that in the future it might not be regarded as an insufficiency disease, and although it was true that the law must take cognizance of homosexuality and punish it in order to act as a preventive to potential offenders, the more reasonable view was gradually being adopted that it, at any rate, had one foot in the realm of disease and was not wholly in the realm of crime. He was not disputing the fact that the law must take serious cognizance of this offence, but he urged that this was an occasion for recognizing, with advancing knowledge, the increasing tendency to regard it as a pathological process, which concerned those who had to deal with disease. For the purposes of the Bill it would be entirely wrong to use any word which confined homosexuality to one sex. It was really time that there should be equality of treatment between men and women. For that reason, also, the insertion of this special paragraph was justified.

This particular offence was quite compatible with excellent qualities of mind and character. But such people would frustrate the purpose for which marriage existed, and it would be a grave injustice to recognize any marriage in which homosexuality turned out to be existent in either one of the parties. When that was discovered it ought to be a ground for divorce. As to cure, they were only on the brink of this question. For those who had a scientific interest it was a study of extraordinary fascination, and there was no doubt that a realm was being opened up which would enable more help to be brought to these people, provided they could be caught in the early stages. Whether they could be in later life he very much doubted.

Lord ELTISLEY said he did not fully understand what the amendment meant or what its ramifications were, or how it was to be carried out in practice by the courts of law if it was passed. What was clear, however, was that the purpose of the amendment was to put both sexes on the same footing with regard to homosexuality as a ground for divorce. He resisted the amendment because this recommendation was not one made by the Royal Commission, and it was dangerous to endeavour to introduce a new ground of divorce of this character into the Bill.

Lord DAWSON begged their lordships not to decide by the knowledge of years ago. If they were going to make a change on a matter like this, surely they must take cognizance of the progress in knowledge that had taken place in the last twenty-five years. If there was one thing that had been established in our legislation of recent years it was equality of the sexes, and this ought to cut both ways.

Lord ATKIN said he would not like it to be thought that the House of Lords rejected the more modern application of science as put forward by Lord Dawson without some reasoned objection to it. To begin with, he thought that it was not correct to say that these cases—Lord Dawson did not say so—were the result of something in the nature of disease. It was quite certain in one's experience that they were the result of wicked impulses which were capable of being controlled. Like other impulses of the kind they could be checked by advice and by resolution, and they did not appear to him to be of the nature of a permanent infirmity that was always likely to affect the married life. The real answer probably, at the present moment, was that this was a subject which required very careful examination. If some time or other a select committee or a departmental committee considered this subject in all its branches the result might be a very valuable report upon which the criminal law and the civil law might very well be amended. At present it would be a mistake to send this amendment to the House of Commons with the discussion that would be likely to arise about it.

The amendment was negatived.

DRUG ADDICTION

Lord DAWSON moved to insert as an additional ground for divorce:

> "is an habitual drunkard, or is an inveterate drug addict. For the purposes of these paragraphs a signed certificate will be required to be given in each case by two medical men, at least one of whom belongs to a panel of names approved by the Home Secretary on the nomination of the Royal College of Physicians, London."

Lord Dawson said that nothing broke up a home more than habitual drunkenness on the part of a woman or of a man, or drug addiction, and under the present law there was no power to cure such persons. Unless they were certified insane they could not be treated. If they became insane and were certified, then within a few weeks their addiction was sufficiently relieved for them to demand their release from certificate, and back they went to their addiction.

Lord BERTIE OF THAME moved as an amendment to Lord Dawson's to add:

> "The expressions 'habitual drunkard' and 'inveterate drug addict' mean a person who by habitual drinking to excess of alcoholic liquor or of addiction to drugs, as the case may be, is (*a*) at times dangerous to himself or to others or the cause of reasonable apprehension of such danger, or (*b*) incapable of managing his own affairs. The expression 'drugs' means drugs to which Part III of the Dangerous Drugs Act, 1920, applies."

Lord MERSEY said the question raised by Lord Dawson had been fully discussed in the House of Commons, which had decided that it was not desirable. Lord CECIL OF CHELWOOD pointed out that the provision of the Bill regarding insanity insisted that the insanity must be believed to be incurable, and that the person must have been under treatment for five years. No such provisions were suggested by Lord Dawson, and there was no definition of what was an habitual drunkard or an inveterate drug addict. Lord ELTISLEY did not think that it would be to the advantage of the Bill to insert the words proposed by Lord Dawson. Drunkenness was often accompanied by cruelty, and anyone who could prove that he or she was subject to habitual cruelty would be entitled to a decree. If the drunkenness was continual, even if the man was not actually cruel, he would be guilty in law of constructive desertion, and the injured spouse would be able to obtain a measure of relief provided the cruelty was continuous for three years.

Lord Dawson's amendment and the addition proposed by Lord Bertie were both negatived.

On Clause 5 (Decree of judicial separation) Lord ATKIN moved to insert words to provide that one ground for judicial separation should be a failure to comply with a decree for restitution of conjugal rights, and also that a decree might be granted on any grounds on which a decree for divorce *a mensa et thoro* might have been pronounced before the Matrimonial Causes Act, 1857. That would cover any attempt at rape and so forth, and also include cases of gross indecency, and would probably cover general cases of homosexuality. The amendment was agreed to.

On Clause 6 (New grounds for nullity) Lord CECIL OF CHELWOOD moved an amendment to Subsection 1 (*b*). This

subsection provides that a marriage shall be voidable on the ground that either party to the marriage was at the time of the marriage of unsound mind, or was at the time of the marriage or had been within twelve months of that time placed in an institution or under guardianship under Section 3, Section 6, Section 8, or Section 9 of the Mental Deficiency Act, 1913, or was at the time of the marriage subject to recurrent fits of insanity or epilepsy. Lord Cecil moved to provide that these causes should apply within twelve months after marriage. It would be a reasonable extension to the grounds of nullity to say that where the unsoundness became clear and evident within a year after marriage it might be presumed that the party was at the time of marriage not in a mental condition to give true assent. As he read the Bill it did propose that where one of the parties to the marriage was placed under restraint under the Mental Deficiency Act that should be a sufficient ground for a declaration of nullity.

Lord ATKIN said Lord Cecil's suggestion was contrary to principle. Nobody ever heard of nullity except on a ground which was existent at the date of marriage. Madness might arise twelve months after the marriage through a cause which had nothing in the world to do with the conditions at the marriage; it might be the result of childbirth. Lord DAWSON said mental disease might be so latent that it might be an unknown ground of suspicion. If in consequence of the marriage the symptoms were manifest and fully developed six or eight or nine months afterwards, it was often then possible to say that the vague symptoms of the earlier time had really been the beginning of a disease. The bulk of scientific opinion would be with Lord Cecil on that issue, but to establish the case the court would require to have before it scientists who would be able to give evidence whether that were true in the particular case or not.

Lord CECIL asked whether, before the report stage, they could not agree to accept a provision saying that the fact that one of the parties went mad within a year should be prima facie evidence which could be rebutted of unsoundness of mind at the time of the marriage. Lord ELTISLEY promised to consider the suggestion, and Lord Cecil withdrew his amendment.

On the motion of Lord GORELL paragraph (*b*) of Clause 6 (1) was replaced by a modified provision running as follows:

> "(*b*) that either party to the marriage was at the time of the marriage of unsound mind, a mental defective within the meaning of the Mental Deficiency Acts, 1913 to 1927, or subject to recurrent fits of insanity or epilepsy."

The committee negatived an amendment moved by Lord DAWSON OF PENN to insert the following new paragraph:

> "(*c*) that either party to the marriage has been within twelve months prior to the time of the marriage guilty of the practice of homosexuality."

Lord Dawson postponed to the report stage the question of amendments dealing with the communicability of venereal disease.

The committee stage was completed.

Attack on Animal Diseases

On June 29 the House of Commons debated in committee the financial resolution on which the new Agricultural Bill will be founded.

Mr. W. S. MORRISON, in moving the resolution, said that the Government's proposals included the inauguration of an attack on disease in flocks and herds of animals and in poultry on a scale greater than had ever been attempted in this country. It was proposed to use for this purpose the machinery of the Diseases of Animals Acts. An essential feature of that machinery was control at the ports, and another was the designation of areas in the country which were infected and the making of orders controlling the movement of animals within those areas and out of them into other parts of the country. In this way various diseases had been tackled with success in the past. The position with regard to tuberculosis, to which other machinery had been applied, had, however, tended to deteriorate. That was due partly to the increased mobility of modern life. A greater number of animals had had to be transported from one part of the country to another, and there was a development of dairying on a "flying herd" basis, where a man bought cattle which travelled long distances, and which came from a source of whose freedom from infection he was ignorant. The Gowland Hopkins Committee reported in 1934, and estimated that 58 per cent. of the dairy cattle leaving herds were disposed of on account of disease; that the average productive life of dairy cattle was under four and a half years, or half what it should be; and that 40 per cent. of the cows were infected with tuberculosis in various degrees, and about the same proportion had contagious abortion. The total burden of the diseases among all kinds of livestock had been estimated at about £14,000,000 a year.

PROPOSED CENTRALIZED VETERINARY SERVICE

It was clear that the eradication of disease, if they were only half successful, would be a most valuable service to agriculture. So far they had tackled it in two ways. There was the Tuberculosis Order of 1935 under the Diseases of Animals Act. That prescribed rules whereby cattle which were very badly infected with tuberculosis, so as to be visibly infected and dangerous, might be slaughtered and compensation paid. But that Tuberculosis Order did not touch cattle which could not be so described but were none the less reactors to the tuberculin test and might be conveyors of the disease. The second way in which they had tackled it had been by legislation directed to the purity of the milk supply as a public health service. That had been administered by local authorities in England and Scotland with varying results. It was now proposed to tackle this immense problem as what it was—namely, a problem of the diseases of animals—by the diseases of animals machinery, by a single island service of veterinary officers for the purpose. It was not a problem which farmers themselves could possibly solve. It was the result of many generations of neglect, and one generation of farmers could not provide a cure for it. But farmers could, if this service was provided for them and they co-operated with it, rid themselves by degrees of a heavy burden and toll of disease.

Nor could this problem be solved under the present system, whereby local authorities, with their varying resources and standards, were grappling with it. It was not the men but the system which was at fault. What was wrong was the varying standards of administration, very often due to varying rateable values and resources. As a result of that variation they found that good work which had been done in one county might be hampered and destroyed by less good work in an adjoining one. The division of areas by counties was not the same thing as the designation of areas on account of the amount of disease or absence of disease in them. A second fault in the present system was that the powers of local authorities, regarding the matter as a milk problem, were inadequate. The surest way of getting tubercle-free milk was to get cows free from tubercle in the first instance. The attack on tuberculosis had hitherto been carried out in detachments, with a local force sometimes getting out of touch with its neighbour and liable from that cause to encirclement by the enemy and to frustration. What was needed was not so much a change in tactics as a more comprehensive strategy. The Government's proposals sought this more comprehensive stategy by the creation of a centralized veterinary service for the whole island to combat the diseases of animals and of poultry in all their manifestations.

POSITION OF VETERINARY OFFICERS

This was largely a veterinary problem, and veterinary opinion was in favour of the proposals. Some apprehensions had been expressed because the Government was setting up this State centralized service of veterinary officers, that in some way part-time practising veterinary surgeons would have their living interfered with, but there was no ground at all for that fear. Where veterinary surgeons were now employed on a part-time basis by local authorities it was certain that they would have to employ them on the same basis to carry out tests and do other work similar to that which they were doing now. Indeed, it was true to say that by making the

agricultural community more conscious of the importance of disease among livestock, there was a greater prospect of these practitioners finding their services utilized. He hoped to see from this a rise in the whole status of the veterinary profession in this country which would be of lasting benefit to agriculture and the nation.

Mr. T. WILLIAMS said that the Gowland Hopkins report, which was published in 1934, pointed out that 40 per cent. of our dairy cows were reactors, and that there were no signs of diminution. The life of a dairy cow was about four and a half years when it very well might be eleven or twelve years, and the annual loss due to the death of dairy cows sold for the meat market lest they contracted tuberculosis in an acute form was about £3,000,000. The Opposition wanted to see in existence as soon as possible a national veterinary service with full power to act, so that no county which ignored its responsibilities would affect adjoining counties in which people were doing their best to clean up their herds.

NEW ATTESTED HERD REGULATIONS

Mr. W. ROBERTS said they all welcomed the proposals for disease control, but he was rather surprised at the Minister's remarks about the reorganization proposed in regard to the veterinary services. There were at present several types of authority or organization which might in some cases deal with the matter. The local authorities had up to now had to carry out the administration of the Milk and Dairies Order. Was the administration of that Order under the 1922 Act to be taken over from the local authorities and centralized under veterinary officers, who were to carry out the work on behalf of the Government direct? He took it that it was the new services under this particular resolution which were to be carried out by a staff of veterinary officers directly responsible to the Ministry. On the whole he welcomed that, and he hoped that the new attested herd regulations would be more effective than the old ones. Under the attested herd scheme the main encouragement was the 1d. a gallon which the farmer might get on his milk, but there were many farmers in the high-lying districts who concentrated on breeding stock, and some encouragement should be given to them to clear their herds of tuberculosis.

Mr. PRICE was glad the Government proposed to deal with bovine tuberculosis on the basis of areas. He was also glad that the veterinary services were to be brought under a more central control, but there was an invaluable private veterinary service in this country which was of tremendous assistance to farmers, and which he hoped would not be jeopardized.

Mr. HOPKIN said it was not possible now to provide attested milk for the school scheme because there was not enough. The Minister ought, as soon as possible, to see that milk of the best quality and the highest purity was obtained by the school children before anyone else. He was glad that this scheme was joined up with a planned attack on contagious abortion, but the amount to be spent on that was far too little. Sir FRANCIS ACLAND said he believed he was acquainted with members of the medical profession who would, with the present standard of knowledge existing, be capable of preparing—not a live vaccine, which was itself dangerous—but a dead inoculum, which could be inoculated into calves at birth and would protect them from any risk of tuberculosis. If that system could be worked out and made generally applicable they could get rid of tuberculosis within one generation of cattle.

VETERINARY SERVICES IN SCOTLAND

Mr. HENDERSON STEWART moved an amendment to retain for Scotland the general autonomy in administration which under the Scottish Office was now enjoyed, and to preserve the present high standard of veterinary services in Scotland. He said that the Government's proposal would take from the local authorities in Scotland and the supervision of the Scottish Office the various services now administered in Scotland under a series of different Acts, including the Milk and Dairies Act, the Attested Herd Scheme, the Milk (Special Designation) Order, the Meat Inspection Act, etc. These services were of a much higher standard, he believed, than was to be found south of the Border. Under the Milk and Dairies Act, 1914, the duty was laid on local authorities in Scotland to carry out at least one clinical inspection per annum of the dairies in the country. Local authorities in this country had no such duties imposed upon them; they had the power, which they might use as they desired. Since 1914, under the continual pressure of the Scottish Office and of different Secretaries of State, the annual inspection had been multiplied by three, so that in 75 per cent. of local authority areas in Scotland there were no fewer than three inspections per annum of the cows and dairies. To carry out that inspection the Scottish Border local authorities employed forty-two full-time veterinary surgeons and fifty-eight part-time veterinary surgeons. The process of the cleaning up of herds had advanced in Scotland to a very considerable extent. It would, he thought, be impossible to bring the standard of veterinary services in England up to that of Scotland within a reasonable measure of years, because there were not the veterinary surgeons available to provide the whole country with the same intensive inspection as in Scotland.

Mr. WEDDERBURN said it was true that the Milk and Dairies Act began to be applied in Scotland in 1925, whereas in England no similar steps were taken until the passing of the Milk Act in 1934. Therefore for twelve years they had now had a very efficient service in Scotland for the eradication of tuberculosis, which had resulted in there being more attested herds and a smaller proportion of tuberculous cows in non-attested herds in Scotland than in England. There was not the slightest reason why the efficiency of that service should be in any way affected by the centralization. On the contrary, backward areas were more likely to be brought up to the standard of the more progressive authorities in Scotland than they would otherwise be. The Minister was very much alive to the administrative advantages of securing the closest possible connexion between the Scottish veterinary service and Scottish opinion, and to secure this he was prepared to consider the appointment of a separate permanent officer in Edinburgh to keep in touch with the Scottish officers. There would certainly be no reduction in the number of inspections yearly, and there would probably be an increased number of inspections in the minority of counties. If Mr. Stewart's amendment was carried it would involve a separate service for all animal diseases in Edinburgh. The Diseases of Animals Act had been a United Kingdom service for the last forty years. Under that service was administered not only such things as control of sheep scab and foot-and-mouth disease, but also the tuberculosis order in regard to the slaughter of beasts All that was done at present by the Ministry of Agriculture but if they were to have a separate tuberculosis service in Scotland it must involve removing the Diseases of Animals Act administration from the present United Kingdom service to a separate new service in Edinburgh. There were serious objections to that course.

Mr. HENDERSON STEWART asked leave to withdraw his amendment, but the Labour Party opposed this. The amendment was negatived by 210 to 111, and the resolution agreed to.

Pensions of Local Government Officers

The Local Government Superannuation (Scotland) Bill was before a standing committee of the House of Commons on June 29. Mr. NEIL MCLEAN referred to the provision of Clause 35, which allowed the Secretary for Scotland and the Minister of Health to make regulations concerning the rights and liabilities of a person exchanging from employment with a local authority under the English Act for employment with a local authority under the Scottish Act or vice versa.

On the motion that Clause 3 stand part of the Bill Mr. WEDGEWOOD said that Subsection 4 of this clause cut out persons who were subject to the Asylums Officers' Superannuation Act of 1909. He understood that in East Lothian there were individuals who might be cut out of this scheme although there was no other scheme for them at the present time. Dr. ELLIOT said he would do his utmost before the report stage to clear up this point in consultation with the local authorities. The clause was then added to the Bill.

On Clause 5 (Power to admit employees of statutory undertakings and registration officers) Mr. J. F. C. REID, Solicitor-General for Scotland, moved to insert:

> "Where the local authority, being a local authority as defined in the Maternity Services (Scotland) Act, 1937, has made arrangements under Subsection 1 of Section 1 of that Act with a voluntary association for the employment of certified midwives by that association the provisions of Subsection 1 of this section shall apply in relation to statutory undertakers and to employees of those undertakers."

He said that under the recent Maternity Services Act for Scotland there was a provision that a local authority might make arrangements with a voluntary association whereby the necessary midwives in their area were provided by the association. The amendment would give midwives who were engaged through the medium of an association rights similar to those of persons employed by a local authority itself. This applied only to whole-time midwives who were virtually engaged in municipal work. He could not say at the moment whether it would be possible to make with the Queen's nurses the type of arrangement referred to in the Maternity Services Act. The Government would consider the matter. The amendment was accepted, and the clause as amended added to the Bill.

On Clause 6 (Contribution) the committee accepted an amendment proposed by Mr. REID to enable provision for pension rights at the higher rate to be maintained in a case where a man kept the same post but his remuneration was reduced owing to advancing age. The clause as amended was ordered to stand part of the Bill, and after further discussion the committee adjourned until July 1.

On resumption on Clause 16 (Female nurses, midwives, and health visitors) the committee agreed to an amendment proposed by Dr. ELLIOT enabling local authorities to grant compensatory allowances to nurses, midwives, and health visitors although they had not completed forty years' service at 60 years of age. He said the allowance would be an amount not exceeding the difference between the pension to which a person was entitled under the Bill and the pension she might have earned had she continued to serve until she was 65. The clause as amended was agreed to.

On Clause 22 (Modification and replacement of local authorities superannuation scheme) Mr. REID moved an amendment which, he said, would bring into the local acts similar provisions to those which the committee had passed in Clause 3 dealing with contributory employees. The amendment would not deprive anybody of any existing rights and local Acts, and it would safeguard existing practices and provisions affecting authorities which had local Acts. Certain authorities had in operation medical examinations before accepting candidates for office, and the amendment would preserve that practice where it existed. Dr. ELLIOT said the Government would consult the local authorities and draw their specific attention to the amendments that had been made. The committee agreed to the amendment and ordered the clause to stand part of the Bill.

After further amendments Dr. Elliot proposed a new clause dealing with the rights of whole-time officers appointed in a temporary capacity. He said its effect was to secure that in the case of an officer expressly engaged in a temporary capacity for a period of not more than two years a local authority might determine that that officer should not be a contributory employee, but that at the end of two years' local government service, whether continuous or not, such an officer would automatically become a contributory employee whether he remained with the same authority or transferred to another within twelve months.

The clause was approved and added to the Bill.

Drafting amendments were made in the second Schedule (Provisions as to asylum employees), and the Bill as amended was reported to the House.

Government and Cheap Milk

On July 5 the House of Commons in committee considered the financial resolution on which the Bill amending the Milk Acts, 1934 and 1936, will be based. Mr. RAMSBOTHAM, in moving the resolution, said that it regularized the payments of the English Milk Marketing Board to producer-retailers who had taken part in experimental schemes for the supply of cheap milk for nursing and expectant mothers and children under school age in certain parts of the Special Areas. Doubt had arisen whether it was within the legal power of the Board to make these necessary rebates to the producer-retailers, and the resolution would put that beyond doubt.

Mr. JOHNSTON said that the Government was subsidizing milk in schools, and school children were being sold milk at 1s. a gallon. Everybody applauded that, and every medical officer of health, educationist, and nutritionist said that the Government was on the right lines. In the case of children of 4, 3, and 2 years old, babies, the sick and nursing mothers the price was 2s. a gallon. Why should the Government continue to make this difference in the charges? Instead of allowing milk to be diverted to the factories the Government should say to every medical officer of health that as long as a mother with young children cared to go or to send to any authorized distributor of milk she should get it at the same price as that at which it was supplied to the schools.

Mrs. TATE said she had constant complaints from mothers of children at schools that one reason why they did not care for the milk was that it was pasteurized. It was time that there was a real impartial inquiry into the relative nutritive value of pasteurized and unpasteurized milk. The milk-in-schools scheme had been in operation for three or four years, and there should be leaving school a generation of children who had acquired a taste for pasteurized milk. If inquiry were made, however, she thought it would be found that very few children who had left school had continued the milk habit.

Mr. W. S. MORRISON, replying to the debate, said questions had been raised about the pasteurization of milk and other matters which were of great interest to him in attempting to formulate a Government policy on the question of milk. All he asked the committee to do that night was to agree to extend the existing provisions for another twelve months so that he might get some other opportunity of laying before Parliament legislative proposals of a more permanent character.

The resolution was accepted.

On July 6 in the House of Commons the financial resolution on the Milk (Amendment) Bill was agreed to on report, and Mr. RAMSBOTHAM introduced the Bill.

Institutional Treatment of Pulmonary Tuberculosis.—Sir KINGSLEY WOOD told Mr. Messer on June 17 that the numbers of cases of pulmonary tuberculosis treated in public health and approved residential institutions in England and Wales were: 1934, 39,856; 1935, 40,484; 1936, 41,630.

Gas Masks for Civilians.—Up to June 19 9,000,000 gas masks had been made under the Home Office scheme. Mr. LLOYD stated, on June 24, that the United Kingdom had a larger number of gas masks for the civil population than had any other country in the world. The final stage had been reached in preparing the handbook for householders on air raid precautions.

Results of School Medical Inspection at Leicester.—On June 21 Mr. KENNETH LINDSAY, replying to Mr. Lyons, said that during the year ended December 31, 1936, 12,356 school children in the city of Leicester were examined at routine medical inspections and 15,882 at special inspections. There were also 26,257 reinspections. The number of children found at routine medical inspections to require treatment for defects other than defects of nutrition, uncleanliness, and dental diseases was 1,569. Information was not available to show the number of children found to require treatment at special inspections, but 11,277 defects requiring treatment were found. On December 31, 1936, six whole-time medical officers were employed by the local education authority in the work of medical inspection and treatment.

Corporal Punishment in Schools.—Mr. KENNETH LINDSAY, on June 21, informed Mr. Sorensen that the administration of corporal punishment in the schools was a matter which

had always been regarded as within the discretion of the school authorities, and the President of the Board of Education did not see any reason to vary that policy. He was satisfied that during recent years there had been a welcome decrease in the infliction of corporal punishment as a means of maintaining discipline.

Inquiry into the Use of Celluloid.—Mr. CARTLAND, on June 22, asked the Home Secretary whether he had yet set up the departmental committee to inquire into the question of the danger to children and others arising from the use of celluloid toys and other articles, and, if so, what were its terms of reference. Mr. LLOYD replied that Sir Vivian Henderson, formerly Parliamentary Under-Secretary at the Home Office, had consented to act as chairman of this committee, and the Home Secretary hoped that its composition would soon be completed. Its terms of reference would be: "To inquire into the use of celluloid and any similar highly inflammable material in the manufacture of toys, fancy goods, articles of attire, toilet requisites, and the like, and to consider what steps are desirable and practicable against the danger arising to the public, and especially to children, from such use."

Protective Equipment for Mine Workers.—On June 22 Mr. T. SMITH asked to what extent protective equipment in the way of helmets, gloves, etc., was employed in the coalfields. Captain CROOKSHANK said that the reports for 1936 of the divisional inspectors and of the Safety in Mines Research Board, which would shortly be published, showed that satisfactory progress had been made in the coalfields in the use of protective equipment. Hard hats, for example, were bought at a rate of more than 12,000 a month. He wished to express his appreciation of the keenness and co-operation shown by all sections of the industry, which had enabled a gratifying measure of progress to be attained.

New Mental Institution for Surrey.—Mr. BERNAYS informed Mr. De Chair on June 24 that the Surrey County Council proposed to exercise compulsory powers to acquire Merrist Wood Hall, Worplesdon, for a lunatic asylum. A public inquiry would be held at which objections would be heard, and Sir Kingsley Wood would carefully review all the circumstances before coming to a decision.

Scheme of Cheap Milk in the Special Areas.—On June 28 Mr. W. S. MORRISON informed Mr. J. Griffiths that the schemes for the supply of cheap milk in the Special Areas had been inaugurated for experimental purposes by the Milk Marketing Board, with the co-operation of local distributors and of the local authorities concerned, and with financial assistance from the Commissioner for the Special Areas. The Board was of opinion that fuller information on the working of the present schemes was desirable before further action along these lines could be considered.

Practical Dietetics in Schools.—On June 29 Mr. HEPWORTH asked what steps were taken to teach practical dietetics in schools, with special reference to the value of body-building foods. Mr. KENNETH LINDSAY replied that cookery was a regular subject in the education of the older girls in public elementary schools. The curriculum generally included such instruction and training in the principles of proper dieting and their application as were suitable for girls of 12 to 14 years. Some 90 per cent. of all the older girls attending the elementary schools, and rather more than 80 per cent. of those educated in secondary schools, were attending schools in which such instruction was provided.

Medical Examination in Drunkenness Charges.—Answering Sir John Mellor, Sir SAMUEL HOARE said all police forces had instructions that if a prisoner in custody on a charge involving drunkenness desired to be examined by a doctor selected by himself the request was to be complied with on the understanding that the prisoner would be responsible for the doctor's fee.

Notes in Brief

In 1936 the number of certificates of disablement or death from silicosis issued by the Medical Board was 727, including 197 certificates in respect of death.

Medical News

The second World Congress on Mental Hygiene will be held at the Centre Marcelin-Berthelot, Paris, from July 19 to 25. The subjects to be considered include eugenics in the prophylaxis of mental diseases, mental hygiene and sexuality, training at different ages and in various occupational and other environments, administrative and legislative problems; indications for research and propaganda work, and certain psychological aspects. Sir Hubert Bond will propose an international classification of mental affections with respect to nomenclature, Professor D. K. Henderson will open a discussion on the individual and social prophylaxis of suicide, Professor C. I. Meyers will deal with mental hygiene in intellectual work, and Dr. W. M. C. Harrowes will submit a communication on the mental hygiene of the adolescent. Visits have been arranged to mental hospitals near Paris, psychotechnical laboratories, colonies for abnormal children, and Versailles. There will be an exhibition to illustrate the work in various countries in connexion with mental hygiene. Copies of the full programme may be obtained from the secretary of the National Council for Mental Hygiene, 76 and 77, Chandos House, Palmer Street, London, S.W.1.

The sixth International Montessori Congress will be held in Copenhagen under the auspices of the Danish Minister of Education from August 1 to 10. Dr. Maria Montessori will speak on the central subject of the congress, "Educate for Peace," and the opening session will be broadcast. Particulars may be obtained from the General Director, International Montessori Association, 1, Hampstead Hill Gardens, London, N.W.3.

Professor Georges Portmann of Bordeaux and Paris will hold a course in English of practical classes in oto-rhino-laryngology from July 26 to August 29. This will include anatomical demonstrations, various operative procedures, clinical examinations, bronchoscopy, oesophagoscopy, and direct laryngoscopy, with attention to special methods of diagnosis and treatment. Further information may be obtained from Professor Portmann, 15, Rue Franklin, Paris.

The Minister of Health, in accordance with an announcement recently made by him in the House of Commons, has arranged for two officers of his Department, Colonel L. W. Harrison, D.S.O., M.B., and Mr. D. C. L. Ward, accompanied by Dr. Margaret Rorke, director of the venereal diseases department at the Royal Free Hospital, to pay a short visit to Sweden, Norway, Denmark, and Holland for the purpose of studying the systems in operation in those countries for combating venereal diseases. The party left London on July 12, and will be joined later by Dr. T. Ferguson of the Scottish Department of Health.

The issue of *La Presse Médicale* for June 26 is devoted to the International Exhibition in Paris.

The issue of *Le Sud Médical et Chirurgical* for June 15 is devoted to Italian medicine, the contributors being professors from Madeira, Catania, Pisa, Cagliari, and Florence.

The July issue of the *Practitioner* is devoted to the care of the aged, the first article, on "Old Age," being written by Sir Robert Armstrong-Jones.

The Secretary of State for Scotland has appointed Dr. R. P. J. McBroom, senior assistant medical officer at Argyll and Bute Mental Hospital, Lochgilphead, to be a Deputy Commissioner of the General Board of Control for Scotland.

Dr. William Ferriday Jackson has been appointed a Justice of the Peace for the City of Manchester, and Dr. William Edward Houlbrook a Justice of the Peace for the County of Derby.

A new clinic for tropical diseases has been opened in the Policlinic at Naples under the direction of Professor Boeri.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

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QUERIES AND ANSWERS

Cancrum Oris

Professor G. GREY TURNER, in reply to Dr. Hope Trant (*Journal*, July 3, p. 48) writes: May I say that for many years I have tried practically all methods of treatment, and have been forced to the conclusion that it is best to treat the condition like an acute infective gangrene, and to excise the involved area with the diathermy knife, taking care to cut through the healthy tissues to about a quarter of an inch beyond the spreading edge. Any areas that cannot be excised in this way should be thoroughly treated with the coagulating current. The mutilation involved may be serious, but is no worse than the loss of tissue which is inevitable, and it does hold out a better prospect of recovery than any other form of treatment with which I am familiar.

Vaccines Protecting against Influenza

Dr. CLAUDE A. P. TRUMAN (Exford) writes in reply to Dr. H. V. Mitchell (*Journal*, June 26, p. 1352): A few years ago I had occasion to immunize fifty patients and the staff of an institution against diphtheria. The influenza season was at hand, and a bad epidemic followed shortly. Only two of those inoculated suffered slightly, but the year before they had all succumbed. The same thing happened when the effects of the inoculation had worn off in a year's time. The numbers affected and not affected would appear to rule out coincidence.

Splitting Finger-nails

"A. M. B." writes: I am satisfied that this condition is the result of excessive filing—modern methods of manicure—as opposed to cutting. A blacksmith pares a hoof before using a file.

Income Tax

Assessment of House

"X. X." owns a house valued at £1,500, let at £85 per annum and assessed at £80 gross. He wishes to make alterations costing £400 and to recoup himself by charging additional rent, and inquires as to the effect on the assessment.

*** One result of effecting the alterations will be that the property will come up for reassessment as if it were a different entity—and the fact that it is at present assessed at £80 will not have much, if any, effect. If he increases the rent by, say, 8 per cent. of £400 (to cover interest and sinking fund) the authorities will be entitled to fix the new assessment at £85 + £32 = £117 gross. As against this, however, "X. X." will be entitled to claim against the net assessment the amount of interest paid by him to a building society if the £400 is found in that way. If the tenant signs jointly and pays the £32 to the building society, "X. X." will not receive the allowance, but he will pay more income tax than at present because of the increase in the Schedule A assessment—which will presumably be the same whichever arrangement he made with regard to the interest.

Employment Abroad—Visit to United Kingdom

"EXILE" is employed in the Colonial Medical Service. His wife and son reside in a furnished flat in London, and he remits money to them from abroad. He proposes to come to England in July for six months or so. Will he be liable for income tax, and, if so, would that be affected by restricting the period of his stay in the United Kingdom or making special arrangements with his bank abroad.

*** He will be liable to assessment as for the financial year 1937–8, whether he is here for six months or less. The amount of the gross assessment will be determined by the total amount of income received in, remitted to, or brought to the United Kingdom, but of course he will be entitled to the usual deduction of £180—married personal allowance—and to £60 child relief. The only means of reducing his liaiblity would seem to be by restricting the amount of income received here, for example, by allowing it to accumulate abroad and covering his expenditure here by realizing capital investments; but if he proposes to make some arrangement of that kind legal advice should be taken, as the matter is one of considerable difficulty.

LETTERS, NOTES, ETC.

Coffee and Liquor

H. KOOPMANN and H. KEMPSKI (*Münch. med. Wschr.*, May 14, 1937, p. 780) have carried out a number of investigations on the influence of the consumption of coffee on the concentration of alcohol in blood and urine in persons under the influence of drink. They were able to confirm the well-known sobering influence of coffee, which takes place in spite of the fact that the concentration of the alcohol in the blood remains unchanged. At the same time the alcoholic breath becomes less pronounced, though only temporarily. The concentration of alcohol in the urine increases after the consumption of coffee and eventually becomes greater than the concentration of alcohol in the blood. Therefore, from the medico-legal point of view the concentration of alcohol in the urine is of no significance without a simultaneous examination of the concentration of alcohol in the blood in persons suspected of being under the influence of drink who have partaken of coffee afterwards.

Hairpin in Bladder

Mr. FAUSET WELSH, F.R.C.S., writes: Some years ago I was asked to see a girl of 15 who, out of anatomical curiosity, had inserted a hairpin, three inches long, into her urethra. The hairpin had slipped into the bladder, and was causing her much pain. With an operating cystoscope it was seen to be wedged firmly in the transverse plane in the centre of the bladder. Filling the bladder with fluid did not dislodge it, and the cystoscopic forceps failed to secure a good enough grip to turn the hairpin; nor was this possible when tried through a direct vision straight cystoscope. Ultimately the following manœuvre was successful. A straight pair of urethral forceps were introduced into the bladder through the urethra and the hairpin grasped by the middle. This was accomplished by sense of touch only. A second pair of similar forceps were passed alongside the first pair, and the hairpin grasped nearer to the junction of its two limbs. The first forceps were withdrawn and reintroduced still nearer to the junction, and so on, until the junction was grasped and drawn down easily through the urethra.

Medical Golf

The Irish Medical Golfing Society recently held a meeting, with the following results. The Brady Cup (Mersea Island): R. Lindsay Rea (11), 4 up. Holmes Cup (Moor Park): H. O'N. Butler (18), L. F. Clarke (1), and R. B. Quinn (10) finished level with 75; the first-named won over the second nine holes. Lane Cup: E. T. McElligott (8), who was the winner over the second nine holes, J. L. Walsh (10), and L. F. Clarke (1) were level, 1 down. Scratch Prize: L. F. Clarke, 76. In the Corbett Cup, for those with a handicap of 16 and over, E. F. Kelly and J. Speares tied with 81, the former winning with a better score over the second nine.

We have received from Messrs. George Borwick and Sons, Ltd., a sample of their product Lemon Barley Powder which, dissolved in cold water, makes quite a pleasant summer drink.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

41 Cardiac Psychosis

J. WORTIS (*Amer. Heart J.*, April, 1937, p. 394) believes that true cardiac psychosis occurring in relatively uncomplicated cases of heart failure is uncommon. He was able to find only twenty-six cases in a series of 100 patients suffering from heart failure who were seen by the psychiatric medical service in Bellevue Hospital. It is still impossible to explain the cause of the condition, of which the prognosis is bad. Of nineteen patients whom the author was able to trace sixteen had died within two years, two were seriously ill, and only one was improving. Varying degrees of confusion, especially at night, are found in nearly all cases. In his series Wortis found that 77 per cent. showed clear evidence of anxiety and 89 per cent. had delusions of persecution. The anxiety in some was caused by the knowledge of their serious illness, in others it was due to the presence of delusions or hallucinations, but in the most apprehensive there was no definite reason for anxiety. Wortis believes that when the higher levels of integration are intact the patient is able to provide an apparently reasonable explanation for his anxiety, but when these are disturbed the underlying mood gives rise to unmotivated anxiety. Hallucinations and delusions of all kinds usually occur in cardiac psychosis. In the series of patients 65 per cent. were over-talkative and 46 per cent. circumstantial. The main factor in diagnosis is the association of psychosis with heart failure. Aetiological factors of heart disease, such as syphilis, may independently cause a psychosis. Precordial and cardiac sensations, whatever their origin, may give rise to anxiety states, and, conversely, these sensations are present in all kinds of psychosis. Wortis points out that in cardiac psychosis the psychological mechanism of anxiety may be studied in relation to a circumscribed physical condition, for anxiety may be produced by physical disease and may give rise to persecutory delusions dependent on the degree of associated confusion.

42 Insulin and Vitamin A

M. ROLLER (*Med. Klinik*, May 14, 1937, p. 661) has been able to prove that there is an antagonism between vitamin A and insulin. A greater consumption of vitamin A increases the glycosuria in diabetes. This explains the decreased sensitiveness to insulin following a fat-albuminous diet which is rich in vitamin A and the increased response after a carbohydrate diet which is poor in vitamin A. According to the author, the increased sugar tolerance in hypothyroidism is due to an insufficient conversion of carotin into vitamin A, and he cites a number of clinical observations confirming his thesis.

43 Chromic Acid Poisoning

KRIEGER (*Dtsch. med. Wschr.*, June 1, 1937, p. 893) notes that while chronic chromic acid poisoning is comparatively common, acute poisoning with this acid and its salts is very rare; in 1922 only sixty-two such cases could be collected from the literature, and most of them were caused by potassium bichromate. The author observed a case of attempted suicide by a saddler's apprentice, aged 18, who swallowed a large quantity of potassium bichromate intended for the tanning of leather. He was admitted to hospital fully conscious and showing no signs of collapse. The skin and sclerae were slightly jaundiced, and the lining of his mouth and throat were markedly yellow and slightly oedematous. There was considerable tenderness in the epigastrium with well-defined rigidity of the abdominal muscles. The patient repeatedly vomited very yellow material. This evacuation was supplemented by the stomach pump, and later the patient recovered without any permanent ill effects. What the author regards as a new contribution to the symptomatology of this condition was a positive Babinski's sign, which in this case was clearly demonstrable for four days. Other signs which are, he believes, fairly characteristic are great thirst, tenesmus with loose, cholera-like stools which may or may not contain blood, dyspnoea, cyanosis, coldness of the extremities, pain in the loins, retention of urine, albuminuria, dilatation of the pupils, loss of consciousness, and convulsions. In fatal cases the clinical picture is that of uraemia, and severe gastric haemorrhage may prove fatal. Potassium bichromate is mainly excreted by the urine, and to a lesser extent by the bowels and by the respiratory tract.

Surgery

44 Venous Thrombectomy

A. LÄWEN (*Zbl. Chir.*, April 24, 1937, p. 961) in a man, aged 49, who had been suffering for two days from acute thrombosis of the subclavian and axillary veins incised these vessels and removed the clots. The pain, as well as the arteriospasm which Läwen has frequently found to accompany venous thrombosis, disappeared at once; it was uncertain whether this was due to the restoration of the venous flow or to the interruption of a vein–artery reflex. The latter view is supported by the recent reports of French writers on the quick improvement after resection of large thrombosed veins, and by Leriche's successful treatment of arterial thrombosis, secondary to embolism, by arterial resection. In two cases, both clearly unfavourable, Läwen removed clots, with technical success only, from the femoral and iliac veins. Kulenkampff recently published three cases in which saphenous thrombectomy was attempted with the object of preventing lung infarction and embolus. Läwen does not recommend thrombectomy as a commonly justifiable method of treating venous thrombosis, as the precise anatomical diagnosis is often difficult and the results of conservative treatment are usually satisfactory. He thinks, however, that the operation is worthy of consideration in cases of visible venous clotting, associated with appreciable arteriospasm and perhaps with repeated pulmonary infarctions. Temporary occlusion of the vein by pressure above the thrombus, as a means of preventing the danger of embolus during operation, is preferable to ligature or to leaving the vein open.

45 Injuries of the Semilunar Cartilage

In the experience of H. PRINZ (*Beitr. klin. Chir.*, April 28, 1937, p. 337) these injuries more commonly affect the internal cartilage in the male sex, and are to be diagnosed chiefly from signs of resistance to complete extension and from tenderness between the femur and the tibia when the leg is externally rotated on the thigh with the knee flexed. Each of these symptoms is occasionally absent in spite of a torn cartilage, and each may sometimes be produced in the absence of a tear by the impaction of swollen synovial fringes or by a free foreign body. Steinmann's sign (the shifting—backwards during flexion and forwards during extension of the knee—of the tender point) can sometimes be elicited. The presence or absence of effusion is not important in diagnosis, and a characteristic history is not always obtainable. Ordinary radiography is seldom helpful, but in doubtful cases Böhm's method of radiography after intra-articular injection of 3 to 4 c.cm. of aqueous uroselectan B may be decisive. Endoscopy of the joint is more dangerous than surgical exploration, and is unjustifiable. At

Konjetzny's clinic operation is preferred to conservative treatment for persistent or recurrent derangement. Although the injured and torn parts of the cartilage are removed, its capsular zone's capacity for regeneration is such that it may be left behind when possible, unless the patient is engaged in heavy manual work. Prinz discusses fully the aetiology of the tearing of the semilunar cartilage. In all but three out of fifteen cases microscopical examination showed chronic degenerative or inflammatory changes, which some German and Swiss writers have regarded as primarily causative, trauma playing an unimportant part. Conclusions drawn from histological examination alone, however, are deceptive; it is certain that in a large majority of cases direct or indirect trauma is the chief aetiological factor.

46 Congenital Urethral Atresia

S. R. WOODRUFF and A. H. MILBERT (*Urol. cutan. Rev.*, May, 1937, p. 303) state that congenital atresia of the urethra is one of the rarer anomalies of the urogenital tract. They give references to the literature and record a personal case—that of a male infant who died one hour after birth. After death they found that the left kidney was converted into a thin-walled sac, and the surface of the right kidney was studded with small cysts, the ureters were tortuous and much dilated, and the bladder was uniformly distended. The posterior urethra was represented by a sacculation 3 cm. long and 3 cm. in diameter. In the bulbous urethra there was a diaphragm 2 cm. thick producing the atresia. Besides the urogenital anomaly the child had bilateral talipes varus and a patent foramen ovale and ductus arteriosus Botalli.

47 Fractures of Vertebrae

A. CIMINATA and G. ANDREOLETTI (*Arch. ital. Chir.*, 1937, **45**, 5, p. 505) record forty-six cases of fracture of the vertebral column admitted to the hospital at Monza during the last ten years. The ages of the patients ranged from 15 to 67. The distribution of the lesions and their fatality were as follows: in seventeen cases of lesions in the cervical region there were eleven deaths; in fifteen cases of lesions in the dorsal region there was one death; in fourteen cases of lesions in the lumbar region there were no deaths. Of the eleven deaths in the cervical group four occurred within a few hours and seven within from two to forty-five days with symptoms of paralysis of both upper and lower limbs, paralysis of the sphincters, bedsores, and high temperatures. Of the seven cervical cases which recovered, three had a transient paresis of the limbs and bladder and four showed no symptoms in the limbs or bladder, and had no sequelae. In the dorsal group the single death was preceded by paraplegia, paralyses of the sphincters, bedsores, and high fever; all the others made a complete recovery. In the lumbar cases there were transient parasthesia of the lower limbs and vesical paresis. In only one case was there paraplegia.

Therapeutics

48 Copper in the Economy of Insulin

H. SCHNETZ (*Klin. Wschr.*, May 8, 1937, p. 664) has been able to show that the administration of copper inhibits a blood-sugar rise following the ingestion of 30 grammes of dextrose in healthy persons. Four to eight copper sulphate pills daily were well tolerated. The total quantity of copper in each pill was 2.5 mg., and the daily dosage from 10 to 20 mg. of copper. Schnetz then selected seventeen diabetic cases of varying degrees of severity, noted their daily intake of white bread and their insulin dosage, and began the administration of copper. He found that in severe cases it was possible to decrease the daily insulin dose by 20 to 55 units, in moderate cases by 20 to 45 units, and in mild cases to substitute copper for insulin. In some cases it was possible to increase the daily intake of white bread while decreasing the insulin. The amount of insulin that was saved by the copper depended on the severity of the diabetes, the length of time it had been administered, the individual reaction to copper given orally, and the combination of the copper administered. Schnetz believes that by acting as a catalyst the copper stored in the liver inhibits glycogenolytic stimuli and increases both the ability of the liver to fix glycogen and the formation of glycogen in the liver and muscles. There were no untoward results from the administration of copper, and he found that it produced no resistance to insulin and did no damage to the liver cells. He points out that copper has long been known to have an anti-infectious and anti-anaemic action. The low cost and agreeable method of its adminstration as compared with the unpleasant insulin injections warrant its inclusion in the diabetic armamentarium.

49 Peritoneal Oxygenation in Abdominal Tuberculosis

N. BORDIA (*Indian med. Gaz.*, April, 1937, p. 233) reports good results following oxygenation of the peritoneal cavity in abdominal tuberculosis. Preliminary exploration is performed in doubtful cases; then, under local anaesthesia, a trocar and cannula is introduced through a stab wound an inch below and lateral to the umbilicus. The trocar is removed, an adapter fitted to the cannula, and an initial amount of 200 c.cm. of oxygen allowed to flow in. The patient complains of pain on puncture of the peritoneum. Blockage of the cannula by omentum may be overcome by allowing oxygen to flow in under slightly greater pressure. The operation is repeated at weekly intervals and the quantity of oxygen increased from 350 to 500 c.cm. Pain may be complained of if too large quantities of oxygen are introduced, or if there are adhesions. The temperature usually falls, but may rise if pulmonary tuberculosis is present. A condition resembling dysentery may result from vascular congestion, but it subsides in four or five days when the gas has been absorbed. Surgical emphysema may complicate the operation but is not troublesome. Of 197 cases treated by this method 133 could be followed up. Thirty-four were cured and fifty-eight relieved after six to eight oxygenations, and most of these cases received no other treatment. Bordia concludes by explaining that the probable mode of action is the production of hyperaemia, which helps to combat the disease, and the saturation of the tissues with oxygen, which inhibits the growth of tubercle bacilli. The best results of oxygenation are obtained in early cases, when minute tubercles occur on the peritoneum; in ascitic cases the effect is not well marked. It is helpful in cases of intestinal obstruction due to extensive tuberculous adhesions, and in cases of enlarged tuberculous glands in the abdomen.

Diseases of Children

50 Lymphatic Leukaemia in Childhood

A. CASAUBON and S. COSSOY (*Sem. méd.*, B. Aires, April 29, 1937, p. 1185) record ten cases of lymphatic leukaemia in girls whose ages ranged from 2 to 12 years. All but one of the cases, in which the disease lasted fourteen months, were of the acute type, and its duration was from one to four months. The patients showed enlargement of the peripheral glands, especially those of the neck, axillae, and groins, but in none could the abdominal glands be felt during life. The spleen was always palpable, and the liver was enlarged from one to four fingerbreadths below the costal margin. Haemorrhages in the skin and from the mucous membranes were almost constant. Ulceration of the mucous mem-

branes of the mouth was present in only three cases. Pains of a rheumatic type and in and round the joints occurred in three cases. Fever of varying degree was present in every case, but neither its course nor its duration was characteristic. In only four cases was the number of leucocytes considerable—namely, 300,000, 108,800, 48,000, and 30,600. The greatest increase in the differential count occurred among the lymphocytes, which in one case formed 65 per cent. of the total white count, while the polymorphonuclears reached very low levels. The number of red corpuscles was always diminished, the lowest recorded being 640,000 with 10 per cent. haemoglobin. Blood platelets were counted in four cases and found normal in one and diminished in three. In treatment only transient improvement followed radiotherapy or blood transfusion.

51 Juvenile Delinquents

R. G. GORDON (*Arch. Dis. Childh.*, April, 1937, p. 111) draws attention to the fact that delinquency is often due to the broken home, and several cases are described in support of this view. Where the home is too unsatisfactory for the child to remain in it the Public Assistance Committee may send him to one of their cottage homes or to foster parents. When this is done at an early age the result is good, but at a later age it is not so successful. Few foster parents of the right kind are willing to take an older child who has already been in trouble. Some of these delinquent children go to residential schools, training ships, etc., where they often do well, but there are not nearly enough of these institutions to take them all. With regard to the residential schools, the ordinary entrance is through the courts; either the child must be charged with a crime or the parents must come to the courts complaining that their child is out of control. Most parents are too indifferent to do this, or they feel that it reflects badly on themselves. Moreover, magistrates are quite rightly chary of relieving a bad parent of responsibility towards his child and of putting the cost on the taxpayer. Most children do not come before the court until they have done something really bad, and even so many magistrates regard it as a first offence and put them on probation. Under proper conditions this is an excellent system, but when no co-operation can be expected from the parents it is useless.

52 Streptococcal Meningitis

J. P. SCOTT and S. X. RADBILL (*J. Pediat.*, April, 1937, p. 486), who record an illustrative case, remark that while streptococcal meningitis is a fairly common disease only a few recoveries are reported annually. In a series of 284 cases of meningitis at the Philadelphia Children's Hospital thirty-two (11 per cent.) were due to streptococci, and none of these recovered. The writer's case was that of a girl aged 6, in whom *Streptococcus haemolyticus* meningitis was apparently secondary to a severe infection of the upper respiratory tract with otitis and mastoiditis. In addition, mastoidectomy was done, and convalescent scarlet fever serum administered intraspinally may have helped the process of recovery. The patient had in all eight spinal punctures, one intravenous injection of glucose, and five whole blood transfusions. She was given intrathecally three injections, each of 30 c.cm., of convalescent scarlet fever serum, and one injection of 30 c.cm. of the same serum intramuscularly. She also had one injection intrathecally of 30 c.cm. of pooled adult serum, as no scarlet fever serum was available that day. E. D. ANDERSON (*J. Amer. med. Ass.*, May 8, 1937, p. 1591), who also records an illustrative case, states that Caussé, Loiseau, and Gisselbrecht made the first report in the literature of a case of haemolytic streptococcus meningitis with recovery after treatment with prontosil. The conclusions of all the authors appear to be that prontosil is of value in the treatment of haemolytic streptococcus infection, but has little or no effect on other strains or other organisms. Anderson's case was that of a boy aged 9, who developed otogenic haemolytic streptococcus meningitis. Recovery took place under treatment by prontosil, of which 5 c.cm. of a 2.5 per cent. solution was given intramuscularly twice daily, with two 0.3 gramme tablets of sulphanilamide three times daily by mouth. Seven doses of prontosil were given and the sulphanilamide was administered for six days. Rapid and complete recovery took place.

53 Acute Suprarenal Insufficiency

J. W. CAMERER (*Jhrb. Kinderheilk.*, April, 1937, p. 66) who records an illustrative case, states that the occurrence of acute suprarenal insufficiency as the cause of death in infectious diseases has received little attention in German paediatric literature. The symptoms are adynamia, prostration, obstinate vomiting, diarrhoea, and a fall of blood pressure. The diagnosis is confirmed by sudden aggravation of the condition and the appearance of pigmentation. Camerer's patient was a boy aged 3, who three weeks after a mild attack of scarlet fever developed symptoms of acute suprarenal insufficiency. He died in less than two months in spite of the administration of various preparations of suprarenal extract and of vitamin C. The necropsy showed extensive necrosis of all the layers of the suprarenal cortex and slight involvement of the medulla.

54 Pulmonary Tuberculosis

F. MATTHÄUS (*Dtsch. Tuber.-bl.*, June, 1937, p. 146) conducted in 1936 a follow-up study of 150 children who, in the period 1921–32 were treated at a tuberculosis hospital for children at Scheidegg-Allgäu. All gave positive reactions to cutaneous or intracutaneous tuberculin tests, and all showed radiological signs of infiltration of the lungs, the right lung being involved in 60 per cent., the left in 40 per cent. In fifty cases there had been intimate contact with cases of tuberculosis, in seventeen cases the children suffered from some form or other of surgical tuberculosis, and fifteen of them were scrofulous. In eighty-three cases coughing was noted, and the temperature was quite high in two cases and subfebrile for a considerable time in thirty-one. In 117 cases the children were continuously afebrile except for brief bouts of fever due to intercurrent infections. In 113 cases physical signs were demonstrable in the lungs, but were not well marked. The duration of hospital treatment in most of these cases was from three to four months, but the treatment of the children with surgical tuberculosis lasted from twelve to eighteen months. There were only two deaths, one from diphtheria and one from measles complicated by bronchopneumonia. The follow-up study of the surviving 148 revealed that all were well, although several were subject to frequent attacks of tonsillitis and catarrh of the upper respiratory tract. This catarrhal predisposition is, in the author's opinion, common in all children at puberty.

55 Persistent Vernix Caseosa and Exudative Diathesis

E. MAYERHOFER *et al.* (*Wien. klin. Wschr.*, May 28, 1937, p. 841) state that in the newborn there is a definite relation between persistent vernix caseosa and the exudative diathesis. Usually during the second month of life symmetrical patches below the knees are noticed which are due to incrustations of dirt on persistent remains of vernix on the subpatellar skin ridges. These patches have been noted as early as the fourteenth day of life and as late as the seventh month, and they may occur on any part of the body. Mayerhofer noted the condition in 16 per cent. of 461 newborn children. He and his coworkers found that the exudative diathesis coexisted in eighty-five of 120 children with persistent vernix caseosa. It manifested itself in various eczematous forms, in inter-

trigo, lichen, seborrhoea capitis, marked presence of lanugo hairs, lingua geographica, and in some cases in severe asthmatic attacks. The persistence of vernix caseosa is thought to be due to an endogenous constitutional factor and an exogenous hormonal factor. Its presence is the earliest and most important indication of a possible later development of the exudative diathesis.

Obstetrics and Gynaecology

56 Pregnancy and Parkinsonism

T. LUSTRA, R. C. BIZZOZERO, and P. A. ALEGRE (*Ann. bras. Gynec.*, May, 1937, p. 373), who record an illustrative case, state that the association of pregnancy and post-encephalitic Parkinsonism is very uncommon. Their patient, who had given birth to seven children, was aged 38, and had suffered eight years previously from some undiagnosed febrile disease during the fifth month of her fourth pregnancy. After this confinement she presented tremors of the left leg, which afterwards spread to both arms. Subsequently her expression became fixed and her movements slow and difficult. The fifth pregnancy, during which a diagnosis of post-encephalitic Parkinsonism was made, ended in a normal confinement, and the baby was normal; the next two pregnancies were also uneventful and the children were normal. According to the literature, at least 75 per cent. of the cases of acute encephalitis in pregnancy develop symptoms of Parkinsonism, and most authors maintain that it does not have any ill effect on the pregnancy. The frequency of abortion or premature labour is no higher than usual. Conversely, opinions differ as to the effect of pregnancy or childbirth on Parkinsonism; many writers say that the nervous condition is not affected. Roques, on the other hand, reported thirty-four cases in which Parkinsonism was aggravated or first appeared during pregnancy. In twenty-one cases the onset or aggravation of this disease occurred at an early stage, and in fourteen cases early in the puerperium. Transmission of nervous disease to the child appears to be exceedingly rare.

57 Tocography

S. LÓRÁND (*Zbl. Gynäk.*, May 29, 1937, p. 1285) has analysed tocographically the uterine and abdominal contractions during labour. He distinguishes the following types of labour pains: the pains of the normal uterus, the optimal labour pains, and the pains met with in primary weakness of the uterus. This last is subdivided into hypotonic, normotonic, and hypertonic or spastic. There is also the weakness caused by deficient abdominal contractions, a hypotonic type with contractions stronger than the normal, and a hypertonic type with contractions of the average strength. The early recognition of these variations in contractions allows a rational individual management of labour in pathological cases.

58 Granulosa Cell Tumours

J. V. MEIGS and L. PARSONS (*New Engl. J. Med.*, April 22, 1937, p. 681) describe several granulosa cell tumours of the ovary and suggest that they are not uncommon. There are various cell structures in the tumour, and the authors distinguish three types—the granulosa cell type, the luteoma, and the "thecoma." The clinical diagnosis is confirmed by amenorrhoea or menorrhagia, high content of oestrin in the urine, and by an endometrium of the oestrin phase. The presence of the tumour is also suggested by precocious genital development and the early onset of menstruation. Benign tumours of the breast in women of all ages are also suggestive of this condition. The tumours are usually benign, but may also be malignant. In older women radical surgical operation is the treatment of choice.

Pathology

59 Tubero-infundibular Diabetes

M. KAHANE (*Rif. med.*, April 24, 1937, p. 606) records his experiments on ten white rats to determine the existence of a tubero-infundibular diabetes. The glycaemia was estimated by the Bang-Weiss method and the hepatic glycogen by a modification of Bierry's method. Punctures of the infundibulum were made with the thermocautery through the palate and the infundibular region was examined post mortem. Hyperglycaemia began immediately after the puncture and showed its highest increase in three hours, returning to normal or subnormal in twenty-four hours, while the hepatic glycogen showed a progressive diminution.

60 Corpus Luteum Hormone

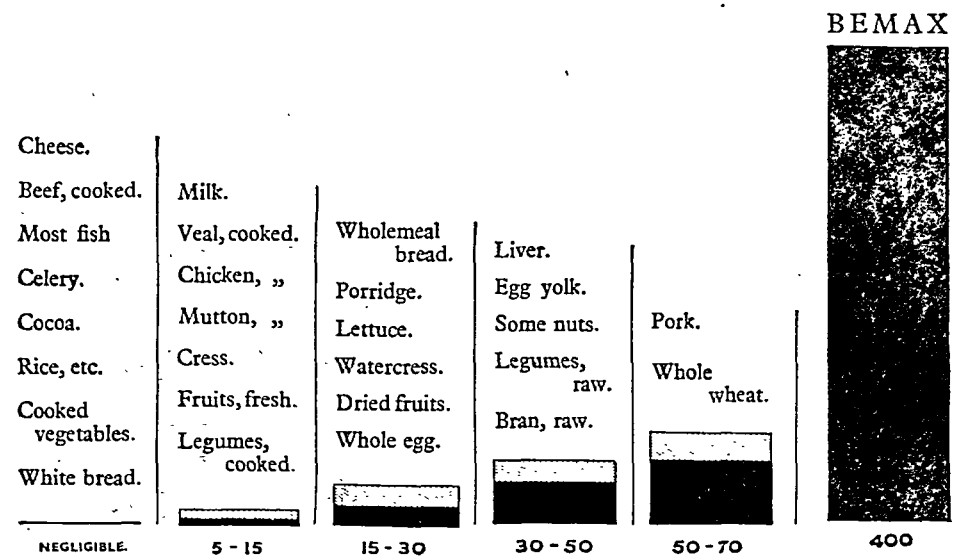
K. EHRHARDT and E. HARDT (*Med. Welt*, May 29, 1937, p. 745) have investigated human and animal placentae for the presence of corpus luteum hormone, and have come to the following conclusions. The hormone is present in human placenta between the fifth and the eighth months of pregnancy. It was found in two out of six cases in extracts of horse placenta, and in all cases of goat placenta, but was absent in cow, sheep, and dog placenta. Its presence could not be demonstrated in the foetal organs, but slight traces were found in the foetal urine. A large quantity was found in an extract of a hydatid mole. The administration of this hormone to pregnant mice caused intra-uterine death of the foetuses. It should, therefore, not be given indiscriminately to pregnant women.

61 Addition of Vitamins to Butter and Margarine

H. MÖLLGAARD (*Ugeskr. Laeg.*, June 3, 1937, p. 604), who acts in an advisory capacity to the dairy industry in Denmark, states that recent investigations have shown that a surprisingly large proportion of the community suffer from more or less latent vitamin A deficiency, and that the vitamin A content of winter butter is comparatively low. If the dairy industry goes on ignoring this state of affairs, and if cattle continue to be fed to a large extent on oil cake in winter, the time will come when Danish butter may find a dangerous competitor in margarine to which vitamins have been added. In Professor Möllgaard's opinion the farmer should meet the eventuality of margarine containing more vitamins than winter butter by increasing the winter supply of preserved, protein-rich green fodder. The realization during the past two years of this principle in certain quarters has not, however, brought up the vitamin A content of winter butter to the level margarine will soon attain in this respect, and during the past year investigations have been conducted in connexion with the extraction of carotin, a source of vitamin A, from lucerne. One product of these investigations has been an oily solution of which the vitamin A content is between 4,500 and 5,000 international units per gramme, from 66 to 70 per cent. of its colouring matter consisting of β-carotin. This carotin oil is not costly to produce, and it can be added to butter in such quantities that its vitamin A content is raised by about 10,000 units per kilo without the properties of the butter being altered in other respects. Similar tests have been carried out with margarine, and the stability of carotin oil in butter and margarine has also been investigated. As the comparatively high vitamin A content of Danish summer butter mainly depends on its carotinin content, the addition of carotin to butter as a colouring agent and to raise its vitamin A content must be considered as quite rational. Professor Möllgaard is still diffident about artificially raising the vitamin D content of margarine, for he considers that the chemistry of cholesterin is still so imperfectly understood that it would be unwise to take liberties with it in this respect.

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Biochemical J., 1935, *and other sources*



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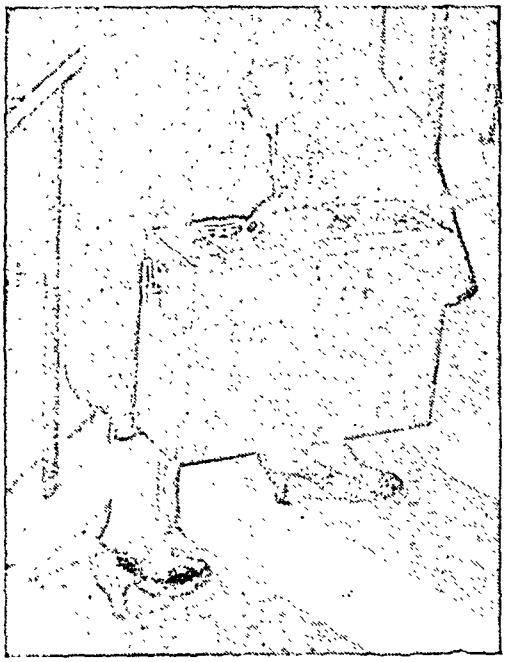
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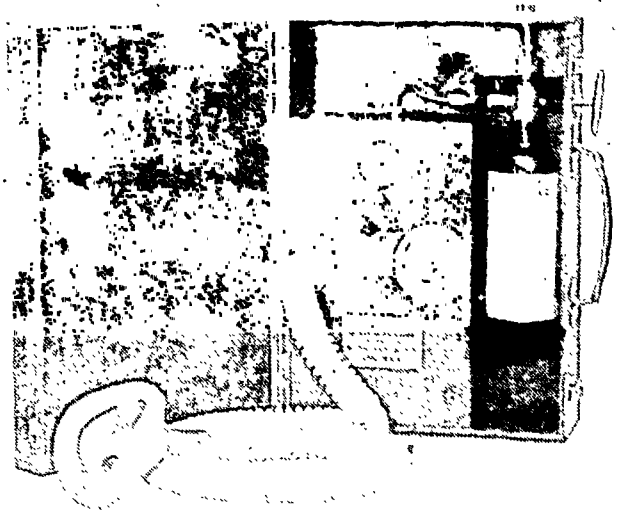
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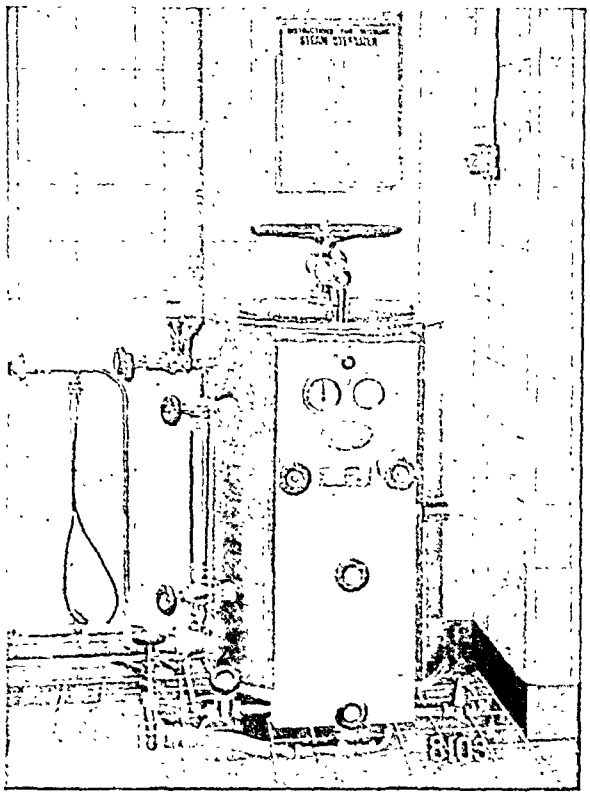


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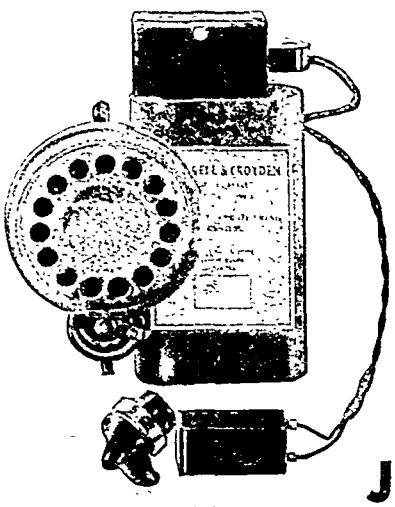
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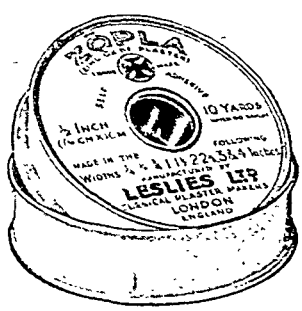
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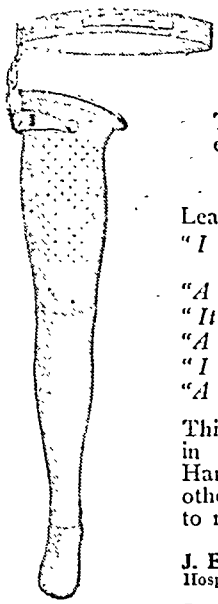
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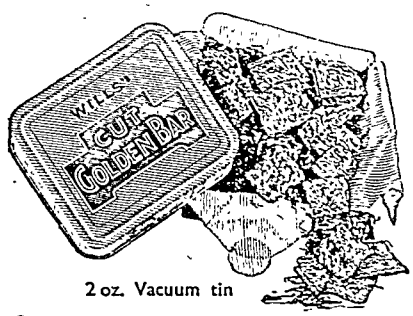
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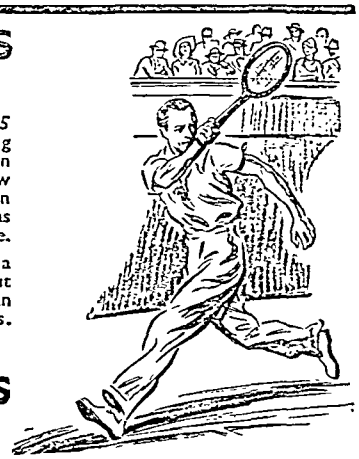
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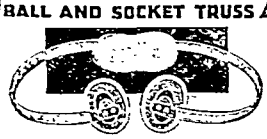
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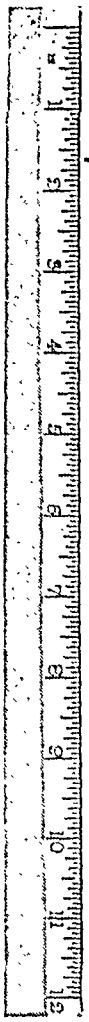
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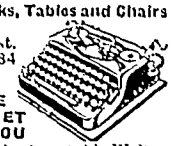
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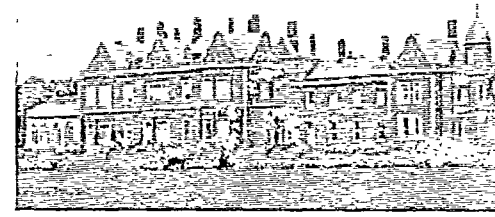
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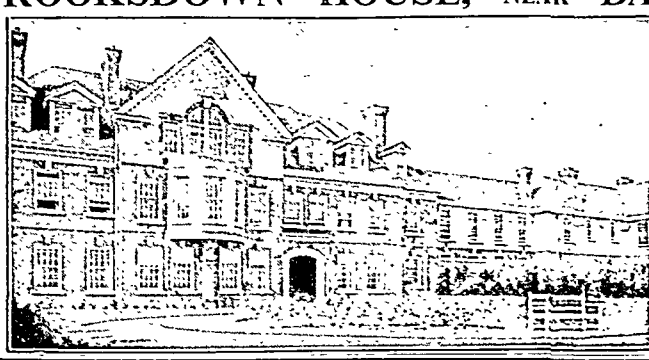
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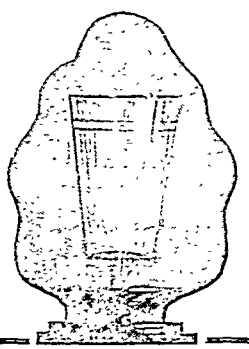
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Examinations for Part I (Physics) will be held in February and July, 1938, and for Part II (Radiology, Electrology, and Pathology) in July and October, 1938.

The University has decided that the Diploma shal cease to be granted after 1941. The last course for the Diploma will start in October, 1940, and the last examination will be held in October, 1941.

The Courses are open to men and women whose medical qualifications are approved by the General Medical Council for purposes of registration, and who satisfy the Committee that they have had sufficient post-graduate clinical experience.

Further information about the Courses may be obtained from:
G. STEAD, M.A., Secretary for the Diploma, Cavendish Laboratory, Cambridge,
or THE GENERAL SECRETARY,
British Institute of Radiology, 32, Welbeck Street, London, W.1.

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The usual three weeks' Post-graduate Course for General Practitioners will be held this autumn from Monday, September 20th, to Friday, October 8th. The course will include clinical instruction in Surgery (including Orthopaedics), Medicine (including Neurology, Cardiology, Fevers, Children's Diseases and Skin Diseases), Obstetrics and Gynaecology, and Diseases of Eye, Ear, Nose and Throat. Instruction will be given each afternoon in the Medical School in Clinical Pathology, Bacteriology, Physiology and Biochemistry. There will also be demonstrations on the uses of Radium and lectures on Medicine and Therapeutics. Fee for the course, five guineas.

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Professor DAVID S. TORRENS,
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Prospectus from the DEAN, West London Hospital, Hammersmith, W.6

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Further particulars may be obtained from:—
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TRAINING and EXPERIENCE in the PSYCHO-THERAPY of CHILDHOOD are offered to Medical men and women. One year course beginning in September.

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Applications are invited for the post of RESIDENT ANAESTHETIST AND EMERGENCY OFFICER (male). The appointment will be for three months. Salary at the rate of £130 per annum, with board, residence and laundry. Candidates, who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four recent testimonials, to the undersigned as soon as possible.

J. A. BEARDSALL,
July 12th, 1937. Secretary-Superintendent.

THE ROYAL SOCIETY.

Foulerton Research Fellowships.

Applications are invited by the Council of the Royal Society for two FOULERTON RESEARCH FELLOWSHIPS IN MEDICINE, tenable in any Hospital or Medical School in the British Isles. Candidates, who must be of British nationality and British parentage, should supply the usual personal details and give the names of TWO referees. Testimonials will not be considered. Applicants and referees at a distance may write direct to the address given below, without first obtaining forms. The subject of the proposed research, and the place at which it would be carried out, together with the name of the Head of the Department should be given.

The appointment will be for two years in the first instance, from January 1st, 1938, and may be renewed annually up to a total of five years. It will be subject to the conditions governing Royal Society Research Appointments. The stipends will be £600–£800 per annum, with superannuation benefits.

Applications should be made on forms to be obtained from the Assistant Secretary, The Royal Society, Burlington House, London, W.1, and should be received as early as possible, in any case not later than Saturday, October 16th, 1937.

ROYAL NAVAL DENTAL SERVICE.

The Establishment of DENTAL OFFICERS in the Royal Navy has been increased, and applications are invited for EIGHT APPOINTMENTS to be filled in October next. Further appointments will be offered later.

Candidates must be British subjects of pure European descent and sons of persons who are British subjects. They must be under the age of 28 years on the date of entry, possess the degree or diploma of a British University or College of Surgeons, registered under the Dentists' Act in force in the United Kingdom, and physically fit for service in any climate. Unmarried candidates will be preferred.

Approved candidates will be required to present themselves at the Admiralty for physical examination by a Board of Naval Medical Officers and interview by a Selection Committee, and if selected for appointment will be given a Short Service Commission for six years. At the end of this period they will retire with a gratuity of £1,000 unless during the fifth year of service they have applied for, and have been accepted for, transfer to a Permanent Commission.

Candidates who have, since qualifying, held full time appointments as House Surgeons at Dental Hospitals and Schools will be eligible for an antedate of seniority up to a maximum of *six months*

Application forms and a pamphlet showing the regulations for entry and outlining the conditions of service, rates of pay and allowances, etc., may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1.

Applications for entry in October must reach the Admiralty not later than September 1st.

UNIVERSITY OF LONDON

The Senate invite applications for the UNIVERSITY READERSHIP IN BACTERIOLOGY, tenable at the British Postgraduate Medical School. Initial salary £800 a year. Applications (12 copies) must be received not later than first post on September 15th, 1937, by the Academic Registrar, University of London, W.C.1, from whom further particulars should be obtained.

THE AUCKLAND HOSPITAL BOARD.

A DEPUTY MEDICAL SUPERINTENDENT is required for the General Hospital at Auckland, New Zealand. Particulars of appointment and form of application are obtainable at the Office of the High Commissioner for New Zealand, 415, Strand, London, W.C.2.

Auckland, New Zealand. H. A. SOMMERVILLE, Secretary.
June 3rd, 1937.

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Early application should be made to the Director of Education.

UNIVERSITY OF GLASGOW.

LECTURESHIP IN HUMAN EMBRYOLOGY AND HISTOLOGY.

The University Court invite applications for the vacant Lectureship in Human Embryology and Histology in the Department of Anatomy. Initial salary £500 to £600 per annum (subject to superannuation provision) according to experience and qualifications. Applications (five copies), which should give particulars of training and experience and the names of referees acquainted with the candidate's work, should reach the undersigned not later than August 6th, 1937. Further particulars will be sent on request.

J. S. MUIRHEAD,
July, 1937 Secretary of University Court.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

ASSISTANT IN THE DEPARTMENT OF MORBID ANATOMY.

Applications are invited for the appointment of Assistant in the Department of Morbid Anatomy at University College Hospital Medical School, commencing in the month of September, 1937.

Salary £250 per annum, with superannuation benefits and emoluments.

Applications should be addressed to the Dean of the Medical School, University Street, W.C.1, and must be received on or before July 30th, 1937.

BOARD OF EDUCATION.

The Board of Education invite applications for appointment to a new post of DIETICIAN or NUTRITIONIST early in 1938. The selected candidate will be employed as inspector of the arrangements made by Local Education Authorities for the provision of meals. Applicants must possess qualifications in Domestic Science and experience in cooking. Knowledge of physiology, training in *dietetics, experience in catering for large numbers* and in social work would be additional qualifications.

The scale of salary is £500—£25—£800. A higher minimum salary may be paid in exceptional circumstances.

Further particulars, together with the application form, which must be returned completed not later than Saturday, August 7th, 1937, may be obtained on application in writing to the Secretary, Board of Education, Whitehall, London, S.W.1.

THE KIDDERMINSTER AND DISTRICT GENERAL HOSPITAL.

JUNIOR HOUSE SURGEON (Male) required. Salary £100 per annum, with residence, board and laundry. Applications, with not more than three testimonials, to be sent to the Secretary, Miss Susan Smith, South Cliff, Kidderminster.

HIS MAJESTY'S COLONIAL SERVICE

COLONIAL MEDICAL SERVICE

The Secretary of State for the Colonies proposes to select within the next few months not less than five Medical Officers to fill vacancies, the majority of which will occur in Tropical Africa or in Malaya.

QUALIFICATIONS. Candidates must be British subjects of European parentage, under 35 years of age, and must possess a medical qualification registrable in the United Kingdom. Preference will be given to candidates who have held Hospital or Public Health appointments or who have special knowledge of anaesthetics, radiology, surgery, medicine, ophthalmology, gynaecology and midwifery, diseases of the ear, nose and throat, venereal diseases, etc.

SALARY. Initial salaries vary from £600 to £700 and rise by increments to a maximum of between £1000 and £1200.

PRIVATE PRACTICE. Private practice is not allowed as of right, but in the case of some appointments it is permitted on certain conditions.

QUARTERS. In Tropical Africa, free quarters, or an allowance in lieu, are provided. In Malaya, quarters are provided at an annual rental not exceeding 6% of the officer's salary.

PASSAGES. Free first-class passages are provided, on first appointment and when proceeding on and returning from leave. Assistance is also given towards family passages.

TERMS OF APPOINTMENT. The appointments are pensionable, subject to a probationary period which varies from two to three years.

COURSES OF INSTRUCTION IN TROPICAL MEDICINE AND HYGIENE. Selected candidates will normally be required to attend a course of instruction leading to the Diploma in Tropical Medicine and Hygiene before proceeding overseas.

DUTIES. Although Medical Officers are appointed in the first instance for general service, there are opportunities for work in special branches of medicine and surgery, in public health and in medical research.

Further particulars and forms of application may be obtained from the **Director of Recruitment (Colonial Service), 2, Richmond Terrace, Whitehall, London, S.W. 1.**

ROYAL NAVAL MEDICAL SERVICE.

Vacancies exist for Medical Officers in the Royal Navy, and applications are invited for entry in October, 1937.

Candidates below the age of 28 years are preferred, and they must be registered under the Medical Acts. No examination in professional subjects will be held, but candidates will be required to attend for interview by a Selection Board.

Selected candidates will be entered for Service for a period of three years in the first instance, which may be extended to five years at the discretion of the Admiralty.

At the end of three years' service officers may retire with a gratuity of £400, but those who serve for five years will receive £1,000.

At the end of five years' Short Service permanent commissions will be given to selected officers who wish to make the Naval Medical Service their permanent career. Officers transferred to the permanent list will receive a gratuity of £1,000 (less Income Tax).

Opportunities are available for officers on the permanent list to specialise, and ample provision is made for Post-Graduate study.

Copies of the regulations for entry and conditions of service, including rates of pay and allowances, may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1, and from the Deans of all Medical Schools.

Applications for entry from intending candidates must be received not later than August 31st, 1937.

CITY OF BIRMINGHAM.

PUBLIC HEALTH DEPARTMENT.

DUDLEY ROAD HOSPITAL (920 Beds).

ASSISTANT PATHOLOGIST.

Applications are invited for the post of Assistant Pathologist at Dudley Road Hospital, at a salary of £650 per annum, rising by annual increments of £50 to £800 per annum.

Applicants must have special knowledge and experience in morbid anatomy and bacteriology and be engaged wholly or chiefly in the practice of Pathology. The officer appointed will work under the Pathologist to the Municipal Hospitals.

The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

The successful candidate will be required to pass an approved medical examination, to contribute to the Superannuation Scheme established under the Local Government and Other Officers' Superannuation Act, 1922, as amended by Section 82 of the Birmingham Corporation Act, 1935 (Annuities for Widows), and, if under 30 years of age, to join the Birmingham Municipal Officers' Widows' and Orphans' Pensions Scheme.

The appointment will be terminable by one month's notice on either side.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be addressed to Dr. F. W. Ellis, Medical Superintendent, Dudley Road Hospital, Birmingham, 18, not later than July 24th, 1937, from whom further particulars regarding the post can be obtained.

F. H. C. WILTSHIRE.
The Council House, Town Clerk.
Birmingham, 1.

CITY OF BIRMINGHAM.

ASSISTANT MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE.

The Public Health Committee invite applications from Medical Officers (women) to take charge of Toddlers' Clinics in connection with the Maternity and Child Welfare Scheme. Applicants must have held a six-months' appointment as Physician in a Children's Hospital, and also held a six-months' resident appointment in a Maternity Hospital. It is desirable that applicants should hold the Diploma in Public Health, and if they have not already obtained the Master of Midwifery Diploma they may be required to do so within a subsequent period. The salary will be £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum. The appointment will be subject to the Birmingham Corporation Superannuation Scheme and to the candidate passing a medical examination, and will be subject to three months' notice on either side.

The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by her.

Applications, endorsed "Medical Officer for Maternity and Child Welfare," and accompanied by copies of three recent testimonials, to be made on a form obtainable from the Medical Officer of Health, Council House, Birmingham, 3, and returned to him on or before July 24th, 1937.

BRIDGEND URBAN AND PENYBONT RURAL DISTRICT COUNCILS.

JOINT APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH FOR MATERNITY AND CHILD WELFARE.

The above Councils invite applications from fully qualified medical men or women for the post of whole-time Assistant Medical Officer for Maternity and Child Welfare work.

Candidates should have had three years' (at least) experience in the practice of their profession and special experience in

(a) Child Welfare
(b) Ante-natal work,

subsequent to qualification.

It is desirable that candidates should have—
(1) had experience in general practice;
(2) a diploma in Public Health.

The salary will be at the rate of £500 per annum, rising by increments of £25 per annum to £700 per annum. Two-thirds of the salary will be subject to a deduction of 5 per cent. in accordance with the provisions of the Local Government and Other Officers' Superannuation Act, 1922. Travelling expenses in the Penybont area will be paid by the Penybont Rural District Council.

The person appointed will be required to give his or her whole time to the work, and must not engage in general practice.

The appointment will be determinable by three months' notice on either side.

Applications, on forms to be obtained from me at the address below, are to be received by me at the same address not later than 10 a.m. on Monday, July 19th, 1937.

By Order,
Penybont Offices, W. E. BEVAN,
Coity Road, Clerk to the Penybont
Bridgend, Glam. Council.
July 5th, 1937.

CITY OF PORTSMOUTH.

ST. MARY'S HOSPITAL.

The Portsmouth City Council invite applications for the appointment of SENIOR RESIDENT MEDICAL OFFICER for Saint Mary's Hospital, Maternity Department. The appointment includes service at any institution belonging to the City Council that may be required and will be limited to a term not exceeding two years. Salary for the first year £350 and for the second year £375. The residential emoluments are valued at £125 per annum, and the appointment will be subject to one month's notice on either side.

Candidates must be single gentlemen, duly registered, and age 25 to 30 years, and must have had at least one year's experience in a Maternity Hospital.

The Department has at present about 800 births per annum and an Ante-natal and Post-natal clinic is conducted in connection therewith. There is a Resident Medical Superintendent at the Hospital and a Consultant Obstetrician attends regularly and is on call for emergencies.

The appointment is one of value to a medical man specialising in obstetrics who desires to take the M.M., or M.C.O.G., Diplomas.

Application forms, giving conditions of appointment, may be obtained from, and should be returned to, the undersigned, Guildhall, Portsmouth, on or before 10 a.m. on Tuesday, July 27th, 1937.

Canvassing will be a disqualification.
The Guildhall, F. J. SPARKS.
Portsmouth, Town Clerk.
July 6th, 1937.

CITY AND COUNTY OF BRISTOL.

ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council invite applications for a whole-time male Assistant Medical Officer of Health. Age not exceeding 40 years. Salary £500 per annum, rising by annual increments of £50 to £700. The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922. The Diploma of Public Health is essential.

The duties will consist principally of examination of children in the Council's Secondary, Elementary and Special Schools, treatment in School Clinics, etc., but the officer appointed may also be required to work in any department of the Medical Officer of Health of the City and Port. He will especially be required to take his duty in rotation at the Port.

Applications, which must be on the form provided for this purpose, should be accompanied by not more than three recent testimonials, and must be received by the undersigned not later than Friday, July 23rd, 1937. Envelopes should be endorsed "Assistant Medical Officer of Health."

Canvassing will disqualify.
Council House, JOSIAH GREEN,
Bristol, 1. Town Clerk
July 5th, 1937.

LINCOLNSHIRE (KESTEVEN) COUNTY COUNCIL.

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from qualified medical men for the post of Assistant Medical Officer of Health.

The Officer appointed will be required to act as Assistant Tuberculosis Officer and School Medical Officer, and to undertake Maternity and Child Welfare Work, and such other duties as may be assigned to him.

The salary will be £500 per annum, rising by annual increments of £25 to £700, together with travelling allowance in accordance with the County Scale. Approved previous experience will be taken into consideration.

The appointment, which will be terminable by three months' notice on either side, will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the successful candidate will be required to pass the necessary medical examination.

Applications should be made on forms which may be obtained from the undersigned and must reach him not later than July 23rd, 1937.

Canvassing in any form will be a disqualification
County Offices, W. T PHIPPS,
Sleaford, Lincs. Clerk of the County Council.

GENERAL INFIRMARY, SALISBURY.

(Voluntary Hospital, 191 beds, now in course of extension to 225 beds.)

RESIDENT MEDICAL OFFICER (male)

required to commence duty as soon as possible.

The appointment is for one year, including a three months' probationary period, with the option of extension.

Candidates must have held at least one appointment at a recognised hospital as House Physician and/or House Surgeon and Anaesthetist, either separately or in conjunction with the former.

He must reside in the Infirmary and devote his whole time to the service of the Infirmary.

Salary £250 per annum, with board-residence.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary.

COUNTY BOROUGH OF OLDHAM.

THE MUNICIPAL HOSPITAL.

RESIDENT SURGICAL OFFICER.

Applications are invited from fully qualified Medical Practitioners for the position of Resident Surgical Officer at the Municipal Hospital.

The appointed candidate will work under the direction of the Medical Superintendent and the Visiting Surgeons.

The duties are mainly surgical (general and emergency), and preference will be given to candidates possessing the F.R.C.S. or other higher surgical qualifications and previous surgical experience.

The appointed candidate will deputise for the Medical Superintendent when required, and undertake such duties as the Council may direct.

He must devote his whole time to the duties of the office, and will not be allowed to engage in private practice.

The salary will be at the rate of £500 per annum, rising by annual increments of £25 to £550, together with board-residence and laundry. All fees and emoluments of every kind whatsoever must be handed over to the Corporation.

The appointment is for a period of two years, and is terminable by two months' notice on either side. It is also subject to the passing of a satisfactory medical examination.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be forwarded to the Medical Officer of Health, Town Hall, Oldham, and endorsed "Resident Surgical Officer," so as to reach him not later than July 26th, 1937.

Canvassing in any form will be a disqualification.
JOSEPH J. WILLIAMS, LL.D.
Town Hall, Town Clerk.
Oldham.
July 5th, 1937.

AMENDED ADVERTISEMENT.

CITY OF PLYMOUTH.

CITY GENERAL HOSPITAL (570 Beds).

DEPUTY MEDICAL SUPERINTENDENT.

Applications are invited from fully qualified male Medical Practitioners for the post of Deputy Medical Superintendent at the City Hospital, Plymouth. The appointed candidate will work under the direction of the Medical Superintendent. The duties are mainly medical and candidates should have had medical experience, and preference will be given to candidates possessing a higher medical qualification.

Salary at the rate of £450 per annum, rising by annual increments of £50 to £550, with full residential emoluments.

The appointment will be held during the pleasure of the Council and will be subject to:

(1) The candidate passing a medical examination.
(2) To the provisions of the Local Government and Other Officers' Superannuation Act.
(3) Six weeks' notice on either side.

The officer will be required to refund to the Council all fees, allowances and emoluments other than the foregoing received by him.

Further particulars of the post may be obtained from the Medical Superintendent, City Hospital, Plymouth. Forms of application may be obtained from the undersigned, and should be returned, accompanied by copies of not more than three recent testimonials, not later than Monday, July 26th, 1937.

Town Hall, T. PEIRSON,
Stonehouse, Medical Officer of Health.
Plymouth.
July, 1937.

CITY OF PORT-OF-SPAIN.

APPOINTMENT OF A MEDICAL OFFICER OF HEALTH.

The Port-of-Spain City Council invite applications for the post of Medical Officer of Health for the City of Port-of-Spain.

The duties of the office are as set forth in the bye-laws made by the Central Board of Health and published in the Trinidad Royal Gazette of October 25th, 1917, page 1975-77.

Every applicant must be, or entitled to be, a member of the Medical Board of Trinidad and shall be the possessor of a Diploma of Public Health, Sanitary Science or State Medicine, registered or entitled to be registered in Great Britain and Ireland.

The office is a whole time one and pensionable under the provisions of the Municipal Corporations (Pensions) Ordinance, No. 29 of 1936. The salary attached to the post is £500 per annum, rising by equal annual increments of £25 to £1,000, with a travelling allowance of £75 a year.

The person appointed will be required to furnish a bond in the sum of £100 for the due performance of his duties.

Applications, stating age, qualifications and experience, should reach the undersigned at the Town Hall, Port-of-Spain, Trinidad, B.W.I., not later than July 31st, 1937.

The Town Hall, E. PRADA,
Port-of-Spain, Town Clerk.
April 29th, 1937.
Trinidad, B.W.I.

CITY OF PORTSMOUTH.

ASSISTANT MEDICAL OFFICER OF HEALTH (Male).

Applications are invited from unmarried Medical Practitioners possessing the Diploma in Public Health for the following appointment:—

Assistant Medical Officer of Health and Second Resident Medical Assistant. Salary £500-£700, rising by annual increments of £25.

The gentleman appointed will be required to devote his whole time to the office, which will comprise duties in connection with Infectious Diseases, Tuberculosis, Maternity and Child Welfare, and any other duties assigned to him by the Medical Officer of Health. He will be required to reside at the Infectious Diseases Hospital.

There will be a deduction of £125 per annum in respect of the usual residential emoluments.

The position is designated as an established post under the Local Government and Other Officers' Superannuation Act, 1922, and the total salary will be subject to the statutory deduction of 5 per cent. under that Act.

Forms of application, together with conditions of appointment, may be obtained from the Medical Officer of Health, The Guildhall, Portsmouth.

Applications on the prescribed form, endorsed "Assistant Medical Officer of Health," together with copies of not more than three recent testimonials, must be delivered to the undersigned on or before Thursday, July 29th, 1937.

Canvassing, either directly or indirectly, will be deemed a disqualification.

The Guildhall, Portsmouth. July 12th, 1937. F. J. SPARKS, Town Clerk.

HULL CORPORATION HEALTH DEPARTMENT.

BEVERLEY ROAD INSTITUTION (HOSPITAL).

ASSISTANT MEDICAL OFFICERS.

The Corporation of Hull invite applications from registered medical practitioners, of either sex, under the age of 40 years, for appointment as Assistant Medical Officers at the above-named hospital, for a period of one year.

Salary is at the rate of £350 per annum, together with board, residence and laundry.

The Hospital Section contains 400 beds, and is equipped with *X*-ray and Ultra-Violet Light Departments.

In the case of one appointment, preference will be given to candidates with experience in medicine and in the treatment of mental diseases; in another, experience in surgery will be considered an additional qualification.

A form of application, together with conditions of appointment and a list of duties, may be obtained from the undersigned, to whom completed applications should be returned not later than 10 a.m. on Monday, July 26th, 1937.

Health Department, Guildhall, Hull. July 9th, 1937. NICOLAS GEBBIE, M.D., Medical Officer of Health.

CITY OF LIVERPOOL.

PORT SANITARY AND HOSPITALS COMMITTEE.

RESIDENT ASSISTANT MEDICAL OFFICERS.

WALTON HOSPITAL (1,863 beds).
SMITHDOWN ROAD HOSPITAL (1,220 beds).
MILL ROAD INFIRMARY (762 beds).

Applications are invited for the above appointments, which fall vacant on October 1st, 1937.

The appointments are for a period of one year, at a salary of £200 per annum, together with the usual residential allowances. Canvassing will be deemed a disqualification.

Applications to be made on forms obtainable from the Medical Officer of Health, Municipal Annexe, Dale Street, Liverpool 2, to be endorsed "Resident Assistant Medical Officer," and returned to the undersigned not later than July 31st, 1937.

Municipal Buildings, Liverpool, 2. July, 1937. W. H. BAINES, Town Clerk.

LANCASHIRE COUNTY COUNCIL.

BIDDULPH GRANGE ORTHOPAEDIC HOSPITAL.

Applications are invited from duly qualified and registered medical practitioners (unmarried) for the post of SENIOR HOUSE SURGEON at the above Hospital, which contains 88 beds. Salary is at the rate of £250 per annum, together with board, residence and laundry.

Candidates must have had experience in a General Hospital, and preference will be given to candidates who have had orthopaedic experience.

The appointment will be for a period of six months in the first instance and for a further six months at the option of the Council, but will not be renewable after that time.

Applications, with copies of two recent testimonials, should be sent not later than August 2nd, 1937, to Dr. F. Hall, School Medical and Child Welfare Department, County Offices, Preston.

Duties to commence October 1st, 1937.

GEORGE ETHERTON, Clerk of the County Council.

GLAMORGAN COUNTY COUNCIL.

PUBLIC ASSISTANCE COMMITTEE.

LLWYNYPIA HOSPITAL (RHONDDA).

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners (male), under 35 years of age, for the appointment of Resident Assistant Medical Officer at Llwynypia Hospital (182 beds).

The person appointed will be required to assist under the direction of the Medical Superintendent in the general work of the hospital, and should have sufficient post-graduate experience in Midwifery to conduct all except the most difficult labours. Post-graduate experience in surgery will be an additional qualification.

Salary £350 per annum, rising by £25 annually to £450 per annum, with residential emoluments valued for superannuation purposes at £75 per annum.

The appointment, which will be terminable by two months' notice on either side, is a designated post under the Local Government and Other Officers' Superannuation Act, 1922, and the successful candidate will be required to pass an examination as to physical fitness.

Applications, stating age and qualifications, and accompanied by copies of not more than three recent testimonials, must be received by the County Medical Officer, Glamorgan County Hall, Cardiff, not later than the first post on Friday, July 30th, 1937.

D. J. PARRY, Deputy Clerk of the County Council. Glamorgan County Hall, Cardiff. July 10th, 1937.

SURREY COUNTY COUNCIL.

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER.

JUNIOR ASSISTANT MEDICAL OFFICER (either sex) required at County Sanatorium (300 beds), Milford, near Godalming. Resident experience in general hospital essential. Appointment is for six months, renewable for further six months. Salary £350 per annum, less a deduction of £100 per annum in respect of board, lodging and laundry. Appointment subject to the Staffing Regulations of the County Council. Forms of application from County Medical Officer, County Hall, Kingston-upon-Thames, to whom forms should be returned, with copies of three recent testimonials, by Saturday, July 31st, 1937.

COUNTY BOROUGH OF EASTBOURNE.

ST. MARY'S MUNICIPAL HOSPITAL.

RESIDENT HOUSE SURGEON.

Applications are invited from unmarried registered Medical Practitioners for appointment as Resident House Surgeon at the above Hospital.

Salary £150 per annum, with board, residence, etc.

The appointment is for twelve months, determinable at any time by one month's notice.

Application forms, together with conditions of appointment and duties, can be obtained from the undersigned. The application form, when completed, should be returned to me.

Avenue House, The Avenue, Eastbourne. W. G. WILLOUGHBY, Medical Officer of Health.

KENT COUNTY COUNCIL.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Resident Assistant Medical Officer at the County Hospital, Pembury (620 beds).

The salary for the appointment is £250 a year, with residential emoluments which are valued at £120 a year.

The appointment is a whole-time one, and will be for a period of one year only and not renewable.

Forms of application can be obtained from the Public Assistance Officer, Tonbridge Road, Maidstone, to whom applications must be sent by 10 a.m. on Monday, July 26th, 1937.

Sessions House, Maidstone. July 8th, 1937. W. L. PLATTS, Clerk of the County Council.

KENT COUNTY COUNCIL.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Resident Assistant Medical Officer at the Dartford Public Assistance Hospital (660 beds).

The salary is £250 a year, with residential emoluments, which are valued at £120 a year.

The appointment is a whole-time one, and will be for a period of one year only and not renewable.

Forms of application can be obtained from the Public Assistance Officer, Tonbridge Road, Maidstone, to whom applications must be sent by 10 a.m. on Monday, July 26th, 1937.

Sessions House, Maidstone. July 8th, 1937. W. L. PLATTS, Clerk of the County Council.

BOROUGH OF LUTON.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOLS MEDICAL OFFICER.

Applications are invited from registered medical practitioners for the above-mentioned appointment, at a commencing salary of £500 per annum, rising by annual increments of £25 to £700 per annum, with a car allowance of £40 per annum.

Applicants must hold the diploma of Public Health and have had experience in infectious diseases work. Experience in school medical and child welfare work will be an advantage. The duties will be largely clinical, but the post will offer an opportunity for experience in all the usual public health duties.

The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the successful applicant will be required to pass satisfactorily a medical examination.

Forms of application and full particulars relating to the appointment may be obtained from the undersigned, to whom applications, together with copies of three recent testimonials, enclosed in an envelope endorsed "Assistant Medical Officer of Health," must be delivered not later than Tuesday, July 20th, 1937.

Canvassing, directly or indirectly, will disqualify.

Town Hall, Luton. July 7th, 1937. W. H. ROBINSON, Town Clerk.

COUNTY BOROUGH OF DERBY.

DERBY CITY HOSPITAL.

ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Assistant Resident Medical Officer (male) at the above hospital of 300 beds. This hospital provides treatment for acute medical and surgical cases, tuberculosis, obstetrics, and children's diseases, etc.

Candidates must be registered in Medicine and Surgery.

The appointment is for a period of six months; two months' notice of termination of duties may be given on either side. The successful applicant will be required to commence duties at the end of August or in early September.

Salary at the rate of £200 per annum, with board and residence.

Applications, stating age, experience, and accompanied by three recent testimonials, should be sent to the undersigned as soon as possible.

Public Health Department, 1, Derwent Street, Derby. GORDON LILICO, Medical Officer of Health.

NORTHAMPTON COUNTY BOROUGH EDUCATION COMMITTEE.

ASSISTANT SCHOOL DENTIST.

Applications are invited for the appointment of a fully qualified Dental Surgeon (man) as Assistant School Dentist. Salary £450 per annum. Duties to commence on September 1st, 1937.

Further particulars and forms of application may be obtained from the undersigned, by whom applications should be received by not later than July 21st, 1937.

H. C. PERRIN, Secretary for Education, Education Office, "Springfield," Cliftonville, Northampton.

COUNTY BOROUGH OF SOUTH SHIELDS.

THE GENERAL HOSPITAL (400 Beds.)

Applications are invited for the appointment of HOUSE SURGEON (male). Salary at the rate of £150 per annum for the first six months, and at the rate of £200 per annum for the second six months, together with board, residence and laundry. The appointment is for one year.

Forms of application may be obtained from the undersigned, and should be returned completed to him, together with copies of three testimonials, in a sealed envelope marked "House Surgeon."

Town Hall, South Shields. W. CAMPBELL LYONS, Medical Officer of Health.

COUNTY BOROUGH OF PRESTON.

SHAROE GREEN HOSPITAL. (250 Beds.)

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER (female). Applications are invited from fully qualified and registered practitioners for the above appointment. Salary at the rate of £150 per annum, with full board and residence. The appointment will be for a period of six months, and at the end of this period the successful applicant may, subject to satisfactory service, be promoted to the post of Assistant Resident Medical Officer for a further period of not more than six months.

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should reach the Medical Superintendent not later than first post on Saturday, July 24th, 1937.

COUNTY OF LONDON.

APPOINTMENT OF CORONER.

The London County Council invites applications for the appointment of a CORONER FOR THE COUNTY OF LONDON. The salary attached to the office is £1,700 a year, inclusive, and it is probable that the selected candidate will be allocated to the Eastern District of the County. The Coroner will be required to provide at his own expense any necessary office accommodation and clerical assistance, and to defray all other expenses of the office (including the services of an approved deputy, and, if appointed, an assistant deputy), except actual disbursements under the approved schedule of fees, etc. Candidates, who must be not less than 35 or more than 50 years of age on August 31st, 1937, must be barristers or solicitors and possess one of the qualifications required by section 1 of the Coroners (Amendment) Act, 1926. Due weight will be given to experience as deputy coroner and to the possession of a knowledge of forensic medicine. A pension is payable on retirement under an approved scale. The candidate appointed must give an undertaking to give his whole time to the duties of his office.

Application must be made on the official form, a copy of which, containing full particulars, may be obtained by sending a stamped addressed foolscap envelope to the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1. Applications must be received by the Council not later than Tuesday, August 31st, 1937.

Canvassing disqualifies.

LONDON COUNTY COUNCIL

Applications invited from registered Medical Practitioners for temporary positions in the Council's service. (A) MEDICAL OFFICER (for minor ailments in children) for three sessions (2 hours each) a fortnight during school terms: Salary £99. (B) DENTAL ANAESTHETIST for three sessions (2½ hours each) a month during school terms. Salary £56 5s. At the LISSONIA SCHOOL TREATMENT CENTRE, 27, Grove Road, St. John's Wood, N.W.8.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (S.D.5), County Hall, Westminster Bridge, S.E.1, returnable by July 28th.

Canvassing disqualifies.

COUNTY BOROUGH OF BOLTON.

PUBLIC ASSISTANCE AND PUBLIC HEALTH COMMITTEE. TOWNLEYS HOSPITAL.

Wanted for the Townleys Hospital, Farnworth, near Bolton, an ASSISTANT MEDICAL OFFICER (male) for a period of one year.

The salary will be at the rate of £250 per annum, with rations, furnished apartments, attendance, etc.

Application forms, with conditions of appointment, may be obtained from the Public Health Department, Howell Croft, North, Bolton, and must be returned to reach the undersigned not later than Saturday, August 10th, 1937.

R. M. GALLOWAY, M.D.,
Medical Officer of Health.

Public Health Department, Bolton.
July 16th, 1937.

ROYAL BOROUGH OF KINGSTON-UPON-THAMES.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

Applications are invited from duly qualified and registered medical practitioners who are also registered in the *Medical Register* as the holder of a Diploma in Sanitary Science, Public Health, or State Medicine, for the post of Medical Officer of Health and School Medical Officer for the Royal Borough of Kingston-upon-Thames. The appointment is subject to the provisions of the Local Government Act, 1933, the Sanitary Officers (Outside London) Regulations, 1935, and the Local Government and Other Officers' Superannuation Act, 1922.

Terms and conditions of the appointment and form of application will be supplied on application to the undersigned.

The salary scale is—minimum, £950 per annum; maximum, £1,100 per annum; commencing salary to be determined as indicated in the conditions of appointment.

Applications on the prescribed form, and endorsed "Appointment of Medical Officer of Health and School Medical Officer," must be delivered to the undersigned on or before September 4th, 1937.

Town Clerk's Office, Guildhall, Kingston-upon-Thames.
A. W. FORSDIKE, Town Clerk.

July 15th, 1937.

CLAYTON HOSPITAL, WAKEFIELD.

TWO HOUSE SURGEONS required (male, British). Salary at the rate of £200 per annum, with board, residence and laundry.

Applications, together with copies of three recent testimonials, to be sent to the Secretary, Mr. T. F. W. MacKeown, M.A.

ESSEX COUNTY COUNCIL.

JUNIOR ASSISTANT MEDICAL OFFICER.

The County Council of the Administrative County of Essex invite applications for the appointment of Junior Assistant Medical Officer at the Black Notley Sanatorium, at which patients suffering from pulmonery and non-pulmonery tuberculosis are treated. Preference will be given to a candidate who has had experience in the treatment of pulmonary tuberculosis. The appointment is for a period of one year, and the salary will be at the rate of £250 per annum, together with board, lodging and laundry. The successful applicant will be required to pass a medical examination, and will be subject to the Council's Sick Pay Rules and Regulations, a copy of which will be forwarded on application.

Applications, in candidate's own handwriting, stating age, qualifications and experience, accompanied by copies of not more than three recent testimonials, should be addressed to me and delivered at the County Hall, Chelmsford, not later than 10 a.m. on Monday, July 26th, 1937.

E. S. HOLCROFT,
Clerk of the County Council.

County Hall, Chelmsford.
July 13th, 1937.

CITY AND COUNTY OF BRISTOL. HEALTH COMMITTEE. SOUTHMEAD MUNICIPAL GENERAL HOSPITAL.

The Health Committee invite applications for the post of DEPUTY MEDICAL SUPERINTENDENT at the above-mentioned Hospital.

The salary will be £500, rising by annual increments of £50 to a maximum of £700 per annum, which includes board-residence and laundry, valued at £125 per annum, and this will be deducted from the salary payable.

The successful candidate will be required to contribute 5 per cent. of his salary and emoluments under the Local Government and Other Officers' Superannuation Act, 1922, for which purpose he will be required to undergo a medical examination.

Applications on forms to be obtained from the Medical Officer of Health, together with copies of three recent testimonials, must be sent to the undersigned by July 24th, 1937.

R. H. PARRY, M.D., D.P.H.,
Medical Officer of Health.

Public Health Department,
40, Prince Street, Bristol, 1.

CITY OF LEICESTER.

ASSISTANT MEDICAL OFFICER OF HEALTH (Three appointments—two females, one male).

The Council invite applications for three whole-time Assistant Medical Officers. Age not exceeding 40 years. Salary £500 per annum, rising by annual increments of £50 to £700. The appointments will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922. The Diploma of Public Health, or similar qualification, is essential.

The duties will be principally in connection with the Maternity and Child Welfare and School Medical Schemes of the City Council, but the officers appointed will be required to carry out any other duties properly assigned to them.

One of the three appointments will be in connection with the supervision of the Municipal Midwifery Scheme, and the officer appointed (lady) must have had the necessary experience laid down for this appointment by the Minister of Health.

Applications, on a form to be obtained from the undersigned, should be accompanied by not more than three recent testimonials, and must be received not later than Saturday, July 24th, 1937. Envelopes should be endorsed "Assistant Medical Officer."

Health Department, Grey Friars, Leicester.
E. K. MACDONALD, Medical Officer of Health

July 17th, 1937.

COUNTY OF KINCARDINE

The County Council invite applications for the post of DEPUTY MEDICAL OFFICER OF HEALTH from medical men of not less than five years' standing and not over 40 years of age, with experience of maternity and child welfare, school and tuberculosis services. Salary from £600 to a maximum of £750, with placing according to experience, and increments of £25 per annum. Conditions of appointment and forms of application may be obtained from the COUNTY CLERK, Stonehaven.

HORTON GENERAL HOSPITAL, BANBURY, OXON (60 Beds.)

RESIDENT MEDICAL OFFICER (female) wanted for six months from the middle of August. Salary at the rate of £150 per annum, with board, residence and laundry.

Applications, stating age, qualifications and experience in the administration of Anaesthetics, with copies of two recent testimonials, to be sent to the undersigned not later than Saturday, July 24th, 1937.

RICHARD H. PRESCOTT,
House Governor.

CITY OF CARLISLE.

Appointment of ASSISTANT MEDICAL OFFICER for MATERNITY and CHILD WELFARE.

Applications are invited from medical women to take charge of the Corporation Maternity Home (12 beds), Ante-natal and Post-natal Clinics. The duties will also include School Medical Inspection Supervision of Midwives, and such other Public Health duties as may from time to time be prescribed. The duties of the respective offices will be carried out under the direction of the Medical Officer of Health.

Applicants must have had at least two years' experience as Maternity and Child Welfare Medical Officer, and should be in possession of the Diploma in Public Health, and preference will be given to candidates who have a special qualification in Midwifery.

The commencing salary will be at the rate of £600 per annum, rising by annual increments of £25 to a maximum of £700 per annum, and the lady appointed will be expected to commence duty at about the beginning of November.

The appointment is subject to the Local Government and Other Officers' Superannuation Act, 1922. Applications, endorsed "Medical Officer for Maternity and Child Welfare," and accompanied by copies of three recent testimonials, should be submitted to the Medical Officer of Health, 22, Fisher Street, Carlisle, on or before August 18th, 1937.

By Order,
FREDK. G. WEBSTER,
Town Clerk.

Town Clerk's Office, Carlisle.
July 13th, 1937.

CITY OF LIVERPOOL. PORT SANITARY AND HOSPITALS COMMITTEE.

RESIDENT ASSISTANT MEDICAL OFFICERS—(one male, one female). ALDER HEY HOSPITAL FOR CHILDREN. (952 Beds.)

Applications are invited for the above appointments, which fall vacant on October 1st, 1937.

The male appointment is for the Orthopædic Wards, which compromise 180 beds and include open-air wards for surgical tuberculosis. There is also a large amount of fracture and other orthopoedic work of an acute nature. Previous experience in othopaedic work is desirable and the Hospital affords ample opportunity for gaining experience in this work.

The female appointment is for the general medical and surgical wards of the Hospital.

Both the appointments are for a period of one year at a salary of £200 per annum, together with usual residential allowances.

Canvassing will be deemed a disqualification.

Applications to be made on forms obtainable from the Medical Officer of Health, Municipal Annexe, Dale Street, Liverpool, 2, to be endorsed "Resident Assistant Medical Officer," and returned to the undersigned not later that July 31st, 1937.

W. H. BAINES,
Town Clerk.

Municipal Buildings, Dale Street, Liverpool, 2.
July, 1937.

CITY OF SALFORD.

ASSISTANT RESIDENT MEDICAL OFFICER HOPE HOSPITAL. (1,200 beds)

Applications are invited for the post of ASSISTANT RESIDENT MEDICAL OFFICER (male) at Hope Hospital, Salford. The appointment will be for a period of six months. Salary £200 per annum, plus board, residence, and laundry. Further particulars and form of application may be obtained from the Medical Officer of Health, 143, Regent Road, Salford, 5, Lancs, to whom it should be returned not later than July 24th, 1937.

H. H. TOMSON,
Town Clerk.

CITY OF BIRMINGHAM.

Public Health Department.

Little Bromwich Hospital for Infectious Diseases.

JUNIOR RESIDENT MEDICAL OFFICERS (male)

TWO JUNIOR RESIDENT MEDICAL OFFICERS (male) required. Candidates must be unmarried and must have held previous resident posts in General or Children's Hospitals.

Salary at the rate of £300 per annum, together with board, etc., valued at £150 per annum. These appointments are limited to twelve months.

The officers appointed will be required to pay to the Council all fees, allowances, and emoluments (other than the foregoing) received by them.

It is not feasible to attend classes for the D.P.H. in conjunction with these appointments.

Forms of application may be obtained from the Medical Superintendent, Dr. J. McGarrity, Little Bromwich Hospital, Birmingham, 9, and should be returned to him on or before July 31st.

The Council House, Birmingham.
E. H. C. WILTSHIRE, Town Clerk.

NUNEATON GENERAL HOSPITAL.
(100 Beds.)

HOUSE SURGEON required immediately. Salary at the rate of £150 per annum, with board, residence, laundry, and certain other emoluments. The appointment is for six months in the first instance, and is one specially suitable to a medical woman.

Applications should be sent to the Hon. Secretary of the Medical Board, Nuneaton General Hospital, and may be accompanied by copies of two testimonials.

A TEMPORARY HOUSE SURGEON until September 30th next is also required under similar conditions to the post advertised above.

RESIDENT SURGICAL OFFICER.

The Medical Board will shortly be considering the appointment of a RESIDENT SURGICAL OFFICER as from October 1st next. The appointment would be for twelve months, renewable for two further periods. Salary £275 per annum, with board, residence, laundry, etc. Candidates should have had two or three years' hospital experience and should be capable of performing the simpler major operations of surgery and gynaecology.

Applications, accompanied by three copies of recent testimonials, should be sent to the Secretary of the Medical Board at the Hospital before July 26th.

THE CHILDREN'S HOSPITAL,
King Edward VII Memorial, Birmingham, 16.

RESIDENT SURGICAL OFFICER.
HOUSE PHYSICIAN No. 2
HOUSE SURGEON No. 2

Applications are invited for the above posts. Candidates for the post of Resident Surgical Officer must be *qualified and registered* and have held a responsible Resident appointment at a teaching Hospital. The salary attaching to the post is at the rate of £175 per annum, with board, residence and laundry. The appointment is tenable for one year as from October 1st, 1937.

Candidates for the posts of House Physician and House Surgeon must be *qualified and registered*. The salary is at the rate of £75 per annum, with board, residence and laundry, but if candidates have held satisfactory appointments at approved Hospitals the salary will be at the rate of £100 per annum. The appointments are tenable for six months as from October 1st, 1937.

Candidates should forward their applications, with proof of registration, and any credentials which they may desire to offer, to the undersigned on or before July 24th, 1937.

HAROLD F. SHRIMPTON,
July, 1937. House Governor

AYRSHIRE SANATORIUM, GLENAFTON, NEW CUMNOCK.

Ayr County Council invite applications for appointment as MEDICAL SUPERINTENDENT at a salary of £600 rising by annual increments of £30 to £750 a year, with free house, coal and light. The emoluments are subject to deduction of superannuation contributions.

Applicants must be registered Medical Practitioners with special experience in the Sanatorium Treatment of Tuberculosis.

Applications should be made by letter, should contain particulars with regard to medical training and experience and in particular with regard to experience and treatment of Tuberculosis, and should be lodged not later than July 21st, with JAMES R. LOCKIE, County Clerk, County Buildings, Ayr.

July 5th, 1937.

WEST NORFOLK AND KING'S LYNN GENERAL HOSPITAL.

HOUSE PHYSICIAN.

Applications are invited for the above post which is now vacant. Salary £175 per annum.

To have charge of Medical and Ophthalmic beds, also to act as Casualty Officer and Resident Anæsthetist. The post which is for six months in the first instance offers valuable experience in both In-patient and Out-patient work.

Applications with copies of recent testimonials, should be sent to the undersigned as early as possible.

JOSEPH F. SEARBANT, F.C.C.S.,
House Governor and Secretary.

THE PRINCE OF WALES'S HOSPITAL,
Greenbank Road, Plymouth.
(Formerly South Devon and East Cornwall Hospital.)

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence and laundry.

Appointment is tenable for six months, and is subject to renewal. Duties to commence July 21st. The Hospital is one which is recognised for the surgical practice required before admission to the Final Fellowship Examinations of the Royal College of Surgeons of England.

Applicants must be registered under the Medical Acts. Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned forthwith.

ARTHUR R. CASH,
July 5th, 1937. Gen. Supt. and Secretary.

ROYAL SALOP INFIRMARY, SHREWSBURY.
(150 Beds.)

APPOINTMENT OF RESIDENT HOUSE PHYSICIAN.

Applications are invited from fully qualified unmarried gentlemen for the appointment of Resident House Physician, vacant immediately.

Salary £160 per annum, with board, residence, etc.

The appointment is for six months, subject to re-appointment.

Resident Staff comprises Resident Surgical Officer, Resident House Physician, and two Resident House Surgeons.

The Resident House Physician is Resident Officer to the Medical Wards of the Hospital under the direction of three Honorary Physicians.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three recent testimonials, to be sent to the undersigned forthwith.

Board Room. J. W. NOBLE,
July 7th, 1937. Secretary-Superintendent.

DEVONSHIRE ROYAL HOSPITAL, BUXTON, DERBYSHIRE. (300 Beds.)

(A National Hospital for Rheumatism and Allied Diseases.)

HOUSE PHYSICIAN (male). Salary £150, rising to £175 after three months' service (and prospects of promotion to Resident Medical Officer), with board-residence and laundry.

Candidates must be fully qualified and registered. The appointment is for a minimum period of six months, and may be extended for a further period of six months.

Applications, endorsed "House Physician," stating age, experience and qualifications, together with copies of three recent testimonials, must be forwarded without delay to the undersigned, from whom any further particulars may be obtained.

Considerable orthopaedic experience is available, and the appointment offers special facilities for any gentleman preparing a thesis or wishing to undertake special work, as the hospital contains all the necessary laboratory and other facilities for research. Canvassing will disqualify.

By Order of the Committee of Management,
A. PRESTON TURNER,
General Superintendent and Secretary.

NOTTINGHAM CITY ISOLATION HOSPITAL.

A TEMPORARY RESIDENT MEDICAL OFFICER is urgently required for a period of several months to take charge of the Hospital of 200 beds under the supervision of the Medical Officer of Health. Fever experience is desirable.

Facilities will be provided for the officer to gain experience of other branches of Public Health work, if desired.

Salary at the rate of £350 per annum, with board and lodging. Subject to two weeks' notice on either side.

Apply forthwith to the undersigned.

Guildhall, Nottingham. J. E. RICHARDS, Town Clerk.
July 12th, 1937.

KENT AND CANTERBURY HOSPITAL.
(Three Resident Medical Officers.)
CANTERBURY.

HOUSE SURGEON (male, unmarried). Six months' appointment, commencing July 31st, 1937. Salary £125 per annum, with residence and laundry.

The successful candidate will commence duties at the present Hospital, but will be transferred to the new Hospital (181 beds), which is to be ready for occupation about September 1st.

The Hospital is recognised for Fellowship study.

Applications, together with copies of testimonials, should be sent as soon as possible to

S. L. WARD,
Secretary.

GRANTHAM HOSPITAL.
(100 Beds.)

Applications are invited from fully qualified medical practitioners (male) for the post of RESIDENT MEDICAL OFFICER. The appointment is for six months (renewable), and will become available on September 11th, 1937. Salary £200 per annum, with board, residence, and laundry. Preference given to applicants who have already held a resident appointment. Applications, stating age, nationality, qualifications, and experience, with copies of three recent testimonials, should be sent to the undersigned.

JOHN E. RAY,
Secretary-Superintendent.

IPSWICH MENTAL HOSPITAL.

Required, JUNIOR ASSISTANT MEDICAL OFFICER, male single. Salary £350 per annum, with board, residence, and laundry. Appointment for one year.

Appointment subject to provisions of Asylums Officers' Superannuation Act. Apply, stating age and experience, with testimonials, to the Medical Superintendent.

July 7th, 1937.

ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE.
(758 Beds.)

Applications are invited for the post of SENIOR ACCIDENT ROOM HOUSE SURGEON, who will also act as Deputy Resident Medical Officer (open appointment).

Applicants must be duly registered in Medicine and in Surgery, and have had six months' resident hospital experience.

The appointment will be for one year, and is renewable for two further periods of one year.

The remuneration is at the rate of £120 per annum.

Regulations governing the appointment may be obtained from the undersigned.

Applications, stating age, experience and qualifications, and accompanied by not more than three testimonials, must be received not later than first post on Monday, July 26th, 1937.

S. DUNSTAN,
July 12th, 1937. House Governor and Secretary.

THE JESSOP HOSPITAL FOR WOMEN, SHEFFIELD.
(Firth Auxiliary, Norton).

Applications are invited for the post of RESIDENT MEDICAL OFFICER from registered medical practitioners.

The appointment will be for six months, commencing immediately, subject to renewal for a further six months, with salary at the rate of £150 per annum, plus board, residence and laundry.

Previous obstetrical experience is desirable.

The Firth Auxiliary Hospital contains 47 beds, of which 23 are set apart for the treatment of puerperal sepsis, the remainder being for ante-natal and gynaecological cases.

Applications should be lodged with the undersigned, addressed to the Jessop Hospital for Women, Sheffield, immediately.

DAVID OSWALD,
Superintendent and Secretary.

ANCOATS HOSPITAL, MANCHESTER.

APPOINTMENTS VACANT.

CASUALTY OFFICER, lady or gentleman.—12 months' appointment. Salary £250 per annum, with luncheon and tea provided. Applicants having passed their Primary Fellowship Examination will be preferred as the lady or gentleman appointed will do duty for the Resident Surgical Officer at alternate week-ends and other scheduled times.

HOUSE SURGEON, lady or gentleman, to the Ear, Nose and Throat Department, and to act as House Physician to one of the Honorary Physicians. Appointment for six months. Salary at £100 per annum, with board, residence, laundry, etc.

Applications for either of the above posts should be forwarded to the undersigned immediately, together with copies of three recent testimonials, stating age, qualifications, experience, etc.

By Order of the Board,
HERBERT J. DAFFORNE,
General Superintendent and Secretary.

MANCHESTER ROYAL INFIRMARY.

RESIDENT SURGICAL OFFICER.

The Board of Management invite applications for the above appointment, which will become vacant on October 1st, 1937. Applicants must not be less than 25 years of age. They must be registered and hold a Medical and Surgical qualification.

The appointment is for twelve months, renewable for a further period of one year, subject to the provision of the Bye-laws as to notice. Salary £200 per annum, with allowance for laundry.

Full information is obtainable from the undersigned, to whom applicants must send twelve copies of their application and testimonials by Wednesday, August 4th.

By Order,
W. R. TINDALE,
July 8, 1937. General Supt. and Secretary.

WEST HERTS HOSPITAL,
HEMEL HEMPSTEAD.
(114 Beds. 24 miles from London.)

SENIOR RESIDENT MEDICAL OFFICER required, to commence duties about August 1st. Male unmarried preferred. Salary £150, with rooms, board and laundry.

Applications, stating essential particulars and enclosing copies of three recent testimonials, to be sent at once to:

ROBT. L. BUTTERFIELD,
Clerk to the Hospitals.

TAUNTON AND SOMERSET HOSPITAL,
Taunton.

SENIOR R.M.O. (male) required end of July. Three Residents on staff. Applicants must have held a Resident Hospital post for at least six months. Six months' appointment, with option of applying for re-election.

Salary at rate of £200 p.a., and the remission of certain fees.

Applications, with copies of three recent testimonials, to be sent to the Secretary by the 21st instant.

WESTON-S-MARE GENERAL HOSPITAL (80 Beds.)

HOUSE PHYSICIAN.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN at this Hospital. Salary at the rate of £150 per annum, with board, rooms and laundry. Duties commencing August 1st. Applications, stating age, qualifications, and enclosing copies of testimonials, should be addressed to the undersigned.

LESLIE J. FURSLAND,
The General Hospital, Secretary.
Boulevard,
Weston-super-Mare.

MANSFIELD AND DISTRICT GENERAL HOSPITAL. (140 Beds.)

HOUSE SURGEON (Male) required. Duties to commence as soon as possible. Salary at the rate of £150 p.a., with residence, board and laundry. The appointment is for six months and is renewable. The staff consists of a Resident Surgical Officer and two House Surgeons. Applications, stating age, qualifications and nationality, accompanied by not more than three recent testimonials, to be sent to the undersigned as soon as possible.

C. J. ADAMS,
Secretary.

ROCHDALE INFIRMARY & DISPENSARY. (110 Beds) (Three Residents.)

The Board of Management invite applications from gentlemen for the appointment of SENIOR HOUSE SURGEON.

The salary attached to the appointment is £250 p.a., including board, residence and laundry.

Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon."

W. WYNNE,
Infirmary Office. Secretary.

NORTH LONSDALE HOSPITAL, BARROW-IN-FURNESS. (152 Beds.)

Appointment now vacant. Required immediately: RESIDENT CASUALTY OFFICER (Male). Applications are invited for the above position, from fully qualified Practitioners experienced in the administration of anaesthetics. Salary £150 per annum, with board, residence and laundry. Applications, stating age, qualifications, experience and nationality, accompanied by copies only of three recent testimonials, should be sent to the Secretary immediately.

ANCOATS HOSPITAL, MANCHESTER. ORTHOPAEDIC DEPARTMENT.

ASSISTANT SURGICAL OFFICER required to assist in the Orthopaedic Out-patient Clinic on Tuesday afternoons from 2 to 5. An honorarium of 10s. 6d. per attendance is paid.

Applications, stating age, experience, qualifications, etc., to be forwarded to the undersigned, together with copies of three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE,
General Supt. and Secretary

MIDLAND HOSPITAL. Easy Row, BIRMINGHAM. (50 Beds.)

Applications are invited for the post of HOUSE SURGEON. Duties to commence immediately. Salary £200 per annum, with board, residence, and laundry. Applications, stating when at liberty, age, qualifications, together with copies of recent testimonials, to be addressed to the undersigned.

OLIVE FURNEAUX,
Secretary.

MERTHYR GENERAL HOSPITAL. (118 Beds.)

RESIDENT HOUSE SURGEON required for a period of six months.

Salary at the rate of £150 per annum, with board and laundry. Applications, stating age, nationality, qualifications and accompanied by three (copies only) recent testimonials should be addressed to the Secretary of the Merthyr General Hospital on or before July 20.

ROTHERHAM HOSPITAL

HOUSE SURGEON required for Ophthalmic and Ear, Nose and Throat Departments. Previous experience not essential. Salary £150 per annum, with board and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. Roberts, 8. Moorgate Street, Rotherham.

BATLEY AND DISTRICT HOSPITAL. (General Hospital—84 Beds.)

Required a duly qualified RESIDENT HOUSE SURGEON (male). Salary £175, with board, residence, and laundry. Applications, with copies of testimonials, should be sent at once to—

A. W. WESTERN,
Batley, Yorks Secretary.

THE LIVERPOOL SANATORIUM. Delamere Forest, Frodsham, via Warrington. (175 Beds for the treatment of patients suffering from pulmonary tuberculosis.)

JUNIOR ASSISTANT to the Medical Superintendent. Applications are invited from male Medical Practitioners, with suitable qualifications, for the above named appointment. Candidates must be unmarried and preference will be given to applicants who have held resident medical appointments since qualification and have had practical institutional experience in the treatment of pulmonary tuberculosis.

Salary will be at the rate of £225 per annum, with board, quarters and laundry.

The appointment is normally tenable for 12 months but may be extended.

Particulars of duties and full information, together with forms of application, can be obtained from the Medical Superintendent.

Forms completed, with copies of three recent testimonials, should be returned as early as possible to the Medical Superintendent, The Liverpool Sanatorium, Delamere Forest, Frodsham, via Warrington.

ROYAL UNITED HOSPITAL, BATH.

Applications are invited from gentlemen, unmarried, of British nationality, for the following appointments:—

HOUSE SURGEON, General Surgery and Ear, Nose and Throat.

HOUSE SURGEON, General Surgery and Fracture Service.

Salary for each appointment £150 per annum, with board, residence and laundry.

Applications, with copies of three testimonials, to be addressed to the undersigned at once, stating the appointment for which application is made.

J. LAWRENCE MEARS,
July 12th, 1937. Secretary-Superintendent.

ROYAL UNITED HOSPITAL, BATH.

HOUSE PHYSICIAN required immediately. Resident Staff of two House Physicians and three House Surgeons.

Duties include some Casualty. Salary £150 per annum, board, residence, and laundry.

The appointment is for six months, and candidates must be male, unmarried, and of British nationality.

Applications, with copies of three testimonials, to be addressed to the undersigned at once.

J. LAWRENCE MEARS,
May 31st, 1937. Secretary-Superintendent

MINEHEAD AND WEST SOMERSET HOSPITAL, MINEHEAD, SOMERSET.

Applications are invited for the post of RESIDENT HOUSE SURGEON (male or female).

Duty to commence on September 1st, 1937. Appointment for a period of six months. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than July 30th, 1937.

W. H. P. RODDA,
Secretary.

BRADFORD NEW ROYAL INFIRMARY. (345 Beds.)

RESIDENT MEDICAL OFFICER AND ASSISTANT PATHOLOGIST wanted (male). Salary £225. 12 months' appointment. There are 115 Medical Beds and two House Physicians. The successful applicant will be required to act as assistant to the Pathologist. Applications, stating age, qualifications and experience, and enclosing copies of three recent testimonials, should be received by the undersigned not later than July 21st, 1937.

J. J. BARRON,
Secretary-Superintendent

THE LADY CHICHESTER HOSPITAL, HOVE, FOR FUNCTIONAL NERVOUS DISEASES. (60 Beds.)

SENIOR HOUSE PHYSICIAN (woman) required. Six months' appointment at £100 per annum, all found.

Also JUNIOR at £50 per annum. Valuable experience for diploma in Psychological Medicine Duties to commence immediately.

Applications, with testimonials, to be sent to the Secretary, Mr. P. F. Spooner, 33, West Street, Brighton.

June 28th, 1937.

THE CHILDREN'S HOSPITAL, SHEFFIELD. (140 Beds.)

HOUSE SURGEON required IMMEDIATELY. Salary £100 per annum, with board, residence and laundry. Candidates (male and unmarried), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of three recent testimonials, to the undersigned.

I. H. G. GARTLAND,
Superintendent and Secretary.

DARLINGTON MEMORIAL HOSPITAL. (200 Beds.)

Applications are invited for the post of HOUSE SURGEON for the Out-Patient, Casualty and Orthopaedic Dept. Male, British, fully qualified. Salary £150 per annum, with board, residence and laundry. Applications, stating age, full particulars of qualifications and experience, together with copies of three recent testimonials, to be addressed to the undersigned.

ARTHUR RIDDLE, A.C.I.S.,
Secretary-Superintendent

DERBYSHIRE ROYAL INFIRMARY, DERBY. (General Hospital, 362 Beds.)

Applications are invited for the post of CASUALTY OFFICER AND ORTHOPAEDIC HOUSE SURGEON.

Candidates must be qualified and registered under the Medical Acts.

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned immediately.

ARTHUR TAYLOR,
July 2nd, 1937. Superintendent and Secretary.

ROYAL SUSSEX COUNTY HOSPITAL, BRIGHTON. (Beds 272. Six R.M.O.s.)

CASUALTY HOUSE SURGEON (male) required as soon as possible. Salary £120 per annum, with board, residence and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts.

They must be unmarried, and, when elected, under thirty years of age.

Applications, with copies of recent testimonials, to be forwarded to the undersigned.

L. L. W. LANCASTER-GAYE,
Secretary-Superintendent.

HARROGATE AND DISTRICT GENERAL HOSPITAL. (132 Beds.)

Applications are invited for the post of CASUALTY OFFICER AND HOUSE SURGEON to the Ear, Nose, Throat and Maternity Departments, to take up duties immediately for the period ending September 30th, 1937, with a possibility of an extension of the appointment for a further six months.

Salary to be at the rate of £150 per annum. Candidates (male) must be of British nationality, unmarried, and possess registered qualifications.

Applications should be made as soon as possible on forms obtainable from the undersigned.

FRANK A. THROWER,
Secretary.

PRINCESS ELIZABETH ORTHOPAEDIC HOSPITAL, EXETER.

Applications are invited for the post of RESIDENT HOUSE SURGEON. Salary £150 per annum, with board, residence and laundry. The appointment is for six months commencing September 1st, with the option of extension for a period not exceeding a further six months.

Applications, stating age and experience, with copies of three recent testimonials, to be sent to:

P. MELHUISH,
Secretary.

MANCHESTER EAR HOSPITAL, Grosvenor Square, All Saint's.

The Board invite applications for the post of RESIDENT HOUSE SURGEON. (31 beds.) Salary £120 per annum Candidates must be duly qualified and registered Applications, with copies of four recent testimonials, to be forwarded to Mr. REGINALD S MILFORD (Hon. Sec., Manchester Ear Hospital), c/o Mr. W. J. Ellam, 17, Brazennose Street, Manchester, 2.

LEIGH INFIRMARY, LANCASHIRE.

Wanted, JUNIOR HOUSE SURGEON, immediately. Salary £150 p.a. The appointment is for six months, with eligibility for re-election. Must be good Anaesthetist. Exceptional opportunities for surgery.

Applications to be addressed to Mr. J. A. SMITH, Secretary, 5, Silk Street, Leigh, Lancashire.

MONTAGU HOSPITAL, MEXBOROUGH. (115 Beds.)

RESIDENT HOUSE SURGEON (Lady) required. Commencing salary £120 per annum, with board, residence, laundry, and excellent experience.

Applications, stating age, qualifications, when at liberty, and accompanied by copy testimonials, to:—

JOHN N. DRAKE,
Secretary-Superintendent.

CHESHIRE JOINT SANATORIUM, MARKET DRAYTON, SALOP.

Wanted, RESIDENT HOUSE PHYSICIAN (Male), for a period of twelve months. Salary £250 per annum. Forms of application from The Medical Superintendent.

THE ROYAL INFIRMARY, SHEFFIELD.
(500 Beds.)

The Board of Management invite applications for the undermentioned posts:

(1). HOUSE SURGEON.
(2). AURAL HOUSE SURGEON.
(3). OPHTHALMIC HOUSE SURGEON.
(4) CASUALTY OFFICER.

The salary attached to posts (1) and (2) is £80 per annum, increasing to £100 after six months' service; to (3) £120 per annum, and to (4) £150 per annum, with board and residence in each case.

Appointments (1), (2) and (3) will be tenable for the residue of the period of six months, terminating on October 31st next; (4) is tenable for six months from July 1st, 1937.

The Ophthalmic Department contains 69 beds and an Out-Patient Department, which is open daily.

Applications, with copies of testimonials, to be sent to the undersigned forthwith.

H. KINGSLEY PEARCE,
General Superintendent and Secretary.

June 21st, 1937.

THE ROYAL INFIRMARY, SHEFFIELD.
(500 Beds.)

The Board of Management invite applications for the post of HOUSE SURGEON to the ORTHOPAEDIC and FRACTURE SERVICE.

The appointment will be tenable for the residue of the period of six months ending October 31st next. The successful candidate will be eligible for re-election to this or one of the other fourteen House appointments.

The salary attached to the post is £80 per annum, with board and residence, increasing to £100 per annum after six months' service.

Applications, with copies of testimonials, to be sent to the General Superintendent and Secretary.

June 25th, 1937.

ABERDEEN ROYAL INFIRMARY

The Board of Directors invite applications for the post of GYNAECOLOGICAL REGISTRAR. The successful candidate will also be a part-time Assistant in the Department of Midwifery of the University of Aberdeen.

Applications, with recent testimonials (six copies of each) must be lodged not later than 10 a.m. on August 4th, 1937, with the undersigned, from whom particulars as to salary and terms of appointment may be obtained.

JOHN A. McCONACHIE,
Clerk and Treasurer

230, Union Street, Aberdeen.
July 16th, 1937.

GENERAL HOSPITAL, NOTTINGHAM.
(386 Beds.)

A HOUSE SURGEON (male) is required at the above Institution. The appointment is for six months, with salary at the rate of £150 a year, with board, residence and laundry.

Applications, stating age, qualifications and experience, together with copies of testimonials, to be delivered to the undersigned at once. Duties to commence on or about July 29th.

PETER M. MacCOLL,
House Governor and Secretary.

THE ROBERT JONES AND AGNES HUNT ORTHOPAEDIC HOSPITAL, OSWESTRY
(Beds, adults, 210; children 110.)

HOUSE SURGEON required early August, appointment for six months, with possibility of extension. Salary at the rate of £200 per annum, with board residence and laundry. Two weeks' holiday for each six months service. Applications stating age, qualifications and experience, with copies of three recent testimonials, to be addressed to the Secretary-Superintendent, and to reach him not later than July 26th 1937.

ROYAL LIVERPOOL BABIES' HOSPITAL, WOOLTON

Required RESIDENT MEDICAL OFFICER for the above Hospital. Appointment commencing October 1st. Salary at the rate of £125 per annum for the first six months, £150 for the second six months.

Applications, with copies of testimonials, to be sent to the Chairman of the Medical Board, 9, Cypress Hall, Liverpool 3, on or before August 3rd.

TIVERTON AND DISTRICT HOSPITAL, Tiverton, Devon. (48 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum with board residence and laundry. Six months' appointment. Duties to commence September 1st, 1937. Applicants stating age, nationality, qualifications should be sent to the undersigned.

C. H. DELKS,
Secretary.

ROYAL EYE & EAR HOSPITAL, BRADFORD
(68 Beds.)

HOUSE SURGEONS (two) required. Salary £150, with board residence and laundry.

Applications, stating qualifications, age, etc., with copies of recent testimonials should be sent to the undersigned.

F. BRIGGS,
Secretary-Superintendent.

CHESTERFIELD & NORTH DERBYSHIRE ROYAL HOSPITAL.
(220 Surgical and Medical Beds.)

HOUSE SURGEON.

Applications are invited from fully qualified men for the above post.

The appointment is for six months. Salary at the rate of £150 per annum, with board, apartments and laundry.

Applications, stating age, together with copies of three recent testimonials, should be sent to the undersigned as soon as possible.

FINAL YEAR STUDENT.

There is a vacancy for a Final Year Student. Board and lodgings are provided, and opportunity is given to the student to work in the wards of the Hospital, Fracture Clinic and Casualty Department.

Applications should be sent to the undersigned as early as possible, together with a reference from the Dean of the Faculty of Medicine at their School.

G. SUNNUCK,

CUMBERLAND [illegible]
(Beds 160. Five Male R.M.O.s.)

Required at once, male HOUSE SURGEON. Appointment to September 30th, 1937.

Applications are invited. Previous experience desirable. Salary at the rate of £155 per annum, board, residence, etc.

Applications, stating age, nationality, qualifications, etc., with copies of not more than three testimonials, should be sent at once to the undersigned, who will supply further particulars if desired.

J. G. HOWITT,
June 9th, 1937. Secretary.

WREXHAM AND EAST DENBIGHSHIRE WAR MEMORIAL HOSPITAL.
(124 Beds.)

RESIDENT HOUSE SURGEON (male or female) required by the above hospital. Appointment is for six months; salary £150 per annum, with board and lodging.

Applications, stating age, nationality, experience, qualifications, and when duty can be commenced, to be sent to the undersigned immediately, together with three copies of recent testimonials.

LESLIE SPENCER,
June 24th, 1937. Secretary.

THE BOLTON ROYAL INFIRMARY.

(315 beds, including two Auxiliary Hospitals).

Applications are invited from men or women for two vacant posts of HOUSE SURGEON. Duties to commence as soon as possible.

The appointments are for six months and are renewable. The salary £150 per annum in each case, with board, residence and attendance.

Applications for the posts, stating age, nationality and previous experience, together with copies of testimonials, should be forwarded to the undersigned.

H. CORLESS,
Assistant Secretary.

PRINCESS ALICE HOSPITAL, EASTBOURNE.
(Voluntary General Hospital, 120 Beds, two House Surgeons.)

RESIDENT HOUSE SURGEON (male) required on August 8th, 1937. Salary at the rate of £150 per annum, with board and laundry. Applications from registered practitioners, accompanied by copies of three recent testimonials, should be delivered to the undersigned by the first post on Thursday, July 29th, 1937.

W. RUSSELL RUDALL,
July 7th, 1937. Secretary.

PRESTWICH MENTAL HOSPITAL, MANCHESTER

Required immediately, LOCUM TENENT MALE MEDICAL OFFICER. Local facilities for D.P.M. Salary, seven guineas per week and all found. Candidates must be unmarried and registered under the Medical Act.

Appointment terminable by one week's notice on either side.—Apply, stating age, hospital and other experience, qualifications, and full particulars, to the Medical Superintendent as above.

ROYAL INFIRMARY, BLACKBURN
(244 Beds. Five Residents).

HOUSE SURGEON (male) required. Salary £175, with board, residence and laundry.

Applications, stating age, nationality, qualifications and experience, together with copies of recent testimonials, to be sent to the undersigned.

Royal Infirmary, Blackburn. T. DEWHURST, General Supt. and Secretary.

PENDYFFRYN HALL, PENMAENMAWR.

Wanted, ASSISTANT PHYSICIAN (male, unmarried), to commence duty in October. Salary at the rate of £250, with board, residence and laundry. Experience in pneumothorax work, etc., essential.

Apply to MEDICAL SUPERINTENDENT, stating age and experience, and enclosing testimonials.

HILL END HOSPITAL FOR MENTAL AND NERVOUS DISORDERS,
St. Albans, Herts.

ASSISTANT MEDICAL OFFICER. Deputy (male) required, to commence duty September 1st, 1937. Salary £350, rising by annual increments of £25 to £450 per annum, with £50 additional for D.P.M. Furnished quarters, board, washing, and attendance provided valued at £100 per annum, subject to 3 per cent. deduction under Asylums' Officers' Superannuation Act, 1909.

The Hospital has over 1,200 beds, and is the County Mental Hospital for Hertfordshire. Laboratory, Out-patients' Clinic, etc.

Applicants should be single and under 30 years of age. Application forms from the Medical Superintendent to be returned with copies of recent testimonials before first post on July 26th, 1937.

THE ROYAL PORTSMOUTH HOSPITAL, PORTSMOUTH.
(Six Resident Medical Officers.)

Applications are invited for the post of HOUSE PHYSICIAN (male) qualified. Salary at the rate of £130 per annum, with board, etc. To commence duty on September 1st, 1937. Six months' appointment. Eligible on completion of term for extension or other Resident posts.

Applications, stating age, nationality, etc., and copies of three recent testimonials, to be sent to the undersigned as soon as possible, from whom all particulars can be obtained.

B. WAGSTAFF,
Secretary.

ST. ALBANS AND MID HERTS HOSPITAL

Applications are invited for the post of full-time SECRETARY to the above Hospital, at a salary of £200 per annum.

Having regard to the salary offered, it is considered that the appointment would be one suitable for a gentleman who may have retired on pension or have some private means.

Further particulars and form of application can be obtained from the undersigned.

Applications to be sent in by July 26th, 1937.

W. G. MARSHALL,
Secretary.

38, St. Peter's Street, St. Albans.
July 9th, 1937.

DISTRICT INFIRMARY, ASHTON-UNDER-LYNE. (200 Beds.)

A HOUSE SURGEON is required immediately. Six months' appointment, which may be renewed. The Staff comprises a Resident Surgical Officer, a Casualty Officer and two House Surgeons.

Salary at the rate of £150 per annum, with board, residence and laundry.

Applications, with testimonials, to be sent at once to the undersigned.

FRANK OLIVER,
General Superintendent and Secretary.

July 12th, 1937.

BEDFORD COUNTY HOSPITAL.
(120 Beds.)

Wanted, HOUSE SURGEON, for a term of not less than six months. Salary £150 per annum. He must be fully qualified, male, unmarried. Board, lodging and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee.

LONGTON HOSPITAL, STOKE-ON-TRENT.
(50 Beds.)

HOUSE SURGEON (male or female) required. Commencing salary £160, with board, residence and laundry, plus certain fees.

Applications, with copies of recent testimonials and stating nationality, to be sent immediately to the Chairman of Directors, Longton Hospital, Stoke-on-Trent.

HERTFORD COUNTY HOSPITAL.
(169 Beds. Three Residents.)

Applications are invited for the post of HOUSE PHYSICIAN (male).

Salary £150 per annum, with board, residence and laundry. Duties to include Casualty. The appointment is for six months in the first instance. Applications, together with copies of three recent testimonials, should be forwarded to the undersigned.

PERCY G. BROOKS,
Secretary.

KING EDWARD MEMORIAL HOSPITAL, EALING. (131 Beds.)

CASUALTY OFFICER and DEPUTY RESIDENT MEDICAL OFFICER (male) required. Six months' appointment, with possibility of re-election for a further period. Salary £225 per annum, with usual residential allowances.

Applications, stating age, experience and qualifications, together with copies of two recent testimonials, to be sent to the undersigned immediately.

R. A. MICKELWRIGHT,
House Governor.

APPOINTMENTS—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District	Town or District.	Town or District
CONTRACT PRACTICE	CONTRACT PRACTICE—*(contd.)*	CONTRACT PRACTICE—*(contd.)*
ABERTYSSWG MEDICAL AID SOCIETY. *(Medical Officer.)*	LLWYNYBIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL. *(Medical Officer.)*	MID-RHONDDA MEDICAL AID SOCIETY. *(Assistant Medical Officer.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
		PUBLIC HEALTH
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	FLINTSHIRE COUNTY COUNCIL. *(Junior Assistant to the County Council's Medical Officer.)*

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES *(All Friendly Society Appointments.)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney, N.S.W.	**VICTORIA** *(All Institute or Medical Dispensaries.)*	The Honorary Secretary, Victorian Branch, British Medical Association, Medical Society Hall, Albert St., East Melbourne, Victoria.	**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, "Shell House," 205, St. George's Terrace, Perth, Western Australia.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17.				

July 14, 1937 By Order of the Council. G. C. ANDERSON, *Medical Secretary*

URY INFIRMARY (LANCS.). (127 Beds.)

APPOINTMENT OF CASUALTY OFFICER (MALE).

A vacancy as above arises on the Resident edical Staff, and applications are invited for the ist.

The Resident Staff consists of an R.S.O., a ouse Surgeon, and House Physician, and a asualty Officer.

In addition to his duties in the Casualty Depart- ent the Casualty Officer is also responsible for e In-patient and Out-patrent work in connection th the Eye, and Ear, Nose and Throat Depart- ent.

The appointment is for six months at a salary the rate of £150 per annum, with board, resi- nce and laundry, and the successful candidate ll be expected to commence duties immediately.

Applications, stating age, qualifications, and ationality, together with copies of three recent stimonials, are to be forwarded to the under- ned as soon as possible, endorsed "Casualty fficer."

Further particulars may be had on application.

H. WILKINSON, Superintendent

RIMSBY AND DISTRICT HOSPITAL. (164 Beds.)

Applications are invited for the posts of:
(a) SENIOR HOUSE SURGEON (male).
(b) HOUSE PHYSICIAN (male).

emuneration at the rate of £200 and £150 per num respectively, with board-residence, etc. andidates must be fully qualified and registered, id previous hospital appointment experience is sirable. Duties to commence August 1st, 1937. ie successful candidate will be appointed for six onths, and may apply for re-election.

Applications, stating age, qualifications, experi- ice, and not more than three recent testimonials, be forwarded to the undersigned on or before ly 20th, 1937.

H. B. COATES, July 2nd, 1937. Secretary-Superintendent.

BIRKENHEAD GENERAL HOSPITAL. (156 Beds.)

Applications are invited for the following Resident (male) posts for the six months commencing October 1st, 1937.

SENIOR HOUSE SURGEON. Salary £150 per annum.

(The above post is recognized by the Royal College of Surgeons of England for the 6 consecutive months' appointment in charge of general surgical patients required of candidates before admission to the final examination for the Fellowship.)

SECOND HOUSE SURGEON. Salary £100 per annum.

HOUSE PHYSICIAN. Salary £100 per annum.

CASUALTY OFFICER. Salary £100 per annum.

All with board, residence and laundry.

Applications, stating age, nationality and qualifications, together with three recent testimonials, to reach the undersigned as soon as possible.

W. H. DANIELS, F.C.I.S., Secretary-Superintendent

COSSHAM MEMORIAL HOSPITAL, Kingswood, Bristol

A vacancy will occur in the middle of July for the post of JUNIOR RESIDENT MEDICAL OFFICER.

Salary £100 per annum, with board and laundry —to remain for six months in the first instance. Applicants (Male) should be British nationality, fully qualified and registered. Applications, with copies of recent testimonials, to be sent to the Secretary.

CAMERON HOSPITAL, WEST HARTLEPOOL. (76 Beds.)

HOUSE SURGEON (male or female) required to commence duties on August 16th. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, and experience, together with copies of testimonials, should be sent to the Secretary as soon as possible.

HULL ROYAL INFIRMARY. (365 Beds.)

Applications are invited from registered Medical Practitioners for the post of HOUSE SURGEON (male) to the Ophthalmic and Ear, Nose and Throat Departments, vacant now.

Salary at the rate of £150 per annum, plus residence, board and laundry.

The post is recognised for the clinical work required in the regulations for the D.O.M.S. and D.L.O.

The appointment will be for a period of six months, but will be determinable at any time by one month's notice on either side.

Applications, giving particulars of age, experience and nationality, together with copies of recent testimonials, should be addressed to the undersigned

R. J. CARLESS, June 28th, 1937. House Governor.

DONCASTER ROYAL INFIRMARY.

HOUSE SURGEON (male) required immediately Six House Surgeons are resident.

Salary at the rate of £175 per annum, with residence, board and laundry.

This large industrial area offers excellent opportunities for gaining experience.

Applications, accompanied by not more than three testimonials, to be sent to the undersigned immediately.

R. LANCASTER, Secretary-Superintendent.

DURHAM COUNTY AND SUNDERLAND EYE INFIRMARY.

HOUSE SURGEON wanted; outdoor; from middle August. Must have ophthalmic experience. Salary £350, rising by annual increments of £50 for two years.

Applications, with copies of three recent testimonials, to be sent to JOHN BUTTERFIELD, Secretary, Eye Infirmary, Stockton Road, Sunderland.

(Advertisements continued on p. 54)

BRITISH MEDICAL JOURNAL

Phone: Euston 2111

B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1

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CLOSING DAY — TUESDAY (noon).

The British Medical Association reserves the right to refuse or interrupt the insertion of any advertisement.

NOT CLASSIFIED

CIGARS. (ENDCUT) ALL HAVANA TOBACCO. GOOD SMOKES at a low price: quality guaranteed. Box of 50 for 25/-, post free.—Sole Manufacturers, J. J. FREEMAN & Co., LTD., 90, Piccadilly, London W.1. (GRO.: 1529.)

"BIZIM" CIGARETTES THESE luxurious, deliciously satisfying smokes, 50's or 100's at 6/3 per 100; 58/6 per 1,000, post free. Sole Manufacturers: J. J. FREEMAN & Co., LTD., 90, Piccadilly, London, W.1. (GRO.: 1529).

"SOLACE CIRCLES" TOBACCO THE finest combination ever discovered of Choice Natural Tobaccos. Every pipeful an indescribable pleasure. 12/6 per ½ lb. tin, post free. Sole Manufacturers: J. J. FREEMAN & Co., LTD., 90, Piccadilly, London, W.1. (GRO.: 1529).

ADVERTISER SEEKS SCHOOL OR HOME in West of England for high-grade mental defective boy, 16 years; gentle birth. Terms moderate. Manual training desirable.—Address, No. 5118, B.M.A. House, Tavistock Square, W.C.1.

ELDERLY BUSINESS MAN RECOVERING from nervous breakdown requires qualified Medical Practitioner, age not under 35, to act as COMPANION.—Apply, giving full particulars, SCOTTISH BRANCH, BRITISH MEDICAL BUREAU, 21, Alva Street, Edinburgh.

EXPERIENCED TRAVELLER—PROSPECTOR returning Africa to prospect virgin area. Healthy. Big game. Fishing and photography. Would ACCEPT and CARE for SEMI-INVALID or YOUTH requiring open air life (Chest or Asthma). Fullest personal details essential in reply to advertiser's Solicitor, Harold Shepherd, 25, Dover Street W.1.

NATIONAL ADOPTION SOCIETY, 4, BAKER Street, W.1. Telephone: Welbeck 7211, OFFERS ASSISTANCE in the legal adoption of illegitimate and orphan babies into suitable family life. Chairman: THE LADY GWENFTH CAVENDISH.

RESIDENT PATIENT. — COMFORTABLE HOME offered to elderly person or invalid, lady preferred, in doctor's residence. Beautiful country district near London. Every attention given. Terms moderate.—Address, No. 4391, B.M.A. House Tavistock Square, W.C.1.

TYPEWRITING, DUPLICATING, TRANSLATIONS.—Experts in Medical work. TESTIMONIALS, THESES, etc., accurately copied in style that commands attention — WOBURN BUREAU, 3, Upper Woburn Place, London, W.C.1 (adjoining B.M.A. House). EUSton 1775.

TYPEWRITING.—SPECIALISTS IN TYPING medical and scientific papers, lectures, theses, and books. Shorthand-typists always available. Proof-reading, indexing. — MARGARET WATSON LTD., 16, Palace Chambers, Bridge Street S.W.1. WHItehall 3838.

ASSISTANCIES

WANTED, ASSISTANT IN INDUSTRIAL Practice in South Wales. Salary £300 p.a. indoor. Hospital and G.P. experience preferred.—Address, No. 5327, B.M.A. House, Tavistock Square, W.C.1.

WANTED, ASSISTANT (LADY) FOR PRIVATE and Panel Practice three partners, near Manchester. Salary £250 all found, and £50 car allowance. Suit recently qualified. Work light.—Address, No. 5318, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY, INDOOR AND Outdoor ASSISTANTS for town and country Practices, with and without view to Partnership. Good salaries offered.—State full particulars, BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester 2.

WANTED, ASSISTANT, PROTESTANT, early August. Private and Panel Practice, West London suburb. Modern detached house and garage provided in residential district. Good salary. State age, qualifications, experience, nationality.—Address, No. 5324, B.M.A. House, Tavistock Square, W.C.1.

WANTED SEPTEMBER 1st, ASSISTANT. Compact industrial Practice, ten miles from Birmingham. Live at surgery. Prospects suitable man. £350, all found. Must be British. Particulars, photo.—Address, No. 5326, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY, YOUNG, SINGLE, male, reliable ASSISTANT for large and interesting industrial practice within half an hour of Piccadilly Circus and ten minutes of the open country. Initial salary £312 per annum and all found, with an increase as soon as he proves his capabilities. Usual bond. Dispenser kept.—Address, No. 4411, B.M.A. House, Tavistock Square, W.C.1.

WANTED, INDOOR ASSISTANT AT Branch of large Club and Panel Practice, near Birmingham. Salary £325 and £50 for own car.—Address, No. 5126, B.M.A. House, Tavistock Square, W.C.1.

WANTED, INDOOR MALE ASSISTANT (European). £300. Car found. Dispenser and 2nd Assistant.—Apply, with reference and photo, to Address, No. 5335, B.M.A. House, Tavistock Square, W.C.1.

WANTED IN SEPTEMBER, MALE UNmarried ASSISTANT, with a view to partnership in mixed town-country Practice in the Midlands. Panel 3,000, income £3,000. Must be under 28, hold university degree with Hospital and Midwifery experience. Scope for keen worker, good opportunities for sport. Indoor salary with car £300. Third share available, if suitable, in two years. Apply, with recent testimonials.—No. 5313, B.M.A. House, Tavistock Sq., W.C.1.

WANTED, OUTDOOR ASSISTANT, GOOD-CLASS Country Practice, Midlands; must own car. Salary according to experience. Photo, refs.—Address, No. 5305, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT (MALE) for large mixed Practice (with midwifery) in pleasant Lancs. town. £400 per annum, plus £50 car allowance and small unfurnished house.—Address, No. 5315, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT, pleasant country district, N. Wales. Small town with Hospital. Work very light. Car provided. Salary £400.—Address, No. 5311, B.M.A. House, Tavistock Square, W.C.1.

WANTED TO COMMENCE AUGUST 1st, Male ASSISTANT. Industrial practice on Tyneside. Live indoor at branch surgery. Salary, £325 all found. Car allowance.—Address, No. 5114, B.M.A. House, Tavistock Square, W.C.1.

WANTED, TEMPORARY ASSISTANT, woman. English preferred. S.E. district. 4 to 5 months from mid September. Drive car. Some exp. panel. Interview.—Address, No. 5308, B.M.A. House, Tavistock Square, W.C.1.

D.M.R.E. ASSISTANT RADIOLOGIST wanted, Northern District. Experience diagnosis and therapy desirable. Hospital and private; £750 minimum guaranteed. Share later to suitable man.—Address, No. 5306, B.M.A. House, Tavistock Square, W.C.1.

WOMAN ASSISTANT (OUTDOOR) REQUIRED for South London suburb. Suit recent graduate. Car provided.—Address, No. 5337, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS

A LADY DISPENSER BOOKKEEPER supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Bayswater 0969), Secretary, 7, Westbourne Park Road, W.2.

A Course of Training in Dispensing and Pharmacy is given at GORDON HALL SCHOOL OF PHARMACY and Secretary-Dispensers can be supplied to Doctors. Sessions: January, April, and September.—Apply, Principals, School of Pharmacy, Drayton House, Gordon Street, W.C.1. 'Phone: Euston 3930.

DOCTORS REQUIRING QUALIFIED Dispensers, Nurse-Dispensers, Secretary-Dispensers or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSER'S BUREAU, 3, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

ENGLISH DOCTOR, 45, FAMILIAR WITH Panel and good-class Practice, requires AFTERNOON WORK, preferably S.E. London, Kent. Own car. Conscientious and reliable.—Address, No. 5307, B.M.A. House, Tavistock Square, W.C.1.

GENTLEWOMAN WITH WIDOWED MOTHER desires post, HOUSEKEEPER-RECEPTIONIST to Doctor or Dentist. Would furnish house in return for part use and small salary for services.—Box A.R.490, 55, Bryanston Street, W.1.

POSITION REQUIRED BY LADY, CLERICAL and GENERAL ROUTINE in SURGERY (not dispensing). After August. Any district, but country or seaside preferred.—Address, No. 5333, B.M.A. House, Tavistock Square, W.C.1.

THE LONDON AND PROVINCIAL MEDICAL STAFF BUREAU (Licensed annually by the L.C.C.), 24b, Hereford Road, W.2, will supply qualified Dispensers, Secretaries, Receptionists, etc., without fee to Medical Practitioners. 'Phone: Bayswater 0823.

THE ROYAL ARMY MEDICAL CORPS ASSOCIATION, 85, Eccleston Square, S.W.1 (Telephone: Victoria 2722), supplies qualified Dispensers, Book-keepers, Laboratory Assistants, Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk-Orderlies, Porters, Caretakers, etc., without charge to prospective employers.

WOMAN, 12 YEARS' EXPERIENCE Medical Practices, DESIRES POST in or near London, as receptionist bookkeeper; dispensing if necessary. Free Sept. 1st. Salary £3 10s. if living out.—Address, No. 5314, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS

WANTED, LOCUMS BY MEDICAL WOMAN, L.R.C.P.S., L.M.D.P.H. Accus. sole charge of man's practice. Thoroughly experienced and reliable. Now in Kent; will go anywhere.—Address, No. 5323, B.M.A. House, Tavistock Square, W.C.1.

WANTED BY F.R.C.S.(ENG.) ACCUSTOMED to good-class Practice and capable surgical and obstetrician, Hospitality LOCUM (3 weeks/month) in some health resort, July, August or September. Car available.—Address, No. 5336, B.M.A. House, Tavistock Square, W.C.1.

WANTED, LADY LOCUM, JULY 31 to AUGUST 21. Small Shropshire town. Private and Panel Practice. Must have own car. 7 guineas weekly.—Address, No. 5018, B.M.A. House, Tavistock Square, W.C.1.

WANTED, LOCUM FROM EVENING OF July 30th to evening of August 21st. 5 guineas weekly. Able to drive car. London.—Address, No. 5329, B.M.A. House, Tavistock Square, W.C.1.

WANTED, LOCUM TENANCY BY WOMAN Medical July 31st to August 14th. £[illegible] a week and car. Experienced children's women's house physician.—Address, No. 5330, B.M.A. House, Tavistock Square, W.C.1.

DOCTOR (LADY), FREE AUGUST 1st, experienced hospital and general practice, wishes ASSISTANTSHIP with view of locum work. Would travel with invalid. Not car owner, but drives.—Address, No. 5312, B.M.A. House, Tavistock Square, W.C.1.

EXPERIENCED LOCUM, — DISENGAGED July 31. Does not drive. Excellent references. "Locum," 15, Beeston Fields Drive, Nottingham.

F.R.C.S. (ENG.) DESIRES SURGICAL LOCUM in August. Age [illegible], 6 yrs.' experience general and fractures, everything; please state terms. Address, No. 5302, B.M.A. House, Tavistock Square, W.C.1.

HOSPITALITY LOCUM SERVICES OFFERED by experienced Practitioner (F.R.C.S.) on leave from Mission Hospital. Seaside preferred. Accommodation for family required in house or nearby. Available from August 18th. Own car if required.—Address, No. 5343, B.M.A. House, Tavistock Square, W.C.1.

HOSPITALITY LOCUM REQUIRED AUGUST, any fortnight. Country town. Panel £50. Good tennis, golf, swimming; [illegible] Address, No. 5318, [illegible] W.C.1.

LOCUM (EXPERIENCED) REQUIRED FOR Panel and Private Practice for three weeks from August 9th. Salary £8 8s. weekly.—Apply DR. MURRAY, 40, Chatsworth Road, Clapton, E.5, London. 'Phone: Amherst 1743.

LOCUM WANTED, AUGUST 23rd to SEPTEMBER 17th, South Wales; country near sea. Work light. No midwifery. Suit retired practitioner. Abstainer. References required.—Or hospitality offered.—Address, No. 5332, B.M.A. House, Tavistock Square, W.C.1.

LOCUM WANTED IN MIDLAND TOWN, large non-dispensing Practice. Own car necessary. Apply, stating particulars and references.—Address, No. 5344, B.M.A. House, Tavistock Square, W.C.1.

LOCUM WORK WANTED IN LONDON, August, by M.B. (1924). British. Single. Experienced own practice, hospital, general and specialities. Own car. Good neighbourhood desired. References.—Address, No. 5331, B.M.A. House, Tavistock Square, W.C.1.

M.D., CANTAB.; RECENTLY RETIRED, takes LOCUMS. Life abstainer; healthy; 8 gns. General Practice.—DAVIES, 64, Victoria Park, Cambridge. Telephone 3154.

POST-GRADUATE (40) REQUIRES HOSPITALITY, wife and self, London area, Sept. and Oct. House by seaside available same period. Free as LOCUM 14 days between July 31st and Aug. 21st. Own car.—Address, No. 5304, B.M.A. House, Tavistock Square, W.C.1.

RELIABLE LOCUMS WANTED IMMEDIATELY.—Send full particulars, BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester 2.

PARTNERSHIPS

PARTNER REQUIRED WITH VIEW TO eventual purchase of old-established East London practice (near City). House with full residential facilities and surgery. Excellent scope for young Practitioner. Recently started Panel now numbers 200. Cash earnings average £750 p.a. not including Panel and Appointments. (No Agents.)—Address, No. 5303, B.M.A. House, Tavistock Square, W.C.1.

PARTNERSHIP.—HALF SHARE (ABOUT £1,250 gross), nice type, old-fashioned Practice in famous city. Panel and P.M.S. worth £700 p.a. Univ. grad. in med., 27/28, preferred. Premium £2,600. Rent house. Details and photo. —No. 4814, B.M.A. House, Tavistock Sq., W.C.1.

VACANCY FOR THIRD PARTNER IN large Northern Industrial Practice. Panel 4,500. House available. Married man with Hospital and G. Practice experience preferred.—Address, No. 5206, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES

WANTED, BY EXPERIENCED M.B., F.R.C.S., aet. 33, PRACTICE or PARTNERSHIP. Income about £1,500. Good house and educational facilities.—Address, No. 5322, B.M.A. House, Tavistock Square, W.C.1.

WANTED, BY KEEN MARRIED ENGLISH PRACTITIONER, aged 37, *Panel and Private* PRACTICE, with income adequate for small family. Anyone willing to accept good proportion down and balance by quarterly instalments kindly communicate with—Address, No. 5325, B.M.A. House, Tavistock Square, W.C.1.

WANTED BY M.B., Ch.B. MIXED PRACTICE in large town, preferably West of England. £1,000 *or more*, with scope. House with 4-6 bed., garden, etc. Ample capital.—Address, 2823, Percival Turner, Ltd., 4, Adam Street, London, W.C.2.

WANTED, COUNTRY PRACTICE OR PARTNERSHIP, *income £500 to £1,000*. River district preferred.—Address, No. 5310, B.M.A. House, Tavistock Square, W.C.1.

WANTED IN LONDON OR PROVINCES, *PRACTICES with incomes £800 to £2,000*. Many purchasers waiting and quick transactions for immediate cash.—Apply, PEACOCK & HADLEY, LTD., 67-68, Chandos Street, Strand, W.C.2.

WANTED.—*MIXED PRACTICE OF £2,700-£3,000 in South of England*, preferably country or country town.—Address, No. 5301, B.M.A. House, Tavistock Square, W.C.1.

WANTED, PRACTICE IN MIDLAND OR South and West of England. Income £1,000 to £1,200. *At least half panel and appointments.* Near country town. Good school for girls. Old *country house preferred.*—Address, No. 5321, B.M.A. House, Tavistock Square, W.C.1.

WANTED, PRACTICE, MIXED, G.P., W1111 good Panel. Income £1,500-£2,000. Ample capital available. No agents.—Address, No. 5024, B.M.A. House, Tavistock Square, W.C.1.

WANTED, PRACTICE ON CUMBERLAND coast, or near. £1,000-£1,500 p.a. Capital available.—Address, No. 5334, B.M.A. House, Tavistock Square, W.C.1.

A NUMBER OF SMALL PRACTICES AT LOW premiums. Excellent opportunities for practitioners wishing to get a practice with scope.—Apply, PEACOCK & HADLEY, LTD., 67-68, Chandos Street, Strand, W.C.2.

A SMALL RADIOLOGICAL PRACTICE FOR SALE. Scope for increase. London area.—Address, No. 5341, B.M.A. House, Tavistock Square, W.C.1.

CHELSEA—FULHAM AREA. STEADILY increasing mixed-class PRACTICE (panel 570) at present time producing £851, including appointment worth £160 per annum. Introduction given. Premium 2½ years' purchase. Excellent house, with garden and garage, also available.—Address, No. 5345, B.M.A. House, Tavistock Square, W.C.1.

EXPERIENCED PRACTITIONER REQUIRES good-class PRACTICE or Partnership, share producing about £2,000; preferably Gloucestershire, Somerset, Berks, or Sussex country.—Address, No. 5338, B.M.A. House, Tavistock Square, W.C.1.

EXPERIENCED PRACTITIONER WANTS small PRACTICE. Premium by arrangement. No country districts or house purchasing. Would take whole-time Appointment.—Address, No. 5309, B.M.A. House, Tavistock Square, W.C.1.

FOR IMMEDIATE DISPOSAL ON ACCOUNT of complete breakdown in health, small, easily worked PRACTICE, with great possibilities of expansion, in prosperous industrial district near London. Panel 800 and corresponding good private connection. Freehold residence, with surgery and pleasant garden.—Address, No. 5346, B.M.A. House, Tavistock Square, W.C.1.

FOR SALE, OLD-ESTABLISHED COUNTRY PRACTICE. Present hands 9 years. Receipts £1,096; £582 from panel; transferable appointment £60; clubs £44. House to rent, £40; garage and garden. Exceptional security. Nearest opposition 6 miles. Vendor taking appointment.—Address, No. 4818, B.M.A. House, Tavistock Square, W.C.1.

MIDDLESEX.—NEAR HARROW. SMALL Mixed-class *PRACTICE for sale. Average income last three years, £550. Panel about 400.* Premium, 1½ years' purchase, one-third down.—Address, No. 5317, B.M.A. House, Tavistock Square, W.C.1.

MIXED CLASS PRACTICE FOR SALE, receipts £500, panel 450, very good prospects of increasing. Suitable house for sale or let.—Apply, W. Trench, Solicitor, 15, Queen Street, Edinburgh.

NEAR BRIXTON, S.W. OLD-ESTABLISHED PRACTICE. Receipts, private £200 p.a., and in addition, panel 620. Nice semi-detached house, rent 30s. per week. *Premium moderate.*—Apply, PEACOCK & HADLEY, LTD., 67-68, Chandos Street, Strand, W.C.2.

NORTHERN IRELAND.—SMALL GROWING PRACTICE for sale. Country town in beautiful district. Income past 10 months, £305. Panel, 185, with prospect of considerable increase. Excellent house, with garage, garden, electricity at low rental. *Premium £300.*—Address, No. 5131, B.M.A. House, Tavistock Square, W.C.1.

NORTH LONDON.—ESTABLISHED MIXED PRACTICE for sale. Panel about 500, private about £250. Surgery, long profitable lease. House also available if required. No deferred terms. Moderate Premium.—Address, No. 5340, B.M.A. House, Tavistock Square, W.C.1.

OLD-ESTABLISHED COUNTRY PRACTICE within 50 miles of London requires junior Partner with experience in House appointments. Quarter share approximately £1,125 p.a. at two years' purchase, share to be increased at later date. House to rent.—Address, No. 5213, B.M.A. House, Tavistock Square, W.C.1.

OLD-ESTABLISHED, GOOD-CLASS PRACTICE for sale. Average receipts over £3,000. South Coast.—Address, No. 5339, B.M.A. House, Tavistock Square, W.C.1.

SALE.—RECENTLY ESTABLISHED PRACTICE, seaside place, near Newcastle. Calculated annual gross income, £300-£500. Panel 50, increasing. Also small club. House rent £45 inclusive. Premium, including drugs, instruments, and furniture, offers.—Address, No. 5316, B.M.A. House, Tavistock Square, W.C.1.

SALE.—PANEL AND PRIVATE PRACTICE. Sheffield Central. Panel over 1,300. Receipts £2,000. Increasing premium. 1½ years' purchase. No agents.—Address, No. 5320, B.M.A. House, Tavistock Square, W.C.1.

SOUTH COAST.—EXCEPTIONAL OPPORTUNITY to obtain PRACTICE with excellent prospects, in a well-known resort. Rapidly developing area. Beautiful house and garden. 400 panel. £650 last twelve months. Increasing quickly. Sound reason for sale.—Full particulars, Address, No. 5328, B.M.A. House, Tavistock Square, W.C.1.

SURREY. 10 MILES VICTORIA. WELL established mixed class PRACTICE, steadily increasing. Receipts last year nearly £700 Panel over 300. Very nice house, rent £85. Premium only £650, payable £300 down.—Apply, PEACOCK & HADLEY, LTD., 67-68, Chandos Street, Strand, W.C.2.

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ATTRACTIVE REGISTERED RESIDENTIAL NURSING HOME (9 beds) FOR SALE on long lease. Established 3 years. Receipts, 1935, £1,600; 1936, £2,000; to June, 1937, £960. Situated in residential district, Surrey. Further particulars on application.—Address, No. 5134, B.M.A. House, Tavistock Square, W.C.1.

HARLEY STREET AND DISTRICT.—A NUMber of excellent CONSULTING ROOMS are available for full and part-time use at moderate rents. Particulars on application.—ELGOOD & CO., 10, Henrietta Street, Cavendish Square, W.1. Lang. 2601.

PARK LANE. (MARBLE ARCH.) DENTAL practitioner has one or two CONSULTING ROOMS to let. Rent from £200 p.a., includes use of waiting-room and usual services.—Address, No. 2627, B.M.A. House, Tavistock Square, W.C.1.

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CONSULTING ROOM IN DISTINGUISHED private house between Harley Street and Portland Place; door plate, service, every convenience. Moderate rental. Full medical qualifications essential.—Write Box P. 111, SCRIPPS'S, South Molton Street, W.1.

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FINE COMMODIOUS RESIDENCE IN SELECT District, quiet surroundings, close to extensive Common Lands. 10 Bed., 3 Bath., 4 Recep., Billiards room. All modern conveniences. Grounds of about ¼ an acre. To be let or sold.—H. B., 1260, London Road, S.W.16. Pollards 4401.

FOR SALE, IN RESIDENTIAL SUBURB OF Manchester, very large DWELLING-HOUSE, with central heating, parquet floors, and every modern convenience; suitable for nursing home or similar institution.—Apply 1, Summerlands, Dudley Road, Manchester, 16.

FREEHOLD RESIDENCE, SPLENDID POSITION in select road, close to Woodford Station; rapidly growing district with hundreds of new houses. 5 beds, bath, 3 receps, usual offices. An offer of about £1,200 considered.—R. CHEKE AND CO., 11, High Street, Wanstead.

LARGE DETACHED HOUSE IN EXCELLENT residential district, with 4 bedrooms, lounge with Ingle Nook, large garage with washbowl fitted, would decorate to suit purchaser. Reasonable deposit and liberal mortgage can be arranged. Free from road costs.—Apply Brentwood, Shepley Drive, Hazel Grove, near Stockport.

PRESTATYN.—CHARMING SPACIOUS SEMI-BUNGALOW, modern, labour-saving. Acre beautiful grounds, easily maintained. Arbour with sun roof. Tennis court, orchard. Garage. Suitable private residence, convalescent home.—No. 5319, B.M.A. House, Tavistock Square, W.C.1.

PROFESSIONAL WOMAN WANTED TO SHARE self-contained, airy furnished FLAT in Bloomsbury. Moderate rent, including telephone, baths, lighting, etc. Occupant out all day.—Eldod, Regent Club, 19, Buckingham Street, W.C.2.

QUEEN ANNE STREET.—BEAUTIFULLY Decorated SELF-CONTAINED FLAT of two rooms, kitchen and bathroom; constant hot water and central heating. Rent £150. Part-time consulting-room available in building. £50 p.a.—Address, No. 4424, B.M.A. House, Tavistock Square, W.C.1.

TO LET, LEICESTER.—"THE LIMES," well-situated corner HOUSE on main road in populous district; 10 rooms, bath, etc.; all modern conveniences, garden.—Apply GLENCORA, 225, Leire Road North, Leicester.

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APPOINTMENTS.—Contd.

VICTORIAL HOSPITAL, LOVEDALE, Cape Province, South Africa.

Applications are invited for the following posts:
(*a*) MEDICAL SUPERINTENDENT AND CHIEF MEDICAL OFFICER.
(*b*) TWO ASSISTANT MEDICAL OFFICERS, one of whom may be a woman.

The Victoria Hospital is part of the Lovedale Mission of the Church of Scotland, and Medical Officers must be in full sympathy with the missionary aims of the Hospital.

The Hospital contains 175 beds and is for Natives only. There is a large department for surgical tuberculosis in children; also an out-patient department.

The Hospital trains Native Nurses for the examinations of the South African Medical Council. It also co-operates with the S.A. Native College, Fort Hare, in the training of Medical Aids for service under the Union Government.

Medical Officers will receive salary on the scale £350 by £20 to £650 (or for woman—£325 by £15 to £500), initial salary depending upon professional standing and experience.

Further information can be given on application to: The Principal, Lovedale Institution, Lovedale, Alice, C.P., South Africa, or to The Foreign Mission Secretary, 121, George Street, Edinburgh.

METROPOLITAN HOSPITAL, Kingsland Road, E.8. (150 Beds.)

Applications are invited for the post of CASUALTY OFFICER AND RESIDENT ANAESTHETIST (male). Salary at the rate of £100 per annum, with board, residence and laundry. Duties to commence August 1st next. Candidates must possess a registered medical and surgical qualification of the United Kingdom.

Form of application may be obtained from the undersigned.

FRANK JENNINGS,
House Governor and Secretary.

THE PRINCE OF WALES'S HOSPITAL, Devonport. Plymouth.
(Formerly Royal Albert Hospital, Devonport.)
(64 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON. Salary £120 per annum, with board, residence and laundry.

Duties to commence immediately. Appointment is tenable for six months, and is subject to renewal, or promotion to the Senior position when this post becomes vacant. Applicants must be registered under the Medical Acts.

Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned forthwith.

FRANK ROWE.
July 20th, 1937. Secretary.

THE PRINCE OF WALES'S HOSPITAL, Greenbank Road, Plymouth.
(Formerly South Devon and East Cornwall Hospital.) (264 Beds.)

Applications are invited for the posts of HOUSE PHYSICIAN AND HOUSE SURGEON. Salary £120 per annum, with board, residence and laundry.

Appointments are tenable for six months, and are subject to renewal. Duties to commence immediately.

The Hospital is officially recognised for the surgical practice required before admission to the Final Fellowship Examinations of the Royal Colleges of Physicians and Surgeons of England.

Applicants must be registered under the Medical Acts. Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned forthwith.

ARTHUR R. CASH.
July 20th, 1937. Gen. Supt. and Secretary.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, Haverstock Hill, N.W.3.

APPOINTMENT OF CASUALTY OFFICER.

Applications are invited from unmarried registered medical women for the position of Casualty Officer at the Out-Patient Department of the Hospital at Bayham Street, Camden Town. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should be sent to the Secretary.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, Haverstock Hill, London, N.W.3.

APPOINTMENT OF HOUSE PHYSICIAN.

Applications are invited from unmarried medical men for the appointment of House Physician on August 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on July 22nd next.

ROYAL BERKSHIRE HOSPITAL, READING. (338 Beds.)

Applications are invited for the following Resident appointment:

One CASUALTY OFFICER (male).

The appointment is for six months, and candidates must be fully qualified and registered.

Remuneration at the rate of £150 per annum, with board, residence and laundry.

Applications, stating age and experience, with copies of testimonials, to be sent to the undersigned as soon as possible.

H. E. RYAN,
Secretary and House Governor.

ROYAL BERKSHIRE HOSPITAL, READING. (338 Beds.)

Applications are invited for the post of RESIDENT ANAESTHETIST (male), which falls vacant on August 15th, 1937.

Candidates must be fully qualified and registered and have had considerable experience in the administration of Anaesthetics.

The appointment will be for a period of not less than six months.

The salary of £250 per annum, with board, residence and laundry, will be paid to the candidate possessing suitable qualifications for the post.

Applications, stating age and experience, with copies of not more than three recent testimonials, to be sent to the undersigned as soon as possible.

H. E. RYAN,
Secretary and House Governor.

ST. JOHN'S HOSPITAL, LEWISHAM, S.E.13.

There is an immediate vacancy for the Resident post of CASUALTY OFFICER (male), tenable for six months at a remuneration of £100 p.a. Applications, with copies of testimonials, should be sent to the undersigned.

J. C. GILBERT,
Secretary-Superintendent.

HOSPITAL FOR EPILEPSY AND PARALYSIS, MAIDA VALE, W.9.

HOUSE PHYSICIAN required September 1st. Applications are invited for this post. The salary is at the rate of £100 per annum and the appointment is for two months, which may be extended to eight months. Applications, accompanied by copies of three recent testimonials, should reach me by July 31st.

The accommodation at the Hospital does not permit of women graduates holding this appointment.

H. W. BURLEIGH,
Secretary and General Superintendent.

MANSFIELD AND DISTRICT GENERAL HOSPITAL.
(140 Beds. To be increased to 203.)

The Board of Management of the above Hospital invite applications for the post of HOUSE SURGEON (male). Duties to commence July 24th. Salary at the rate of £150 per annum, with residence, board and laundry. The appointment is for six months, and is renewable. The staff consists of Resident Surgical Officer and two House Surgeons.

Applications, stating age, qualifications and nationality, accompanied by not more than three recent testimonials, to be sent to the undersigned.

C. J. ADAMS,
Secretary.

THE NATIONAL TEMPERANCE HOSPITAL, Hampstead Road, N.W.1.

Applications are invited for the following post:
CASUALTY OFFICER (male). Salary £120 per annum, board, residence and laundry allowance being provided.

The appointment is for a period of six months as from August 1st. Preference will be given to those who have held a resident post. Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, July 22nd, addressed to the Secretary.

KING GEORGE HOSPITAL, ILFORD (Near London). (207 Beds.)

HOUSE SURGEON (male) required immediately for six months. Salary £100 p.a.

Forms of application may be obtained from the undersigned, to whom they should be returned, duly completed, as soon as possible.

(Signed) G. AUSTIN HEPWORTH.
Secretary and Superintendent.

SWANSEA GENERAL AND EYE HOSPITAL. (336 Beds.)

Applications are invited for the undermentioned posts now vacant:

(a) HOUSE SURGEON for six months. Salary £150 per annum.

(b) LOCUM H.S. to E.N.T. and Ophthalmic Departments for three months. Salary £200 p.a.

Emoluments include board, residence and laundry.

Applications, stating age, qualifications, experience and nationality, to be forwarded to the Secretary-Superintendent, Swansea Hospital.

ST. MARK'S HOSPITAL FOR CANCER, Fistula and other Diseases of the Rectum. City Road, E.C.1.

Applications are invited for a CLINICAL ASSISTANT in the Out-Patients' Department for the session on Mondays at 2 p.m. The appointment is for six months in the first instance, and a fee of three guineas is payable on appointment. Applications to reach the Secretary at the Hospital by July 24th, 1937.

THE WEIR HOSPITAL, GROVE ROAD, BALHAM, S.W.12. (30 Beds.)

JUNIOR RESIDENT MEDICAL OFFICER required as soon as possible (male, unmarried). Candidates must be fully qualified and duly registered. Salary £150 per annum, with board, residence and laundry. Applications, with copies of testimonials, to be sent to the Secretary, from whom further information may be obtained.

THE BUCHANAN HOSPITAL, St. Leonards-on-Sea. (103 Beds.)

JUNIOR HOUSE SURGEON (female) required to commence duties as soon as possible. Salary at the rate of £125 per annum. Candidates must be duly registered Medical Practitioners and applications should include three copies of recent testimonials.

FRANK HART,
Secretary.

ANNIE McCALL MATERNITY HOSPITAL.

MEDICAL WOMAN (honorary) wanted for Infant Welfare Clinic. (Wednesdays) 2 p.m. Post-Graduates welcomed, £10 10s. (including board). Operative Midwifery Class, £3 6s.—Sec., 165, Clapham Road, London, S.W.9.

ROYAL NORTHERN HOSPITAL, Holloway, N.7.

A vacancy occurs for a CLINICAL ASSISTANT in the Radio-Therapeutic Department.

Applications should be addressed to the Secretary.

THE LONDON CHEST HOSPITAL, Victoria Park, E.2, *formerly* City of London Hospital for Diseases of the Heart and Lungs.
(Bus, Tram and Rail, Cambridge Heath, L. & N. E. Railway.)

A vacancy for a HOUSE PHYSICIAN (male) will occur on September 1st. Six months' appointment. Salary at the rate of £100 per annum. Board, residence and laundry provided.

Applications, with copies of three testimonials, should be sent to the undersigned on or before Wednesday, August 5th, 1937.

GEORGE WATTS,
Secretary.

N.B.—Vacancies occur at an interval of two months.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.

Applications are invited for the post of HOUSE SURGEON (male) for six months from August 12th (first two months in Casualty Department). Salary at the rate of £120 per annum, with full board and residence.

Applications, with copies of three recent testimonials, should be sent to the undersigned, from whom particulars can be obtained, not later than first post on Tuesday, July 20th.

W. H. SIDNELL,
July 2nd, 1937. House Governor.

NATIONAL HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Queen Square, W.C.1.

ASSISTANT PHYSICIAN. Applications are invited for the post of Assistant Physician. Particulars of the appointment may be obtained from the undersigned, to whom applications should be sent not later than July 17th. Applicants must be Members or Fellows of the Royal College of Physicians.

GODFREY H. HAMILTON,
Secretary.

NATIONAL HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Queen Square, W.C.1.

HOUSE PHYSICIAN. Applications are invited for the post of House Physician, and should be sent to the undersigned, accompanied by three recent testimonials, not later than July 17th. The salary is £100 per annum, with board and lodging.

GODFREY H. HAMILTON,
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4 MIDDLESEX.—PARTNERSHIP in increasing Practice doing about £2,400 in residential district, easy distance of London. Panel 1,150. Small house (3 bedrooms, etc.), to rent. Premium for share of £800 two years' purchase. Option to increase to one-half in five years. Preliminary Assistantship.

5 COUNTY TOWN, within 65 miles of London.—PARTNERSHIP in Practice averaging between £2,300 and £2,400 p.a. Panel about 2,000. House containing 6 bedrooms, for sale or rent. One-third share (after preliminary Assistantship) at one and three-quarter years' purchase, or near offer.

6 LONDON, E.15.—Old-established PRACTICE, averaging £1,670 p.a., in populous suburban district. Panel 1,990. Small house in excellent repair. Rent £50 p.a. Good scope. Premium two and a quarter years' purchase.

7 S. MIDLANDS.—PARTNERSHIP in first-rate country town Practice, about £6,000, within 40 miles of London. Panel 3,500. Suitable house obtainable. Premium one-sixth share two years' purchase. Preliminary Assistantship entertained.

8 DEATH VACANCY.—LONDON S.W.18.—Receipts average about £450 p.a. No dispensing panel or midwifery. Pleasantly situated house for sale or rent. Practice capable of increase.

9 SURREY.—Very old-established PRACTICE in populous suburban area. Receipts last year £1,476. Panel 1,300. Rent of private residence (6 bedrooms, etc.), £80 p.a. Surgery close by for sale or rent. Scope. Premium one and three-quarter years' purchase.

10 NORFOLK.—PARTNERSHIP in steadily increasing Practice, about £2,300, in delightfully situated country town. Panel about 1,850. Good society and sport. One-third share at first at two years' purchase.

11 S. MIDLANDS.—PARTNERSHIP (short preliminary Assistantship) in Practice, over £5,000 p.a., in first-rate town. Panel nearly 5,000. House with 4 bedrooms, garage and garden, to rent. One-fifth share at first at two years' purchase.

12 YORKSHIRE.—PARTNERSHIP in Practice averaging £3,600 p.a., in busy industrial town. Panel 3,325. Good house (6 bedrooms), garage and garden at moderate rent. One-fourth share at first at two years' purchase. Partner should be aged about 30 and preferably married.

13 LONDON, N.5.—Middle-class PRACTICE, averaging £866 p.a., including appointment worth £135 and a panel of 676. Nice corner house (5-6 bedrooms), garden and garage, to rent. Premium £1,250.

14 OPHTHALMIC Practice in S. RHODESIA.—LOCUM TENENS required immediately with view to purchase. Gross receipts, 11 months to March, 1937, £1,536. Possibilities of expansion for man with D.O.M.S. or D.O. and operative experience. Good well-equipped hospital.

15 LONDON, S.E.—Old-established and increasing PRACTICE of £2,500 p.a. in suburban district. Panel 2,000. Detached double-fronted house (5 bedrooms, etc.), garage and garden. Freehold for sale. Premium two years' purchase.

16 HOME COUNTIES.—Old-established PRACTICE of over £1,000 p.a. in beautiful country district on Bucks and Northants borders. Panel 536. Attractive house (6 bedrooms, etc.), Freehold for sale, or rent. Premium two years' purchase.

17 EAST ANGLIA.—Old-established PRACTICE of about £1,200 p.a. in prosperous country district. Panel 730. Double-fronted house (6 bedrooms, etc.), garage and large garden for sale. Premium one and three-quarter years' purchase.

18 LONDON, N.W.—PARTNERSHIP in increasing Practice in new developing area. Cash receipts year ended 31st March, 1937, £2,862. Panel 2,830. Good house with central heating (5 bedrooms, etc.), to rent or for sale. Premium for half-share, £2,750, or possibly the whole would be sold.

19 S. MIDLANDS.—PARTNERSHIP in steadily increasing Practice, averaging £2,500 p.a., in good town. Panel 1,800/1,900. Good house (3 bedrooms) to rent. Incoming partner should be aged about 35 and experienced in gynaecology and preferably hold F.R.C.S. or M.C.O.G. Premium for one-third share, two years' purchase.

20 LONDON, E.—Middle-class PRACTICE of over £2,400 p.a., in outlying district. Panel 2,870. House in good repair. Garage and garden. Freehold for sale. Premium two and one-quarter years.

21 EAST ANGLIA.—Old-established country PRACTICE of nearly £1,100 p.a. Panel 832, returning for 1936 £582, and appointments. Good house (3 bedrooms), garden and garage. Rent £40 p.a. Premium two years' purchase.

22 S. OF ENGLAND.—PARTNERSHIP (after preliminary assistantship) in Practice about £4,500 p.a. in market town within 100 miles of London. Fees 5/- to £1 1s. One-fifth share would be sold to suitable man (after six months' preliminary assistantship) at two years' purchase. Hospital and scope for surgeon.

23 S. OF ENGLAND.—PRACTICE of about £300 p.a. carried on by a medical woman in a cathedral town. Panel 100. House (2 bedrooms, etc.), to rent. Premium £500.

24 AUSTRALIA.—Old-established PRACTICE of £1,400 p.a., in agricultural township. Good house (3 bedrooms, etc.), for sale. Premium £1,400 and £250 for X-ray plant.

25 S.W. OF ENGLAND.—PARTNERSHIP in old-established Practice, averaging over £3,750 p.a., in attractive country town. Panel 2,300. Visits 3/6 to £1 10s. Choice of two houses (one for sale, the other to rent). Hospital and prospect of appointment. Premium one-third or two-fifths share at two years' purchase.

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Practices and Partnerships for Disposal (continued).

26 MIDLANDS.—Old-established PRACTICE in beautiful country district. Cash Receipts last year £1,280, including appointments worth about £60, and a panel between 650 and 700. Visits 2/6 to £1 1s. without medicine. Nicely situated house (4 bedrooms, dressing-room, etc.), with nice garden and two garages. Rent about £80 p.a. Premium two years' purchase.

27 LONDON, N.—Well-established PRACTICE averaging £450 p.a. in pleasant district. Panel about 600. Well-situated house on main road. Rent about £65 p.a. Good scope—building going on. Premium £600 or offer to include surgery fittings and drugs.

28 N. WALES BORDER.—PARTNERSHIP (with early succession) in old-established County Practice, about £2,500 p.a., in important town. No panel. Surgery premises could be purchased or rented. The private residence is available if required. A share up to one-half would be sold at first with early succession. Premium two years' purchase.

29 DEATH VACANCY.—ESSEX SUBURB.—Receipts average nearly £850 p.a. Panel 423. Semi-detached house (4 bedrooms). Price £800 freehold. Reasonable offer accepted.

30 LONDON, S.W.1.—SPECIAL PRACTICE for catarrhal conditions, nasal catarrh, hay fever, asthma, etc., etc., about £1,000 p.a., in commanding position in Grosvenor Place. Consultations 1-3 guineas. Special terms for series of treatments. Excellent accommodation to rent at £100 p.a., on lease. Scope Premium one and a-half years' purchase.

31 SEASIDE TOWN WITHIN AN HOUR OF LONDON.—Very old-established PRACTICE. Receipts average £625 p.a. Panel about 300. Nice detached house (5 bedrooms), with garage and garden, for sale or rent. Good scope. Premium £1,000.

32 SCOTLAND.—Good-class family PRACTICE average income £1,300. Panel over 900. Also House for sale. Reasonable premium.

33 RESIDENTIAL DISTRICT WITHIN 15 MILES OF LONDON.—Old-established PRACTICE. Receipts last year over £2,000. Panel about 1,600. Visits 3/6 to 10/6. Nice residence (4 bedrooms, dressing room, etc.), good garage and garden, for sale or rent.

34 LONDON (Western District).—PARTNERSHIP in Practice averaging about £3,550 p.a., including good panel. House containing 4 bedrooms, etc., large garage and nice garden. One-third share at first. Premium two years' purchase. Preliminary Assistantship if desired.

35 MIDLANDS.—Old-established non-dispensing PRACTICE in first-rate residential town. Cash receipts average £1,640 p.a. Panel 560. House contains 6 bedrooms, etc., garage and small garden. Price £2,400 freehold. Scope. Hospital. Premium £2,850.

36 LONDON, S.W.—Old-established good-class non-dispensing PRACTICE *in neighbourhood of Victoria.* Receipts last year over £660, including an appointment worth £60 and panel of about 200. Visits range from 3/6 to £1 1s., mostly 10/6 to 12/6. No Midwifery. Nice flat (3 bedrooms). rent £275 p.a. on lease inclusive. Scope. Premium £1,200.

37 E. MIDLANDS.—Old-established country PRACTICE, averaging nearly £650 p.a., *in pleasant village.* Appointments worth over £150 and panel 500. Charming stone-built house (6 bedrooms), with central heating, main electric light and power and water supply. Large garage: garden about 1¼ acres. Price freehold £1,700 Scope Premium, two years' purchase.

38 LONDON.—Well-established RADIOLOGICAL PRACTICE in thickly populated suburban district. Receipts last three years averaged £1,060 p.a. Fees range from 10/6 to £8 8s. House containing 10 rooms, would be sold for £800 or let at £50 p.a. on lease. *Good introduction* Premium £1,800.

39 KENT.—Old-established and steadily increasing PRACTICE (in hands of Medical Woman) in rapidly developing district Receipts last year £680. No panel. Visits mostly 5/-, medicine extra. Suitable residence could be obtained. Excellent scope. Premium £1,000.

40 N.E. COAST.—PARTNERSHIP (after preliminary Assistantship) in mixed Practice, about £3,300 p.a., *in seaport town.* Panel *2,600.* A suitable house could be obtained. One-third share at first to suitable man at two years' purchase (or near offer), with option to increase to two-fifths in three years and to four-ninths later.

41 S. OF ENGLAND.—Old-established PRACTICE in agricultural district about two miles from the sea. Cash receipts, 1936, £995, including panel of 450. Fees 2/6 to £1 1s. Medicine extra. Good house (5 bedrooms, 2 box-rooms, etc.), in half acre of ground with garage. Central heating. Electric light. Price freehold £1,800 Scope for increase. Premium £1,700.

42 LONDON, S.W.—Well-established PRACTICE (held by Medical Woman) *in outlying suburban district.* Cash receipts average £960 p.a. No panel, but scope if desired. Purchaser could have use of surgery premises and living accommodation with services by arrangement. Premium one and three-quarter years' purchase

43 N.E. COAST.—Old-established and easily worked *middle and better working-class PRACTICE,* averaging over £1,150 p.a., in seaport town. No panel—a few contracting out-patients. Visits 5/- to 15/-. Rent of consulting rooms, £26 p.a. A suitable residence could be obtained. Good scope, much building going on. Premium £1,500. (Contents of consulting rooms—including X-Ray plant and electrical apparatus—about £130.)

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NORTH WALES.—PARTNERSHIP (after short Assistantship) in old-established middle-class Practice in pleasant Coast town. Knowledge of Welsh desirable. Cash receipts £6,000 p.a. Panel 2,600. Well-equipped Hospital. Incoming partner would be required to live in flat. Premium—1/5th share (approximately £1,200 p.a.)—1½ years' purchase.—No. 988.

CHESHIRE/DERBYSHIRE BORDER.—Old-established PRACTICE in Country district. Cash receipts last year £700 (increasing). Panel 862. Great scope. Excellent house, 2 reception, 4 bedrooms, 3 Professional rooms (separate entrance), garage and good garden. Premium—£1,000.—No. 989.

LANCS TOWN.—Old-established mixed-class PRACTICE. Cash receipts last year £2,615. Panel 2,494. Scope. Excellent House with good living and Professional rooms, for sale or may be rented. Premium—1½ years' purchase.—No. 984.

DERBYSHIRE.—Old-established PRACTICE in pleasant district near large town, offering great scope for increase owing to building developments. Suitable for two men in partnership. Cash receipts last year £3,436. Panel 3,394. Two good houses, with ample accommodation and modern conveniences, each with garage, garden and tennis court. Premium—2 years' purchase.—No. 955.

MANCHESTER.—Very old-established mixed Panel and Private PRACTICE. Cash receipts last year £2,100. Panel 2,800. Scope. Good house, 2 reception, 4 bedrooms, 3 Professional rooms, garage. Rent £75 p.a. Premium—2 years' purchase, or near offer.—No. 990.

MONMOUTHSHIRE.—Old-established Panel Contract, and Private PRACTICE in prosperous district. Cash receipts last year £1,400. Panel 1,200, plus Contract work, yields £1,230 p.a. Good house, 2 reception, 5 bedrooms, Professional rooms (separate entrance) and garage.—Rent £40 p.a. Expenses low.—Premium—£2,000.—No. 970.

NORTH MIDLANDS.—Old-established mixed-class PRACTICE, near beautiful country and within easy reach of large town. Average cash receipts £1,100 p.a. Panel 970 and transferable appointments £200 p.a. Scope. Nice detached house, 3 reception, 6/7 bedrooms, garage and large garden. Freehold. Premium—1½ years' purchase.—No. 991.

NEAR MANCHESTER.—Sound middle and working-class PRACTICE. Average cash receipts £2,692 p.a. Panel over 2,500. Scope. Detached corner house, 2 reception, 4 bedrooms, 3 Professional rooms, garage and garden. Premium—1¾ years' purchase.—No. 952.

CHESHIRE TOWN.—PARTNERSHIP (after preliminary Assistantship) in mixed Panel and Private Practice. Cash receipts last year £3,293. Panel 3,000. Scope for increase. Incoming partner may choose own residence. Local hospital and scope for surgery. Premium—1/3rd share—2 years' purchase.—No. 992.

LANCS TOWN.—Old-established Panel and Private PRACTICE in large town. Average cash receipts £1,310 p.a. Panel 900. Scope, Good house, 2 reception, 4 bedrooms, garage. Expenses low. Premium—1½ years' purchase.—No. 987.

SUFFOLK.—Old-established Country PRACTICE, practically unopposed. Cash receipts last year £1,081. Panel 835 (yields £582 p.a.). Scope. Good house, 2 reception, 3 bedrooms, garage and nice garden. Rent £40 p.a. Premium—best offer.—No. 993.

NORTH WALES COAST.—Middle-class PRACTICE. Receipts £1,417 p.a. Panel 415. Excellent house with ample accommodation, garage and garden. Premium—£2,100.—No. 929.

LANCS TOWN.—Well-established mixed-class PRACTICE in large town. Cash receipts approximately £4,000 p.a. Panel approximately 2,800. Suitable house available to rent. Alternatively an entirely separate PRACTICE of about £2,200 p.a., with a Panel of 1,870 would be sold.—No. 920.

YORKS (N.R.). — Old-established unopposed Country PRACTICE in beautiful district near to large town. Cash receipts approximately £1,200 p.a. (including £455 p.a. from Panel). Good house, 2 reception, 5 bedrooms, large garden, garage, water, gas and electricity. Rent £70 p.a., on lease. Premium—2 years' purchase or near offer, to include drugs and fittings.—No. 973.

LANCS TOWN.—Mixed panel and private PRACTICE, in present hands 30 years. Cash receipts approximately £1,500 p.a. Panel 1,500. Great scope. Good house, 2 reception, 4 bedrooms, garage and small garden. Rent £50 p.a. Premium, best offer.—No. 945.

NEAR NEWCASTLE-ON-TYNE.—Colliery PRACTICE. Cash receipts last year £952. Panel 800. Scope. Good house to rent. Premium—1½ years' purchase.—No. 978.

YORKSHIRE (W.R.).—PARTNERSHIP SHARE worth £1,700 p.a. with Panel of 1,169 and appointments £80 p.a. in practically unopposed Country PRACTICE. Nice detached House, 2 reception, 4 bedrooms, garage, ½-acre garden and tennis lawn. Electricity, etc. Premium—2 years' purchase. Reason for sale—ill-health of Vendor.—No. 985.

SHEFFIELD.—Established PRACTICE. Cash receipts £1,112. Panel 600. House to rent at £52 p.a. Premium—1½ years' purchase.—No. 940.

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LANCS TOWN. — Mixed-class PRACTICE. Cash receipts £1,084. Panel 1,050. Good house. Premium—1½ years' purchase.—No. 951.

NEAR MANCHESTER.—Very old-established mixed-class PRACTICE capable of much increase owing to building developments. Cash receipts last year £1,006. Panel 470. Nice detached house, 2 reception, 5 bedrooms, garage and large garden. Separate entrance to surgery. Price £650. Premium—Practice—1 year's purchase. Vendor retiring.—No. 875.

ANGLESEY.—Mixed Panel and Private PRACTICE about £600 p.a. Panel 200. Scope. Large house for sale or may be rented. Premium—1 year's purchase.—No. 980.

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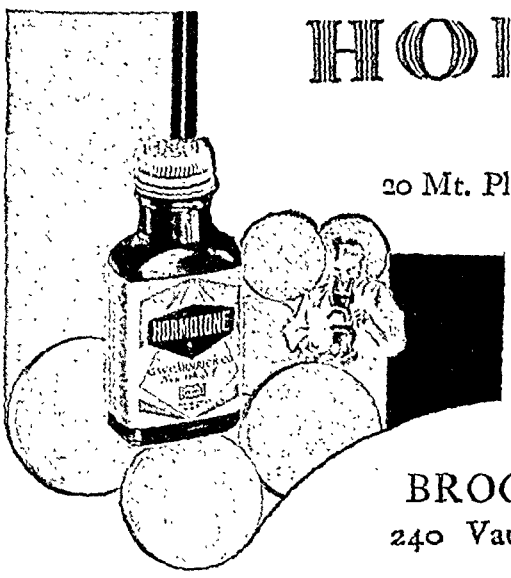
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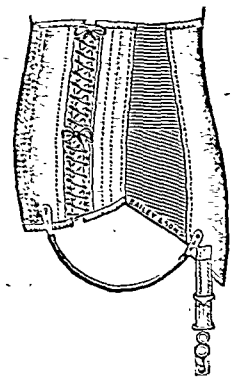


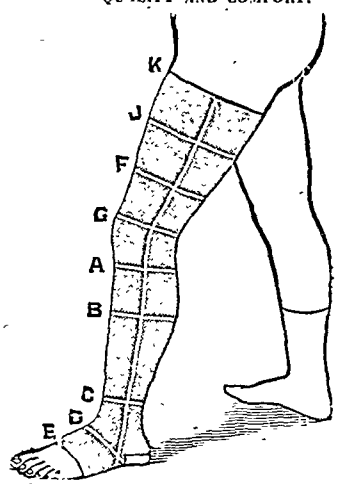
Fig. B690

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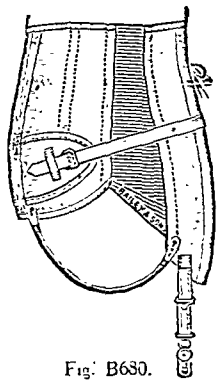
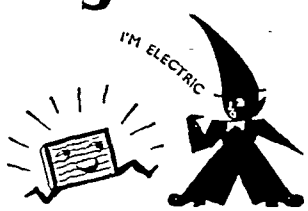


Fig. B680.

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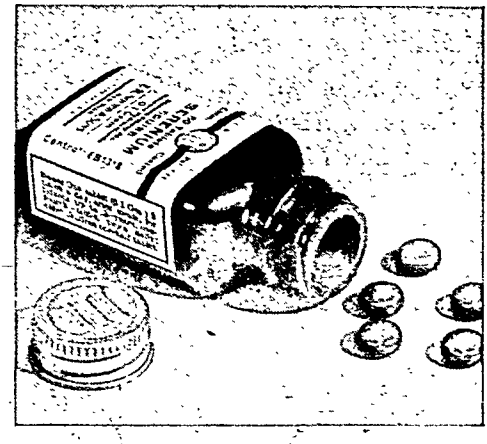
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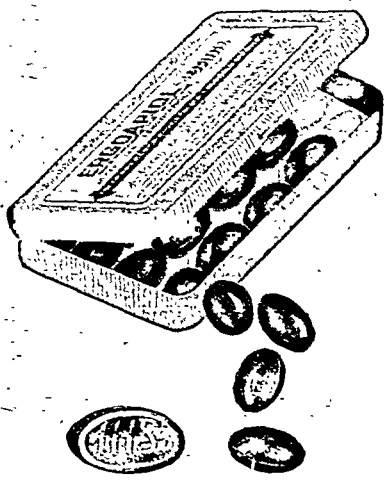
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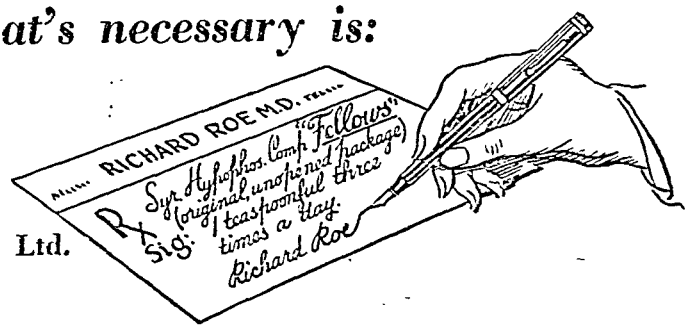
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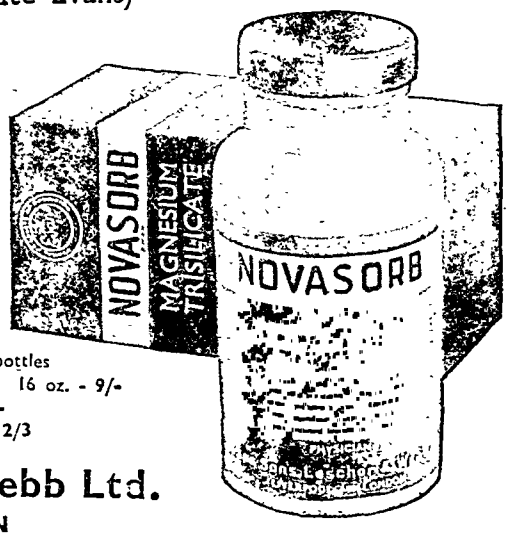
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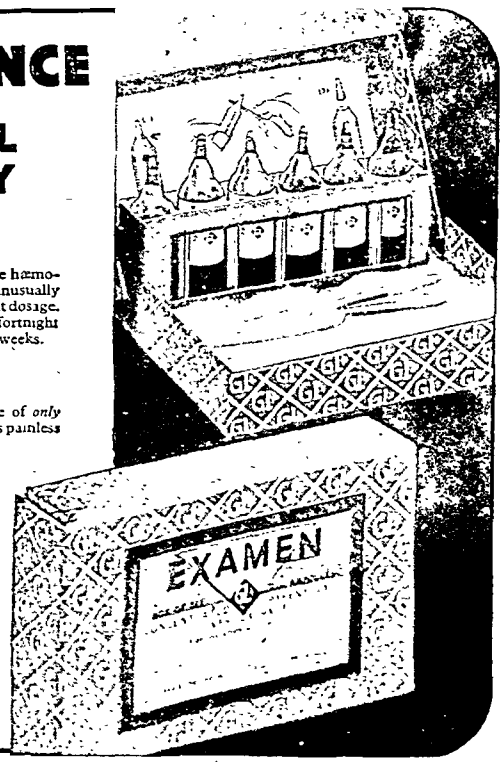
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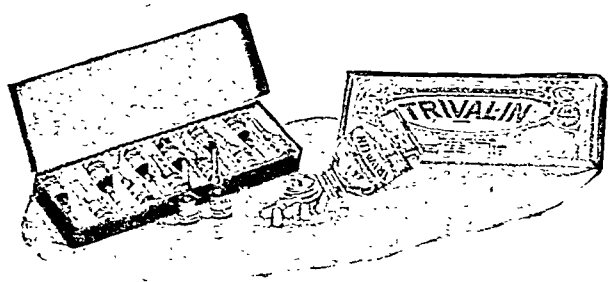
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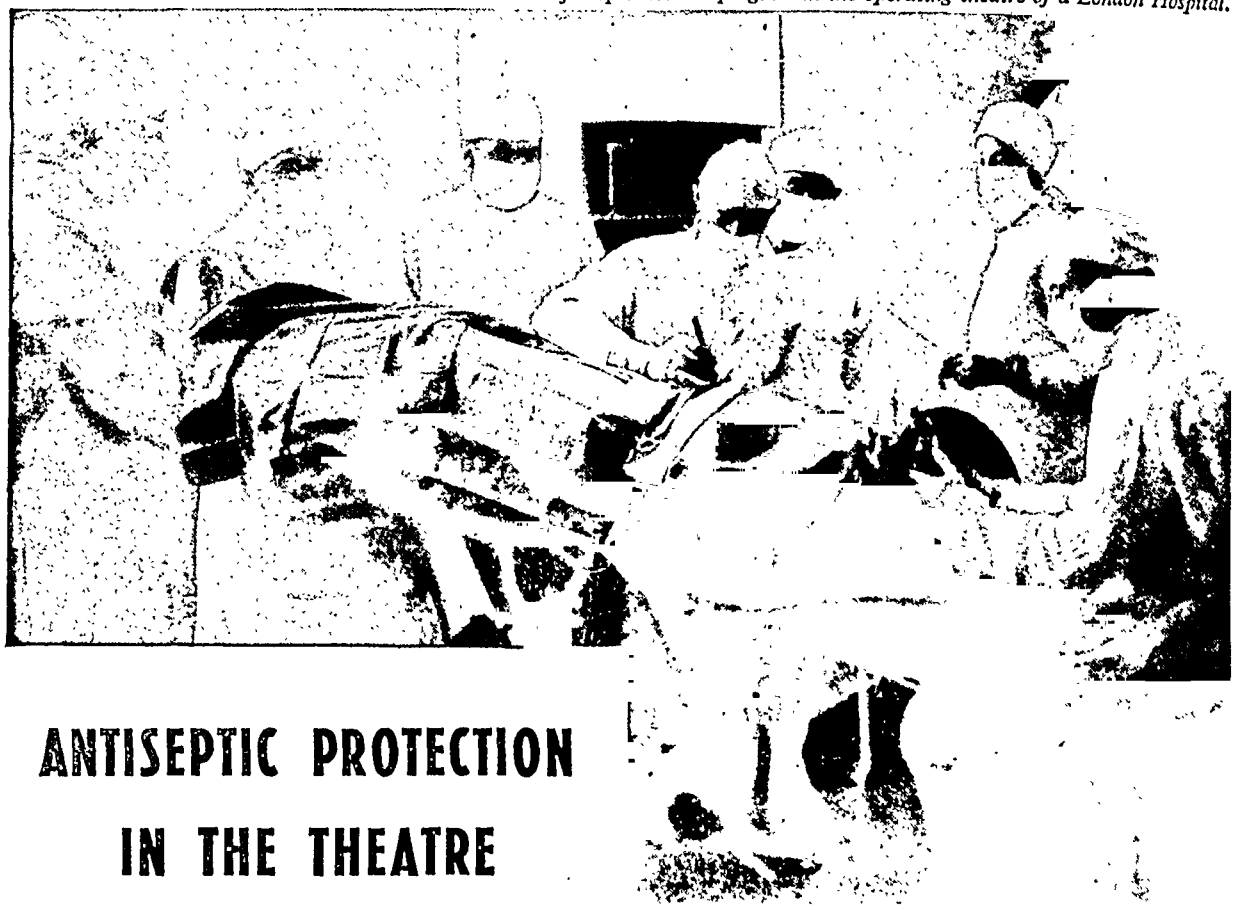
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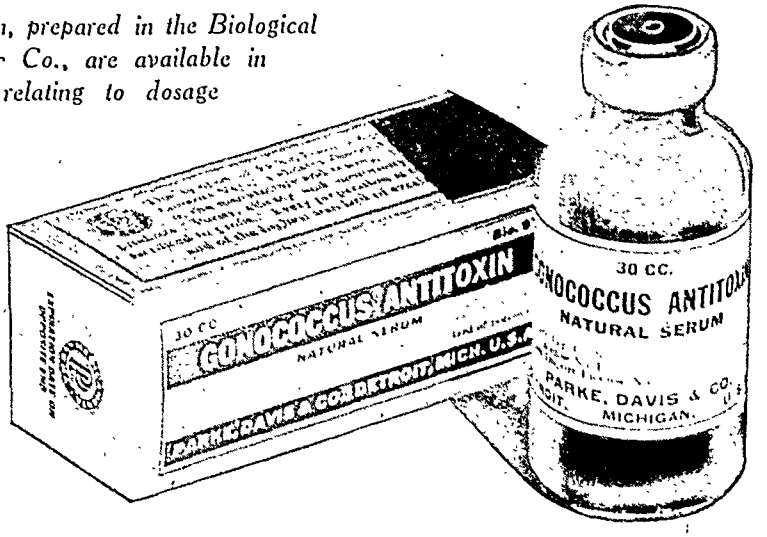
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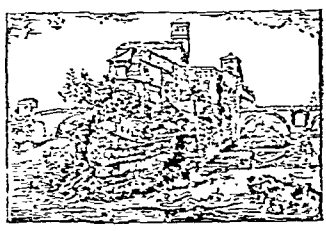
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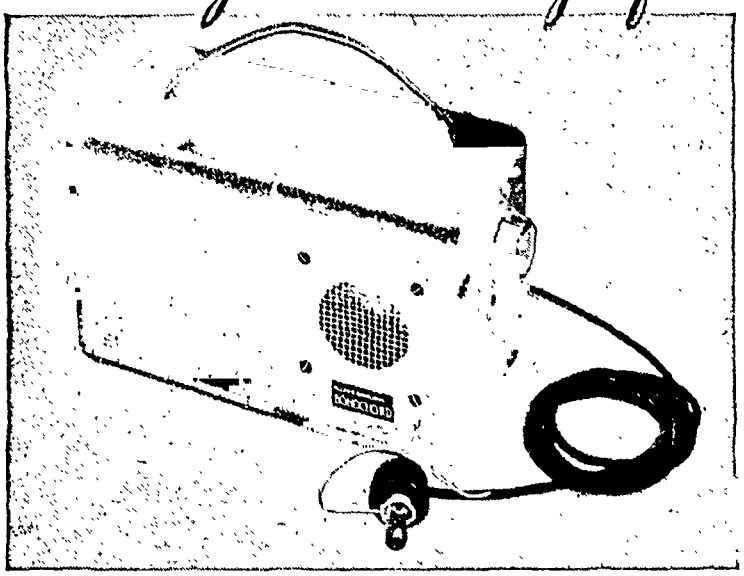


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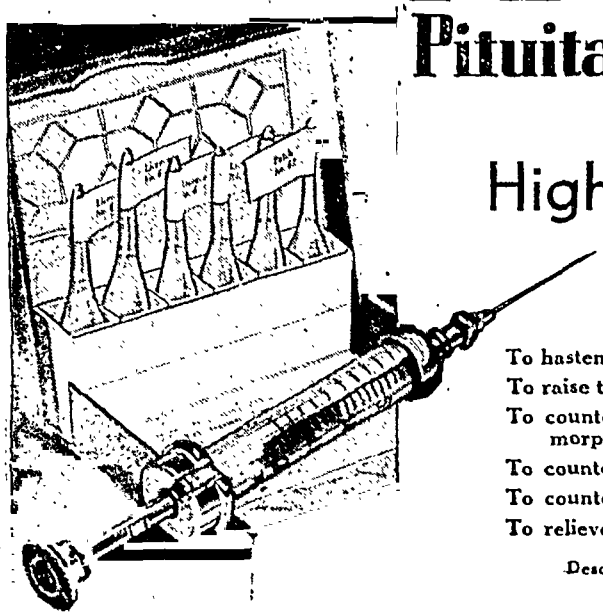
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BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 24 1937

British Medical Association

ONE HUNDRED AND FIFTH ANNUAL MEETING, BELFAST, 1937

President's Address

SOME THOUGHTS ON MEDICAL EDUCATION

BY

R. J. JOHNSTONE, B.A., M.B., F.R.C.S., F.C.O.G.

Professor of Gynaecology, Queen's University, Belfast; Consulting Surgeon, Royal Maternity Hospital

Let me begin my address to you to-night by expressing again my thanks to the representatives of the British Medical Association for electing me to the Presidency—and you will permit me to add my appreciation of the warm and confident friendship of my colleagues in Northern Ireland who nominated me for this high office.

Our Association is not a mere trade union for collective bargaining. It is taking upon itself, it is having forced upon it, important public functions. It has advised on the formulation of policy and has assisted the plans of administrators. In this age of public health service it speaks with the authority of the medical profession behind it and is an important factor in affairs. While it has always maintained the honour and the interests of the medical profession, a review of its policy shows that it has never in that interest betrayed the community.

The Presidency of such an Association is no mean honour, and it is an honour enhanced by the distinction of those who have held the office before me. I have no intention of inflicting upon you a bead-roll of my predecessors, but it is my pious duty to commemorate the Presidents at your two previous meetings in Belfast. I do so with the more pleasure as both of them were my teachers, and of one I was for many years a colleague.

Presidents at Belfast in Earlier Days

When the Association first met here in 1884 Professor James Cuming was President. He was a physician of a type perhaps more common in those days than in these, a type which owed to the humanities and to medicine at least an equal allegiance. As an undergraduate one felt that a knowledge of Horace was possibly a better passport to his good graces than an acquaintance even with Fagge and Pye-Smith. His wide knowledge both of men and of medicine, his fundamental common sense, and not least his commanding presence made him a court of appeal as a consultant, and his judgements were delivered in measured phrase, in logical sequence, not seldom with ironic humour. In therapeutics he was not merely a sceptic—I speak now of his later years—he was an iconoclast. There is a story, probably apocryphal, that after a consultation he discussed at great length the diagnosis with the patient's doctor, who finally grew restive and said, "But what treatment am I to give him?" Cuming lifted a Burroughs Wellcome price list from his desk, handed it gravely to the inquirer, and said in his most impressive tones, "Begin at A and work through that."

In 1909 Sir William Whitla sat in the President's chair—also a physician, but with a difference. One evening he described to me at some length how he had almost persuaded the reader of his publishing firm that the split infinitive, as he used it, was an enhancement of English. In his own subject of materia medica and therapeutics he was a recognized authority. But his chief claim on the gratitude of his fellows was that he was a pioneer in a path of medical literature on which he has since had many followers. His *Dictionary of Treatment* came as a boon to many a harassed practitioner who had reached the end of his therapeutic resources. It was an immediate success, and retained its popularity through successive editions. It gained the distinction of translation into more than one foreign language, and one of Sir William's cherished possessions was a beautifully bound version in Chinese.

To his own profession Sir William was most generous. Besides his private kindnesses to his brethren in need he built and presented to the Ulster Medical Society as its permanent home the Medical, since his death the Whitla Medical, Institute. At its opening he told us that he had built it out of the profits on his *Dictionary of Treatment*.

His benefactions did not end with his life. He had been one of those who in the face of much opposition advocated the establishment of Queen's University. He had served it as Professor, as Senator, as Pro-Chancellor, and as member of the Imperial Parliament. When he died he left to the University his house and grounds as a residence for the Vice-Chancellor, together with a large share of his considerable fortune. The money has been earmarked for building, and when the Association next visits Belfast my successor will deliver his address in the Whitla Hall of the University.

Interest in Medical Education

The subject on which I have chosen to address you is that of medical education—partly because I am much interested in it myself as a teacher of graduate and undergraduate students of medicine ever since I got my qualification; partly because, if one may judge by the numerous criticisms of our present system of education I have read, my interest is shared by many others; and lastly, because medical education should be a matter of vital concern to

every practitioner and to every member of the B.M.A. Our profession cannot afford to recruit at a C3 standard. In this health-conscious age of ours public authorities are constantly launching one health scheme after another. As experts we ask for our collective advice to be taken and for our collective services to be employed. But the adminstrator has the last word, and while the specialist or the whole-time officer is practically immune from criticism, the incompetence or the carelessness of a few can be alleged as a reason for excluding the whole class of general practitioners from participation in a service. We are asking for our rights; but rights involve responsibilities, and if we are to enjoy the one we must be prepared to the last man to discharge the other.

I need not remind members of this Association of the many practical ways in which it shows its interest in medical education, "both postgraduate and undergraduate."

The critic of the medical curriculum assumes generally that we teachers at the end of five years should turn out a finished product, and goes on to blame us because we do not produce a finished general practitioner. No one expects us to turn out at the end of the five years a finished surgeon or anatomist or pathologist. Everyone recognizes that to form a specialist years of postgraduate study and experience are required. Are we to take it that the path which the general practitioner must follow to reach the mastery of his art is shorter and less steep than that trodden by the specialist? I should say "No." The specialist must know almost everything about his subject; the general practitioner must know something about almost every subject. He must learn to make his diagnoses without the skilled help which the specialist commands, and to carry out his treatment with makeshift appliances and with amateur nursing. He must acquire sufficient diplomacy to deal with unreasonable patients, with suspicious relatives, with inquisitive neighbours. He must keep in touch with the demands of public authorities and of public services. His responsibilities are if anything greater than those of the specialist, for he is the court of first instance, and on his decision the life of a patient may depend. His word may put a man in the dock or may even send him to the gallows.

Just as the finished surgeon must have had responsible experience of surgery, the finished general practitioner must have had responsible experience of general practice. The undergraduate's horizon is limited by the threatening figures of a court of examiners. Only when that grim spectre has faded is he free to take a view of the responsibilities which he must shoulder throughout the rest of his professional life—responsibility to his patients, to his own reputation, and, most important of all, to his own private conscience. The better trained the young graduate, the more quickly and the more competently does he take up the burden.

I may very pertinently be asked how, if practice is essential to form a good practitioner, can licensing bodies be justified in giving a licence to practise to those who have not had this experience. I can only reply that after many years as an examiner and as an inspector of final examinations I am satisfied that the dominant question in the mind of every examiner is "Is it safe to the public to allow this candidate to practise?" and that only when that question can be answered in the affirmative is he permitted to pass.

Clinical Study and the Undergraduate

As the practice of clinical medicine is the most important factor in forming the young practitioner and is to be his chief pursuit in after-life it is but natural that would-be reformers of the curriculum should demand that yet more clinical study should find a place in the education of the undergraduate. I should be the last to disagree, but do not let us be led into the fallacy of thinking that clinical training is the be-all and end-all of medical education.

A probationer nurse and a medical student have each approximately three years of clinical experience. The nurse's opportunities for clinical observation are infinitely better than those of the student. She probably sees at least as many patients, and she does not merely see them during a ward visit. She lives with them hour after hour and day after day, watches the course of their disease, notes its changing phases, and the effect of the methods of treatment that have been employed. She assists at consultations, and has the benefit of listening to clinical lectures. And she makes full use of her opportunities. Every one of us must acknowledge with gratitude the debt that we owe to the trained nurse for her help in diagnosis, in prognosis, and in treatment. But does her unrivalled clinical experience qualify her to take on the function of a medical practitioner? She would herself be the first to say "No." She lacks the background, the background of human anatomy and physiology and pathology, of knowledge of the human body in health and in disease, which the medical student has gained with much toil and sweat and against which his clinical observations are composed and the picture interpreted. It is the main business of a medical education to provide an adequate background and to teach how it should be used, and the more competently that work has been done the more valuable will his clinical experience be to the practitioner.

Importance of Practical Anatomy

I have put human anatomy in the first place as a necessary preliminary to clinical study. Teachers of anatomy are usually the most popular of professors among medical students, so it is only poetic justice that their teaching should be a favourite point for attack by the critics. And perhaps the commonest criticism is that such an unconscionable time is wasted by the student in the dissecting-room.

Is his time really wasted? The successful clinician takes little upon trust, and so far as is possible checks all his facts by his own personal observations. But in almost all the sciences which the medical student must study he is compelled to take most of his facts on trust. Practical classes permit him to verify a few of them, but he has neither the time nor the technical skill to go further. When he takes up practical anatomy he is not merely permitted and encouraged, he is required by his own personal observation to verify the statements of his teacher and of his textbook. This is an invaluable discipline, even if a knowledge of anatomy were of little use in practice. But anatomy is the large-scale map of the human body, and we have it on the authority of one who was both a scientist and a statesman that if we wish to get an understanding of peoples and of events it is essential to study large-scale maps.

Lectures and Lecturers

If the anatomist is Public Enemy Number One of the medical student, Number Two is undoubtedly in the eyes of the critics the lecturer. We who lecture might conjugate the verb something like this, "We are dull, you are falling asleep, they think we should be painlessly exterminated." The pity of it is that the critics are to some extent in the right. There are dreary lectures and dull lecturers, and that is a pity; for after one has

listened to a master of the art one is left in no doubt as to the superiority of the spoken word above the printed page in rousing interest in a subject and in presenting it in the round.

Teaching and lecturing are arts that can be learned, and nowadays a training in them forms part of the preparation of all primary and of many secondary school teachers. Would it not be possible that an institution such as the Postgraduate Medical School should give a course in lecturing, and that those who have designs on the teaching posts in our medical schools should be encouraged to take it out?

I do not propose to take up your time with further discussion in detail of the medical curriculum and of its critics. Doubtless it could be improved, but, so far as I have been able to find out, our medical students get a training certainly not inferior to that given in any other civilized country. Of course the curriculum is overcrowded, but fortunately the brain of the undergraduate is elastic and has a well-developed protective mechanism of forgetfulness, not likely to atrophy through disuse.

The Young Physician

However much or little the young graduate has retained of the many sciences he has become acquainted with, he has had a training in observation, in the use of his critical and his reasoning faculties, and in dealing with men, women, and examiners. He has the key to the vast storehouse of knowledge contained in medical literature, for he is familiar with its idiom. He now enters on the most important stage of his lifelong medical education. He now becomes his own teacher and taskmaster. He has had to learn to think like other people, he must now think for himself. Only thus can he transmute the ore of scientific knowledge into the gold of clinical wisdom.

In all but a few instances the neophyte begins his career under the tutelage of one of his seniors, either a member of a hospital staff or a general practitioner, and that senior has a great responsibility, for by precept and still more by example he may make or mar a promising practitioner. Both in this stage and later, when he has at last hoisted his own flag, the young physician need not want for aids in self-education. Nothing is more helpful than a circle of medical friends who are not ashamed to talk shop. Of much the same kind of value is the consultant who is willing to discuss cases at length. Lectures in a class-room may be indigestible fare for the undergraduate; delivered in a medical society they seldom fail to provide food for thought for the graduate student. His journals may be relied on to add to and to correct his store of knowledge.

Postgraduate Training

We have long had the postgraduate course for the few, but the National Health Insurance Act has now made it available for the many. If I might be permitted to criticize I think that most postgraduate courses try to administer to their medical patients what used to be called a "blunderbuss prescription," and that too much is attempted in too short a time. But these courses are still in their infancy. Some day we may see the general practitioner going back to his old school or to another school for a month, for three months, even for a sabbatical year, both to learn and to teach. And he will come back to his patients as he does from our present courses, not merely with his skill enhanced, but, what is perhaps more important, with his interests freshened and his enthusiasm rekindled.

There are possibilities of postgraduate training in the linking up of practitioners with hospitals, as Sir Farquhar Buzzard suggested last year. Leaving aside the difficult question of interference by one practitioner with the patients of another, there are many adminstrative problems to be overcome. With good will on both sides these should not be insoluble; but it will, I am afraid, be a long time before administrators can be brought to believe that a panel of doctors is just as efficient and reliable as, and gives no more trouble than, a whole-time officer.

Perhaps in the future all difficulties will be solved by the establishment of a State medical service. Like good democrats we shall always oppose it. But every fresh instalment of social and of public health legislation, every new chapter opened in the volume of State control, brings us steadily nearer to the totalitarian ideal, and when that has finally arrived I suppose we may say good-bye to the general practitioner as we know him.

The G.P. Past and Present

But he is still with us, and I ask myself, How does he compare with his predecessor of a generation back? His equipment is undoubtedly better, he has for the service of his patients a store of knowledge and an acquaintance with technical resources not even dreamt of when I was a medical student. But I take down a volume written more than forty years ago by one who had been a patient of many doctors, and when I read his judgement on our profession I realize that in the eyes of the patient—a critic who must not be lost sight of—qualities are at least as important as technical accomplishments. Let me quote a part of that judgement to you:

> "There are men and classes of men that stand above the common herd; the physician almost as a rule. Generosity he has such as is possible to those who practise an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Heraclean cheerfulness and courage. So it is that he brings air and cheer into the sick-room, and often enough, though not as often as he wishes, brings healing."

One is proud to belong to the profession which merited such a tribute from Stevenson, for he was anything but a fool; but how little he says of the skill and of the training on which we set such store, and how much of virtues and of qualities unmentioned in any curriculum, and which no teacher whom I have ever met would undertake to impart. Does our scheme of education do nothing to foster them?

Medical practice and medical education has its repellent side, often sordid and sometimes disgusting. I do not think that many youngsters take up the drudgery of medicine unless they have as part at least of their motive a lively interest in humanity and some sympathy with human suffering. A hospital is the best of soils to foster such good qualities and to encourage them to develop into the most admirable of medical virtues. Close contact with men and women, the constant witness of their fortitude, their patience, their unselfishness in the face of pain, of disability, of death itself, is a more impressive lesson than the skeleton at the Egyptian feast, and only the most careless or the most callous can fail to benefit by it. Attendance in the wards and in the out-patient rooms, still more a residence in hospital, long a feature in Irish medical schools and soon to be introduced in the United Kingdom generally, is an education in behaviour no less than in clinical medicine. It is the better school for that,

as patients in British hospitals are treated as men and women with feelings which can be hurt and a personal dignity which can be outraged.

Conclusion

But I must bring to a close these disjointed remarks on medical education. I have no anxieties about our students. Their standard is as high as it ever was, and they are getting and taking an excellent training. To the seniors, of whom I am one, the two-edged compliment may be paid that it is impossible to improve us. But I do feel uneasy about the most important class in the profession, the young general practitioner in the twenties and the early thirties. Is panel practice giving him an assured income too soon? Is it taking away the incentive to study and to improve the standard of his practice? Is he sitting down at ease in Zion? I trust not, for it is upon him that we depend to maintain and to raise the prestige of our profession.

ELONGATION AND DILATATION OF THE COLON*

BY

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An approach to any problem of colonic disease must inevitably take into consideration the embryological origin of the large bowel, its adult anatomy, and its physiological duality.

Development

The colon is developed from two sources: (1) the midgut, supplied by the superior mesenteric artery; and (2) the hindgut, supplied by the inferior mesenteric artery, the juncture in the adult being about the middle of the transverse colon. Until the end of the first month the future small and large intestines are approximately of the same length, and the colonic rudiment is actually narrower than that of the small intestine. The second month sees the beginning of the rapid elongation of the primitive small bowel, but it is not until the fifth month that the calibre of the colonic rudiment begins to enlarge. The alimentary tube, originally straight, is rearranged after the second month by the rotation of the primitive bowel about the superior mesenteric artery; when this stage is completed the future caecum comes to lie anterior to the right kidney, the future splenic flexure has attained its adult position, and the future descending colon has been forced from its median position into the left flank by the rapid elongation of the small bowel. From this time until just after birth, when the adult anatomical arrangement is reached, there occur two processes which appear to be correlated with man's upright position: (1) descent of the caecum to the right iliac fossa as a result of elongation of the proximal part of the primitive colon, and (2) the disappearance of the dorsal mesentery from certain segments of the colon.

Normal Anatomy

To the complete peritoneal coat of the caecum may be added a short mesentery; the ascending colon is uncovered by peritoneum posteriorly. The transverse colon has a mesentery of varying length, which confers corresponding mobility on this segment. The descending colon lacks a mesentery, and the iliac colon up to the brim of the true pelvis is fixed to the parietes, whereas the pelvic colon forms a long free loop with a fan-shaped mesentery which allows a wide range of movement, the loop being four to ten times as long as the root of the mesentery.

Developmental Anomalies

It is not a surprising matter that a tube having such a complicated development should be a site of anatomical anomalies. Thus Treves found a mesentery to the descending colon in 36 per cent. of 100 cases, and to the ascending colon in 26 per cent. According to Dott's (1923) classification, anomalous development which might lead to elongation of the colon may be due to excessive growth in length of a segment, to deficient fixation of a segment to the abdominal wall, or to deficient fixation of the common mesentery of the terminal ileum and caecum, so that the caecum, or an ileo-colic segment, possesses a wide range of mobility. To this list may be added the plication of a segment of the tube which occurs when its mesentery is congenitally short, although the tube itself is of normal length or even elongated (Bernard and de Tayrac, 1935).

The Nerve Supply of the Colon

As a part of the alimentary canal the colon is innervated by both sympathetic and parasympathetic fibres. The "midgut" colon (caecum, ascending colon, and right half of transverse colon) derives its nerves from the plexus accompanying the colonic branches of the superior mesenteric artery; this is made up of contributions from the semilunar ganglia (sympathetic, from the thoracic splanchnic nerves) and from the right vagus nerve (parasympathetic). The "hindgut" colon (left half of transverse colon, descending and pelvic colon, and rectum) is innervated by nerves accompanying the inferior mesenteric artery, which are derived from the pelvic splanchnic nerves (sympathetic), and by branches arising from the hypogastric plexuses (parasympathetic, from the second, third, and fourth sacral nerves). The latter nerves pursue an independent course unrelated to the vessels, and have been traced (Mitchell, 1935) as far as the splenic flexure. Thus the proximal part of the colon is influenced by the cranial parasympathetic outflow (right vagus nerve), whereas the distal part is influenced by the sacral parasympathetic outflow. It has been shown (Learmonth and Markowitz, 1930) that stimulation of the sympathetic nerves is followed by inhibition of colonic activity. The parasympathetic nerves are motor to the distal colon.

The sphincter apparatus at the anus has two components: an internal sphincter, of unstriped muscle, which in man contracts on stimulation of the pelvic splanchnic (sympathetic) nerves (Rankin and Learmonth, 1930), and an external sphincter, of striped muscle, supplied by the (somatic) pudic nerves.

Physiology of Defaecation

Little need be added to the concise description of the mechanism of defaecation given in the admirable paper by Garry (1934), which I quote: "As in lower animals, eating food increases the activity of the human colon and frequently initiates a mass peristalic action leading to defaecation. This response was first noted by Macewen in patients with caecal fistulae. Subsequently the name gastro-colic reflex was applied by Hurst and by Hurst and Newton. . . . For our knowledge of the movements of the large bowel in *man* we are deeply indebted to Hurst. . . . Three or four times a day a massive peris-

* Read in opening a discussion in the Section of Diseases of Children at the Annual Meeting of the British Medical Association, Belfast, 1937.

taltic wave drives the contents of the proximal colon bodily into the distal colon. Before and during the movement the haustral segmentation disappears. Holzknecht was the first to detect this mass movement in the human colon. In man the rectum is normally empty and faecal matter accumulates proximal to the pelvi-rectal flexure. As a result of one of the infrequent massive peristaltic waves faecal matter enters the rectum and the call to defaecation becomes clamant. In the act of defaecation itself strong peristaltic contractions occur throughout caecum and colon, the intra-abdominal pressure is raised by contraction of the diaphram and of the abdominal muscles, and the faeces are forced through the relaxed sphincters of the anal canal." The stimulus for the act of defaecation is distension of the rectum (Hurst, 1934; Denny-Brown and Robertson, 1935).

Possible Mechanical Results of Variations in Arrangement of the Colon

These may be considered under two headings:

1. *In the Caecum.*—It has been stated that when the caecum is unduly long and perhaps continued into an ascending colon possessing a mesentery, it lies constantly in the pelvis, and the absence of direct attachment to the abdominal wall deprives this part of the tube of a "hold," so that its contractions are less effective and its contents tend to stagnate. Formidable lists of symptoms have been attributed to caecal and colonic stasis produced in this way. At least in the adult, general and abdominal symptoms are not inevitably associated with mobility of the caecum; and attempts to provide an anchorage for it by operation have been almost entirely given up.

2. *In the Transverse and Sigmoid Colon.*—In these situations there are two theoretical possibilities: (*a*) that mobility conferred by an unusually long mesentery may lead to kinking of the gut or to volvulus; (*b*) that an elongated segment of colon possessing a mesentery of normal length would tend to be plicated and kinked (Bernard and de Tayrac, 1935).

Both these conditions are said to occur in the sigmoid of infants, which is stated by some observers to be relatively longer than in the adult. It is quite clear that, at least in later life, the colon may deviate widely from the normal arrangement (if there is such) without the appearance of abdominal symptons.

The rational view seems to me to be that the prolonged accumulation of gas and faeces in an elongated or mobile colon may lead to kinking, but that the cause of the accumulation is not the anatomical disposition of the colon itself.

Clinical Considerations

I am greatly indebted to Dr. William Brown, senior physician to the Royal Hospital for Sick Children, Aberdeen, for allowing me to utilize his clinical material. Members of the Section will be able to add their own experience; but I have found that the cases fall into certain groups:

1. Constipated children in whom the radiological examination discloses an anatomically and physiologically normal colon: the colon is normal in length and in mobility, and its contents are evacuated normally.

2. Constipated children in whom the radiological examination reveals an anatomical anomaly—for example, undescended caecum, mobile ileo-colic segment—and in whom satisfactory function can be produced and maintained by simple training and simple therapeutic measures.

3. Constipated children who suffer from periodic diarrhoea from the retention of faeces, and in whom the radiological examination after barium enema shows a distended colon, which the child can successfully evacuate after the bowel has been thoroughly emptied and trained.

4. Constipated children in whom the radiological examination after barium enema appears to show kinks either in the mobile parts of the colon or at a flexure, usually the splenic flexure. After simple treatment and training the constipation may be remedied, although the "kinked" appearance after a barium enema persists.

5. Constipated children in whom a barium enema outlines an elongated loop of colon, usually the pelvic colon, this appearance persisting after regular and satisfactory evacuations have been secured by appropriate treatment.

6. Constipated children in whom the barium enema discloses an elongated and distended colon; treatment may or may not result in satisfactory evacuation (megacolon). (Perhaps it is superfluous to remind members that the barium enema is a measure of the distensibility of the colon, and not necessarily of its tone. This important point has been emphasized by Hurst, who very rightly insists that the physiological efficiency of the large bowel can be assessed more accurately after a barium meal.)

From consideration of this clinical grouping it is quite clear that anatomical abnormalities of the colon do not inevitably cause constipation, and the success of a simple regime in cases showing elongation and/or dilatation seems to me to provide weighty evidence against the possibility of such anatomical conditions ever directly causing constipation. This view is supported by the observations of Khalik, Erfan, and Askar (1932), who found that anatomical variations in the length and calibre of the colon were common in infants who did not suffer from constipation. In the presence of faecal stasis it is conceivable that the possession of a long colon may increase and tend to perpetuate the condition by so altering the alignment of the large bowel that the *massive onward movement of its contents* preliminary to defaecation is impeded.

Treatment.—If I exclude cases of megacolon, which I shall deal with separately, it seems to me that certain general deductions can be made as to treatment. In the absence of evidence that anatomical peculiarity has any repercussion on colonic function, I would lay down the rule that surgical intervention in such cases is not indicated. It is true that successful cases of partial colectomy have been published, and that from time to time sympathetic neurectomy has been utilized in so-called intractable cases of constipation. I would like to make it clear that I do not now believe that neurological operations are ever indicated in constipation (apart from megacolon), whether the patient is a child or an adult. The severity of colectomy (even in young children) has been greatly reduced by the use of modern methods; but "successful" cases, to my mind, do not prove the efficacy of the treatment, but merely that a shortened colon can function adequately—which is a surgical commonplace.

Megacolon

"Megacolon can be defined as dilatation and hypertrophy of a part of the colon or of the whole colon, occurring in the absence of a gross obstructive lesion" (Adamson and Aird, 1932). It is a rare disease. [4 in 131,000 cases in a general hospital (Walton, 1930); 1 in 2,620 cases in a children's hospital (Hurst, 1934).]

The present view is that the enormous hypertrophy and dilatation so characteristic of the disease are the result of neuro-muscular dysfunction, and are congenital. The nature of this dysfunction is still problematical. The local changes in Auerbach's plexus described by Cameron may well, as Adamson and Aird (1932) point out, be secondary to other pathological changes in the wall of the bowel. The occasional association of dilatation of the bladder and/or ureters with megacolon focuses attention on their common nerve supply—pelvic splanchnic sympathetic

nerves and sacral parasympathetic nerves; it must be realized that over-activity of the one or under-activity of the other might produce the same result; and, indeed, Adamson and Aird have produced the condition in animals by dividing the parasympathetic nerves to the distal colon. Of neurogenic hypotheses mention may be made of spasm of the internal sphincter (Fenwick), achalasia of the sphincter ani (Hurst), and incoordination of the musculature of the colon, so that it does not relax before a peristaltic wave (Hawkins).

My own view is that the colon does not behave as if a terminal obstruction were present, for in such cases surgeons are accustomed to depend on early distension of the caecum as a constant diagnostic sign, and this is inconstant in megacolon. Adamson and Aird (1932) put the incidence of the disease as pelvic colon alone 37 per cent., with dilatation of the upper part or the whole of the rectum in 34 per cent. of cases. In only 25 per cent. does the dilatation extend to the ileo-colic valve, and in the remainder the descending, transverse, and ascending colon are involved with decreasing frequency. Radiological observations on the barium-filled colon show that it is active, although its activity is without result and may even give the impression of being purposeless.

My opinion at the moment is that the whole picture points to the presence of local segmental neuro-muscular incoordination when the disease does not involve the rectum, and that when the rectum is dilated there is added achalasia of the sphincter ani internus.

Treatment.—It has been shown by Morton and Scott (1930) that after spinal anaesthesia the colon may be able to evacuate its contents. As this procedure paralyses parasympathetic as well as sympathetic nerves one must conclude that the intrinsic neuro-muscular mechanism is adequate in such cases. In less severe types, preliminary enemata, training of the bowel, and the administration of liquid paraffin are usually adequate if the patient (and the parents) are intelligent and co-operative; when the rectum is involved, graduated dilatation of the internal sphincter, as suggested by Hurst, may also be usefully employed. When such simple measures are not effective the operation of sympathectomy may be considered, with the purpose of depriving the distal colon of its inhibitory nerves. Of the many technical procedures suggested, by far the most eclectic is that devised by Telford and Stopford (1934), and I consider that it should be employed exclusively. It consists in the resection of the mesially directed branches of the lumbar ganglia from the second to the fourth inclusive, and avoids the paralysis of the vasoconstrictor nerves to the legs which follows the (equally efficacious) emoval of the lumbar cords, and the sterility which follows esection of the presacral nerve in male patients.

The results of sympathectomy are distinctly good; in he series collected by Ross (1935), twenty-one out of wenty-nine patients were benefited, and many other surgeons have reported successes. My own experience is imilar. The mechanism of the improvement is obscure. Any explanation must take into account the often lramatic immediate improvement in function, which disposes of valves, kinks, or elongations as the essential ause of the failure of evacuation of the colon. Indeed (and this emphasizes the point made by Hurst), there is often little change in the appearance of the colon after a barium enema, though its function is satisfactory. I do not think one can go further than to say that the distal colon, under the unbalanced dominance of its extrinsic motor nerves, regains its physiological adequacy. It is interesting to note that when the urinary tract is dilated it shares in the improvement following sympathetic neurectomy (Adamson and Aird, personal experience).

Conclusion

In conclusion I advance as a basis for this discussion the view that elongation and dilatation of the colon are not primary causes of dysfunction of the colon, but incidental findings; and that their surgical correction should never be attempted. The condition of megacolon is an exception, in which the dilatation and elongation are part of the disease. It may be possible to persuade a megacolon to function adequately by medical treatment; if this fails, sympathetic neurectomy is likely to be successful.

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PULP-SPACE INFECTION

BY

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In the past attention has been drawn to the treatment of septic fingers and hands, notably by the works of Kanavel, Fifield, and Eckhoff. In attempting to follow their teaching I have collected the details of 183 cases of sepsis in the hand, among which were fifty-one of pulp-space infection. An account of my practice and treatment, with results and analysis of these cases, is here given.

Anatomy

In order to appreciate the difficulties met with in the treatment of pulp-space infection it is necessary to review certain fundamental anatomical points. The skin on the volar aspect of the finger is bound down to the periosteum on the front of the terminal phalanx by the dense fibrous tissue strands. The pulp is composed of fat, and is divided by the dense connective tissue framework into a series of loculi. Sweat and sebaceous glands lie in the fat, their ducts passing outwards to the epidermis.

Infection in many cases can be traced to a breach in the continuity of the skin, and is confined to one or a number of loculi in direct relation to the nidus of infection. An infection of these loculi tends to be directed backwards towards the periosteum of the terminal phalanx. Generalized involvement of the pulp is checked until the later stages by the fibrous walls. Inflammatory swelling, held within the limits of firm-walled loculi, is associated with greatly increased tension in the pulp, causing pressure, with diminished blood supply to the pulp and bone.

Classification

There are five main types of pulp-space infection, the classification depending on the time at which they are

seen and the site of infection. These cases may be grouped as terminal, lateral, and central infections. The central cases comprise those which are early and just

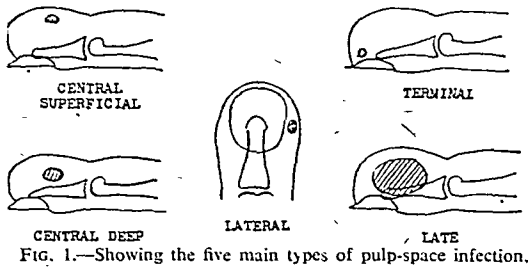


FIG. 1.—Showing the five main types of pulp-space infection.

beneath the skin and those which are late and the infection has passed deeply into the pulp. With neglect or inadequate treatment cases are seen in which the whole pulp has undergone disorganization; in many the terminal phalanx is dead, in part or the whole.

The series of fifty-one cases is grouped as follows: terminal, 4; lateral, 5; central—(*a*) superficial 5, (*b*) deep 27; late, 10 cases.

Aetiology

Of the fifty-one cases twenty-six knew of no cause, while of the remaining twenty-five, ten had sustained a small cut or roughening of the skin covering the pulp space. Ten knew definitely that they had had a piece of steel or a thorn in the finger, while four attributed the condition to receiving a blow on the finger; one case followed a burn.

Occupation.—Thirty-eight patients were working at a trade when they became infected. In this series four cases occurred in school children. The following table is compiled from the data available.

	Females	Males
Working in a trade	17	21
Not working, including housewives	12	1
	29	22

It is said that butchers, cooks, bakers, and fishmongers are prone to infection. In this series only five patients followed these occupations, whilst machine hands numbered twenty-two. Eleven others were of different trades, including carpenters, a glass polisher, a leather worker, and a typist. In a modern industrial town such workers constitute a majority.

The right hand was involved in twenty-six cases and the left in twenty-one. The thumb and index finger were most often affected. The digits involved were as follows: thumb, fifteen; index finger, fifteen; middle finger, six; ring finger, six; and little finger five times. There is no record in the remaining four cases.

Diagnosis

Early diagnosis of pulp-space infection must be established with certainty before making a radical incision necessary to obtain adequate drainage.

Symptoms.—Aching is the first indication to the patient that all is not well with his finger. He may realize that a trivial cut or one that has healed is about to give rise to further trouble. In twenty-five cases with a known cause the onset of symptoms followed the injury in the following times:

No. of Days	1	2	3	4	6	8-11
No. of Cases	9	2	4	3	2	5

Aching is first noticed when pressure is applied to the end of the finger; later it arises spontaneously and is present the whole time. Very quickly the pain becomes throbbing in character and the patient is incapable of sleep. In this series throbbing and inability to sleep have been taken as cardinal symptoms, and, with the presence of these, in only two cases was pus not found.

Physical Signs.—The pulp of the finger becomes swollen; swelling and induration are appreciable in comparison with the pulp of the corresponding finger of the other hand. In early cases a hyperaemic blush is found round the edge and base of the nail on the dorsum of the involved finger. Later the palmar aspect of the digit may become red and hot, but this is not an invariable finding. Tenderness is an indication of the part of the pulp space involved and the site of early pus formation. It is located by pressing on the pulp with a small probe. Induration is the cardinal sign of inflammation in the pulp, with the disappearance of normal fluctuation. Later with softening, and disorganization of the pulp architecture, fluctuation reappears. The case must be treated before the onset of fluctuation, for at this stage the phalanx is dead.

Treatment

Lancing.—The type of incision described as "lancing" is a vertical incision made in the length of the infected pulp space along its volar aspect. The length of the incision depends upon the courage of the patient and upon the determination of his doctor. Only those loculi in the line of the incision are opened, while those on either side remain inadequately drained. The patient feels some relief, but the finger continues to discharge. Early cases or those in which the infection lies just beneath the skin may be adequately treated by this incision. In hospital practice few cases of this type are seen, and it is therefore difficult to estimate the depth of the infection and to recognize the cases suitable for this treatment. When this incision is deemed to be the correct one it is urged that if resolution does not take place within twenty-four hours a further radical incision should be made. In twelve cases which were lanced a second operation was performed immediately it was realized that the treatment was inadequate. In five of these necrosis of the terminal phalanx did not occur; in five others a sequestrum was demonstrated on radiological examination and sequestrectomy performed; and in the remaining two a further operation for the removal of dead bone was carried out.

The U-shaped Incision (Fig. 2).—A curved incision is made round the end of the finger in front of the nail, cutting back into the pulp space, but never further than within half an inch of the distal skin crease, in order to avoid opening up the flexor sheath and so converting the infection into a tenosynovitis. By this method adequate drainage is obtained, and if performed early no complications arise.

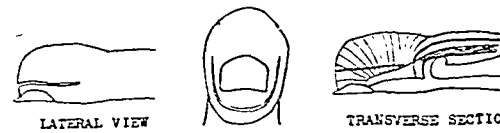


FIG. 2.—Showing the U-shaped incision for cases of terminal infection.

The incision is slow to heal, and does not leave an even scar. With experience of these disadvantages I ceased to employ this incision for the treatment of central infection. The U-shaped incision is the proper treatment for cases of terminal infection. The depth of the incision

is governed by the extent of the pathological changes found at operation.

Transfixion Operation (Fig. 3).—Two incisions are made, one on each side of the affected finger, 2 mm. in front of the edge of the nail, and the knife is passed across the pulp space just in front of the terminal phalanx. The incision extends to within a quarter of an inch of the end of the finger, and proximally to within half an inch of the distal volar crease. By this means all the fibrous tissue septa are divided posteriorly and all the loculi laid open. The palmar aspect is not turned back as a flap, and deformity and slow healing are avoided. There is no terminal scar over the sensitive pulp.

The full transfixion operation is recommended in early cases of central infection because it is impossible to assess the depth to which the pus has travelled backwards. If pus is not found, then with the knife in the transfixion incision cuts are made forwards into the pulp until pus is reached; care should be taken not to perforate the skin. In cases of lateral infection it is necessary to open only one side of the finger.

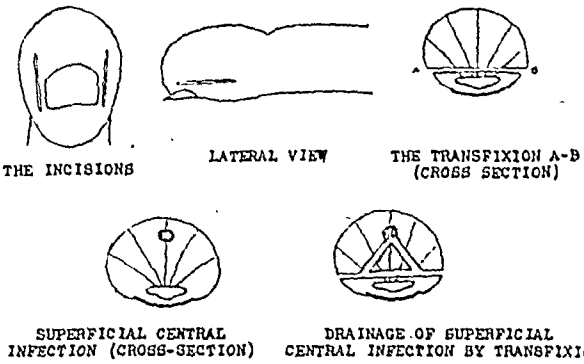


FIG. 3.—The transfixion operation.

Of the series of fifty-one cases this operation was carried out in thirty-three, and in only two did sequestrum formation occur.

Operative Technique

In hospital practice the infected finger is cleaned with spirit and a sterile towel is placed over the rest of the hand and forearm. Sterile gloves are worn and the patient anaesthetized with nitrous oxide. When a sufficient depth of anaesthesia is reached an assistant applies a tourniquet to the arm. The incisions recommended are then made; the knife is thrust through the pulp space from one lateral incision to the other, with the back of the knife facing proximally to avoid inadvertently opening the flexor sheath.

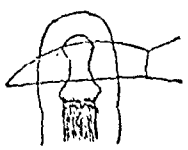


FIG. 4.

To transfix the pulp space in this way is not an easy matter owing to the toughness of the fibrous tissue. The tourniquet is essential to obtain a bloodless field. It is immediately realized when pus is reached, and if this is not seen the additional incisions described can be made. The pus is mopped away and sinus forceps are pushed into the incision so as to draw a piece of narrow glove-drain through. A magnesium sulphate dressing is applied with a covering of cotton-wool and a tight bandage is placed over all. The tourniquet is now released and the patient allowed to return to consciousness. After leaving the operating table he is rested for ten minutes, at the end of which time blood has soaked through the dressing, necessitating a further application of wool and bandage. The amount of haemorrhage from the incision into the vascular pulp is considerable, but by adopting this method the bleeding is controlled and the patient is able to return home.

Anaesthesia

It is important to use an anaesthetic which allows sufficient time to conduct the operation, without hurry, along the lines indicated; clear vision and a controlled patient are essential.

Gas-inhalation anaesthesia (nitrous oxide) was employed throughout this series: I believe that it gives full satisfaction. Ethyl chloride local anaesthesia was not used. The main objections to this are:

1. Frozen tissue is extremely hard, and it is impossible to make a satisfactory incision until the tissues commence to thaw.

2. Severe pain accompanies the great pressure necessary to cut through the hardened tissue and tends to check thorough treatment. When pus lies deeply it may not be reached.

3. It is impossible to carry out the transfixion operation with ethyl chloride local anaesthesia.

4. It is probable that the process may predispose to further tissue necrosis.

Adequate local anaesthesia can be obtained by digital nerve block at the base of the finger with 2 per cent. novocain infiltration. Local anaesthesia is contraindicated in cases in which the infection has spread beyond the pulp space.

After-treatment

The patient is seen next morning and the finger dressed. Care is taken to leave the rubber drain in position. A fresh magnesium sulphate paste dressing is applied and a short wooden finger-splint incorporated in the dressings. After forty-eight hours the rubber drain can be removed without discomfort and a further dressing given. In cases in which little pus was found the drain is left in for three days. In from four to six days elastoplast dressing is applied; this is kept on, according to the amount of discharge, until soiled. The patient attends at three-day intervals. When tissue destruction is marked separation of necrosed fibrous tissue may take at least three weeks. With elastoplast dressings the wound does not heal until separation is complete.

It is not my practice to use hot baths or fomentations. Hot fomentations had been given in many cases before the hospital treatment. Eckhoff condemns fomentations in the following terms: "The finger does not appear to be getting daily much worse, and the pain is disguised by counter-irritation in the form of hot bathing, hot fomentations, poultices, and other fatal local applications. These I would condemn at the outset. Bathing with or immersion in hot water only leads to generalized redness and tenderness of the finger, which makes diagnosis more difficult and is no lasting comfort to the patient. Fomentations and poultices tend to scald the part at first, and soon get cold and wet, and only serve to increase oedema when applied for more than twenty-four to forty-eight hours, and to spread infection, especially if there is already an open wound." It is my experience that in pre-operative treatment fomentations are of little value and lead to procrastination, and that infection subsides readily with adequate drainage.

The general toxaemia present cannot be ignored and must receive full treatment. The limb is splinted and carried in a sling, and in all cases the patient is advised to cease work and to rest in bed or in the garden. A large fluid intake, from ten to twelve pints daily, is of advantage until resolution is taking place.

Complications

Pulp-space infection must be treated seriously in the early stages before complications arise. Complications are difficult to treat and local deformity is unavoidable. When infection has spread beyond the pulp it may be impossible to check its course. The infection may pass to the tendon sheath, to the hand and palmar bursa, and in advanced cases to the space of Parona in the forearm. Many operations may be required to deal with these complications; amputations and contractures may cripple the patient or impair his working capacity. In unfavourable cases in the presence of virulent organisms, lowered resistance, or protracted course, life may be endangered by general toxaemia or systemic invasion by organisms. In this group of fifty-one cases complications remained local, and this paper is confined to the experience gleaned from these.

Sequestrum Formation

Sequestrum formation must be suspected in all cases in which the infection is of long standing or in which discharge persists. Ten cases of sequestrum formation were met with; of these seven had been lanced when seen, one came up with a sinus, one had discharged spontaneously, and one had been opened by a lateral incision. In the seven cases I believe that sequestrum formation resulted from inadequate drainage at the initial operation, further treatment having been postponed in spite of non-resolution of infection.

In hospital practice cases are referred in which the finger has failed to heal or discomfort and unfavourable progress continue after a preliminary operation. On examination a small wound may be found, and the finger is cyanosed, bulbous, and tender. In chronic cases the wound may be lined by granulation tissue and there is a constant discharge. In the chronic cases, or those in which satisfactory progress does not occur following the preliminary operation, it is essential to have the fullest possible understanding of the underlying pathological changes. A radiograph of the finger must be obtained, lateral and antero-posterior views. The findings must be interpreted with caution. The bone may be rarefied or absorbed in part, but such findings do not call for a surgical attack upon the phalanx, and at this stage adequate drainage may be provided and the bone left alone. Further radiographs must be taken from time to time and the bone watched. A fracture may occur across the base of the phalanx. In children the diaphysis may separate from the epiphysis. Bone erosion or sequestrum formation involves the shaft of the phalanx, and a small area of bone adjacent to the articular surface tends to survive. In this small fragment the flexor tendon is inserted. Sequestrum formation may take place in part or the whole of the phalanx. The dead bone retains its normal density and structure, and is sharply defined. These features form a striking contrast to the adjacent bones, which may have undergone absorption, causing changes in density and definition in the normal architecture. In later cases the terminal interphalangeal joint may be involved and diminution of the joint space or erosion of the adjacent bones may be seen.

Treatment.—The treatment of pulp-space infection complicated by sequestrum formation is governed by the degree of destruction of the involved phalanx. Bone destruction is revealed by the radiograph and by observations during the course of operation. When the radiograph shows a normal terminal phalanx except for a small sequestrum lying on the volar aspect, or the phalanx is eroded, the treatment consists in ensuring adequate drainage by the transfixion operation. The sequestrum is removed, or the phalanx scraped with a small spoon. Care must be taken to avoid the region of the base of the phalanx in which the flexor tendon is inserted. If the case is further advanced and the radiograph shows very extensive changes at the base of the diaphysis, with fracture, and the base of the phalanx is normal, treatment consists in adequate drainage by lateral transfixion; the whole of the terminal part of the phalanx is removed, the small proximal fragment, or in the child the epiphysis, is left to avoid infection of the interphalangeal joint and the flexor sheath. In very neglected cases in which there is involvement of the whole phalanx, including the terminal interphalangeal joint, the complete phalanx is removed through the transfixion incision. In cases in which the flexor sheath is not involved removal of the whole phalanx at this stage, carried out with care, does not add the risk of spread of the infection, because the flexor sheath may be shut off by adhesions.

Tenosynovitis

Tenosynovitis is a disaster of the first magnitude. It is bound to be followed by a prolonged convalescence, with a stiff and deformed finger, and in less favourable cases a crippled hand. The condition may arise from the natural spread of infection, but in practice this does not constitute the most important cause. In the majority of cases it follows in the wake of some surgical intervention. Spread of infection may be precipitated early in the case by extending an incision for drainage of the pulp too far proximally and opening the tendon sheath inadvertently. In later cases tenosynovitis is a complication arising from the treatment of sequestrum formation. It has been stressed in the treatment of cases associated with radiographic changes in the terminal phalanx that careful discrimination must be exercised before interfering with the bone at operation. In cases in which dead bone cannot be demonstrated it is better to provide adequate drainage and to review the case later. In the adult the base of the distal phalanx must be preserved in order to avoid opening the interphalangeal joint and flexor sheath. The base of the distal phalanx must only be removed in cases in which there is infection of the joint or tenosynovitis is present.



REMOVAL OF PHALANX, OPENING OF TENDON SHEATH
FIG. 5.

In cases seen following removal of the base of the phalanx a certain amount of drainage is provided through the tendon sheath being open at its extremity, and infection may remain localized to that part of the flexor sheath opposite the middle phalanx. When the flexor sheath is involved the patient is unwilling to move the affected finger, which becomes red, swollen, and slightly flexed. In two cases a small sinus discharging a thin serous fluid was seen at the distal skin crease. When the diagnosis of tenosynovitis is established lateral drainage must be provided immediately. A dead tendon must be excised

at a subsequent operation. In women and such men as desire it the finger may be conserved, but for the subject employed in manual labour better function may be obtained by amputation.

Summary

1. This paper is based on the experience gained in the study of 183 cases of infections of the hand, of which fifty-one cases were pulp-space infections.

2. Aching followed by throbbing and inability to sleep, associated with induration of the pulp, should be the established indications for immediate operation in pulp-space infection.

3. With adequate drainage inflammation in the pulp readily subsides. If resolution is delayed it is urged that the transfixion operation should be carried out.

4. Complications in pulp-space infection can be prevented by providing adequate drainage in the early stages.

5. In a chronic case it is essential to employ radiological examination before proceeding to treatment.

6. In the treatment of sequestrum formation and the prevention of tenosynovitis it is necessary to employ care in operation, and if possible to conserve the base of the distal phalanx.

ACKNOWLEDGEMENTS.—I wish to thank the honorary surgeons of the Queen's Hospital, Birmingham, for their courtesy in permitting me to carry out this work, and Mr. T. S. Donovan for his advice and criticism in the treatment of these cases. I am indebted to the honorary staff of the radiological department for help in the radiological work. In particular I wish to express my gratitude to Sister Arnold and the nursing staff for the kindness, care, and thought exercised in the treatment of these patients, without which it would have been impossible to conduct the post-operative care and follow-up. My thanks are also due to Mr. Coombs, radiographer to the Sheffield Royal Infirmary, for help with the radiographs. Finally, I wish to record my indebtedness to Dr. F. H. Kemp, clinical assistant in radiology at the Sheffield Royal Infirmary and Hospital, without whose help, criticism, and encouragement this paper would never have been published.

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The annual meeting of the British Association will be held at Nottingham from September 1 to 8 inclusive, under the presidency of Sir Edward Poulton. Thirteen Sections have been arranged—namely, mathematics and physical sciences, hemistry, geology, zoology, geography, economics, engineering, anthropology, physiology, psychology, botany, ducational science, and agriculture. Presidential addresses f medical interest are as follows: Dr. G. W. C. Kaye, oise and the nation; Dr. F. L. Pyman, chemotherapeutic esearch; Professor F. A. E. Crew, the sex ratio; Dr. J. H. Hutton, Assam origins in relation to Oceania; Dr. E. P. oulton, new views on metabolism and nutrition, and growth n man; Dr. Mary Collins, tests in common use for the iagnosis of colour defect; and Mr. H. G. Wells, the nformative content of education. Other sectional discussions will relate to the contribution of physiology to he health of the individual and the community, protein hemistry, recent advances in genetics and cytology, motor ehicles and road safety, and the national food supply. Professor H. Hartridge will deliver a public lecture on illusions of colour. Further information about the programme of meetings, excursions, and accommodation in or near Nottingham may be obtained from the secretary, British Association, Burlington House, London, W.1.

ENTERIC FEVER*

BY

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I must begin by emphasizing that I speak only from the standpoint of a practising medical officer of health. In consequence most of what I have to say must appear somewhat elementary—a reiteration of what is already well known. But administration is mainly concerned with the application of established principles in changing circumstances, and the principles governing the prevention of enteric are no longer in doubt. Although many points of detail still await elucidation, our practical problem is the efficient utilization of the knowledge we already possess.

Reduction of Incidence and Mortality

It is not necessary to adduce statistical evidence as to the great diminution in the incidence of enterica in recent years. When a death rate drops, more or less steadily, from 388 per million in 1870 to 4 per million in 1935 there can be no serious doubt that the disease is becoming less common. Nor are statistics necessary to establish what is within the personal knowledge of senior members of the profession. A generation or two ago enteric was familiar to everyone in practice. To-day it is almost a clinical curiosity: there are many practitioners of standing and experience who have never had occasion to diagnose or treat a case.

But if enteric in its endemic form is no longer a constant menace, it is still capable of manifesting itself on occasion in formidable epidemics. The greatest water-borne outbreak on record—that which occurred at Barcelona and caused 1,847 deaths—was no further back than 1914. The outbreaks at Pforzheim in 1919, at Hanover and Rostoff-on-Don in 1926, and at Lyons in 1929 were all epidemics of the first magnitude, affecting thousands of people, while so recently as 1927 Montreal experienced a milk-borne epidemic, wherein 5,002 persons were infected and a tenth of them died. We have fortunately escaped tragedies of such dimensions, but sufficient outbreaks have occurred in recent years to remind us that enteric is still to be reckoned with as a serious problem in public health.

There is not much room for doubt as to the conditions which have determined the reduction of its incidence. Of no other infective disease can we say with the same confidence that sanitary activities have completely justified themselves. There is no reason to suppose that, in the absence of those activities, enteric would not be as prevalent to-day as it was in the middle of the last century. There is no evidence to suggest that it is less virulent or less capable of spread in a susceptible community, or that herd immunity to infection is greater than in former times. An almost savage scepticism is essential to the sanitarian, who is constantly tempted to believe that improvements in health are the result of his efforts to bring them about; but in this connexion scepticism appears misplaced.

The diminution of mortality, so far as Great Britain is concerned, came in three stages. From the early seventies it fell fairly steadily till 1885. From that date till about 1900 there was little improvement. At the

* Read in opening a discussion in the Section of Hygiene and Public Health at the Annual Meeting of the British Medical Association, Belfast, 1937.

beginning of the century the fall recommenced, and has continued till the present day.

One is aware of the temptation to over-simplification in discussing such phenomena, but there does appear to be justification for believing that the change in the incidence of the disease reflects the change in our views as to its aetiology. The hypothesis that insanitary conditions were the *cause* of infectious disease has been replaced by the belief that they are responsible for its spread, and the acceptance of the latter view has greatly influenced our attitude towards prevention. The first efforts of sanitary reformers were directed to environmental improvements—provision of better water supplies and substitution of sewers for privies. The success of those efforts was explained in terms of the pythogenic theory, Pettenkofer's ground-water theory, and the belief that enteric might be spread by sewer air—views that were held by observers whose opinions were entitled to all respect, but which, despite their value in promoting reform, are now regarded as ill founded.

Advances in Pathology

Further advance had to wait on the more accurate knowledge of pathology which accumulated during the last years of the century. The bacterial origin of the disease was recognized by the profession, the introduction of Widal's test put diagnosis on a sound basis, and the conviction that the enteric patient was the real source of enteric infection gained ground. Finally, the discovery of the potentialities of the carrier provided a credible explanation of the apparent *de novo* origin of epidemics.

Meantime, sanitary administrative machinery was being improved. More attention was given to the protection of food against gross contamination, and, in particular, the practice of removing enteric patients to hospital was increasing. This, I suggest, was one of the most important causes of the disappearance of endemic enteric, especially in rural areas, where "sanitary" improvement was often non-existent. I know many parishes where the disease, common during the 'nineties, has been practically unknown during the present century. There are still no sewers, the water supplies are still obviously open to pollution, flies still pass unchecked from privy to larder, but the enteric patient is no longer allowed to remain in a country cottage throughout the course of his illness, a constant danger to his immediate associates, a potential menace to the whole district.

Recently the carrier problem has been exhaustively studied, much information on preventive inoculation has been collected, and important advances in bacteriological technique have made it possible in many cases to obtain direct evidence on what in former days could only be inferred. But nothing has happened to modify the orthodox belief that the prevention of epidemic enteric is essentially a matter of protecting drinking-water and food, especially milk, from specific infection.

Now it is obvious that if the incidence of an infectious disease falls, not from natural causes but as a result of human effort, that effort must be maintained if recrudescence is to be avoided, and we must consider from time to time whether accumulation of knowledge justifies, or altered conditions demand, any change of our methods.

An indication that defensive arrangements are not yet perfect is the fact that water-borne and milk-borne epidemics still occur from time to time. These differ in their genesis. Recent investigations have shown that the life of *B. typhosus* in sewage may be considerably longer than was generally supposed, but the actual occurrence of water-borne epidemics seems to depend on recent and gross contamination, which disappears fairly rapidly—from an epidemiological if not from a bacteriological point of view—unless pollution be continuous. In any case, whether a sewage-polluted stream, a clean source accidentally fouled by excreta, or a well or leaking main contaminated by a faulty sewer be in question, infection is generally massive and comprises a vast bacterial flora in addition to *B. typhosus*. This appears to be the explanation of the occurrence of the widespread outbreaks of gastritis and enteritis which frequently precede water-borne epidemics. At Hanover about 30,000 and at Rostoff-on-Don about 40,000 cases of those conditions occurred just before the appearance of enteric, and the same thing has been observed on a smaller scale in many other places.

Another phenomenon, apparently due to the same cause, is the occurrence of a certain proportion of cases of paratyphoid fever along with the true Eberthian infection. In the two outbreaks I have mentioned about 6 per cent. and 16 per cent. respectively of the total cases were paratyphoid infections. There is not at present sufficient information on the point to speak with certainty, but it seems probable that this coexistence of typhoid and paratyphoid is specially characteristic of water-borne outbreaks, and indicates original massive contamination.

Infection by shellfish may perhaps be considered as a special form of water-borne disease resulting from gross and continuous pollution. It is interesting to note that in many instances shellfish infection has been associated with preliminary enteritis resembling that occurring before ordinary water-borne epidemics. The enteric-infected oyster still constitutes a serious problem in some places. That its importance for us has diminished is due in no small degree to research on the subject in Belfast.

Infection of milk is another affair. Though dairy hygiene still falls short of perfection, *gross* excremental pollution from human sources is unlikely. The amount of pathogenic material, whether derived from infected water or from a carrier's hands, is presumably small, but it is introduced into what may be an excellent medium for the growth of *B. typhosus*. It is this circumstance which makes prevention of milk-borne epidemics especially difficult. It is not possible to protect the milk supply against the risk of infection by a carrier or an unrecognized case of enteric. A dairyman, however conscientious, cannot be expected to recognize conditions which an experienced physician may have difficulty in diagnosing.

Protection of Water and Milk Supplies

As water and milk become infected in different ways they must be protected by different methods. Safeguarding of water is largely a question of finance, and there should be little need for discussion so far as large towns are concerned. Sources protected against pollution, adequate storage, efficient filtration, and, when necessary, chemical treatment constitute a succession of lines of defence sufficient to secure immunity. If one of those desiderata be lacking special emphasis must be laid on the others. Large communities, moreover, can provide expert supervision and sufficient staff to maintain efficiency. The experience of London in particular shows that by taking proper precautions the risk of water-borne infection may be reduced to negligible proportions.

The position of small towns, villages, and rural communities is different. Their water supplies are still frequently open to serious criticism, but the confidence re-

sulting from years of immunity and the relatively heavy financial burden entailed by improvements discourage sanitary reform. Such small supplies are often under the charge of an officer who has many other duties and who may have no real knowledge of water problems. Serious defects may exist unrecognized until they are discovered by accident or in the course of an epidemic. In a water-borne outbreak affecting sixty-five people, with which I had to deal some years ago, it was found that infection had occurred at leaking joints in the pipes conveying spring water to the collecting-tank. These might probably have been detected and remedied by a trained water engineer, but not unnaturally escaped the observation of the village factotum.

In such small communities, which may have provided sewers and gravitation water supplies many years ago but have neglected to maintain them in a proper state of efficiency, the risk of pollution increases steadily. Most medical officers of rural areas have probably seen contemporary examples of sanitary defects closely resembling those responsible for the classical water-borne epidemics of fifty years ago. It is totally erroneous to suppose that the improvement in water supply during the last quarter of the nineteenth century affected the whole country. There are still many places where the absence of water-borne disease depends on the lack of a source of infection rather than on safeguards against its spread. This is not likely to be remedied until water supply is recognized as a regional rather than a local problem and assistance given to those places whose own resources are inadequate to its solution.

A special danger in rural areas is the "auxiliary" supply, used to supplement an insufficient source of drinking-water. It is practically certain that it will be drunk occasionally. I have known one instance in which cases of enteric occurred at a farm which drew its drinking-water from a well but had an auxiliary supply from a stream near by. The patients were known to have drunk from the latter source despite warnings. About a mile upstream was a cottage provided with a water-closet draining to a cesspool which discharged into the stream. The tenant of this cottage proved to be a woman who had been shown several years previously to be a typhoid carrier, and we were successful in cultivating *B. typhosus* from the cesspool contents.

An adequately protected water supply is of importance in the prevention of milk-borne epidemics. It is of course possible that an outbreak originally due to polluted water may be continued by milk through someone connected with the dairy trade having been a victim of the water-borne infection. This was well exemplified at Santa Ana (Ca.) in 1924, when an epidemic due to sewage-polluted water and affecting some 370 persons was followed by a milk-borne outbreak of 200 cases in a neighbouring town, which had a separate water supply but derived much of its milk from a dairy at Santa Ana. The risk of such occurrences is very grave, and should enteric be prevalent in a dairying country it is essential that everyone connected with the milk business be kept under close supervision and all milk pasteurized till the danger of infection is past.

Again, milk may be infected through polluted water being used to wash utensils. Theoretically this should never happen, but until all dairies are fully equipped in accordance with modern ideas this risk cannot be ignored. There are cases in which milk has been infected during the cooling process, either by a leaking cooler allowing water to gain access to the milk, or, in the absence of a sufficient water supply, by the milk-cans having been set to cool in a stream which proved to be sewage-polluted. This appears to have caused the St. Catherine (Ontario) epidemic of paratyphoid fever in 1931. In this case 475 cases were traced to milk from two farms where milk-cans were cooled in a small creek that was contaminated by drainage from a district in which paratyphoid fever had been prevalent in the previous year. Such incidents show the need for securing that all water supplies, whether for drinking or for use in the production of milk or other foods, shall be protected against the risk of contamination. Neglect of this may have far-reaching consequences. A single case of enteric fever in a rural area may mean a big milk-borne epidemic in a distant city. Dr. Russell, then medical officer of health for Glasgow, said many years ago: "The status of enteric fever in Glasgow mainly depends upon rural sanitary administration." The experience of many large cities, both in Europe and in America, has proved that the truth of the observation is of general application.

The Carrier as a Cause of Infection

The main cause of milk-borne outbreaks is of course infection by a carrier, missed case, or contact who handles milk. Unfortunately his existence is generally unsuspected until the outbreak occurs, and even then it may be difficult to confirm. Proof of the carrier state entails detection of the causative bacillus in urine or faeces, and the intermittency of bacillary excretion by carriers may prevent this proof being obtained. Moreover, as I have learned by experience, samples submitted by a suspected carrier may have been borrowed for the occasion! Even after the carrier has been recognized the period during which he can be certified and put under restrictions is too short, and recertification may present difficulties. It should be recognized that after a year the carrier condition is permanent, and recertification should not be required.

Serological examination of suspects may help in detecting the carrier. The ordinary Widal test, however, does not give a sufficiently certain indication. I am not competent to discuss this point, but it seems possible that research on antigenic structure may eventually provide a reliable means of identification. Such a test would be of great value in practical administration.

It is a question whether anything short of universal pasteurization can protect against the risk of milk-borne enteric. The objection that this might lead to neglect of cleanliness in dairying could be met by fixing a sufficiently stringent prepasteurization standard, though the practical enforcement of such a standard would not be easy. Again, pasteurization is not an absolute safeguard, as the experience of Montreal and other places has shown. It would still be necessary to ensure that nobody capable of spreading infection was allowed to handle the pasteurized milk. A recognized carrier should of course be absolutely precluded from taking any part in the milk trade; indeed, in any business entailing handling food. But the control of carriers is so large a question, and raises so many issues, that I can only mention it here.

Conclusion

There are many other aspects of the subject which I should like to discuss did space permit, but there are two in particular which I emphasize in conclusion.

First, enteric fever should whenever possible be treated in hospital. The risk of infection is too great and too prolonged to justify home isolation, except in special cases, and it is in the patient's interest that he should receive

the expert nursing which is more important in this than in almost any other infectious disease.

Secondly, every outbreak should be fully studied by an expert bacteriologist. It seems that sometimes no more is done than the minimum necessary for diagnosis. This is not enough. The bacteriological history of each patient should be recorded as fully as the clinical. Investigation of the channels of spread should be checked by repeated examinations of sewage, water, milk, etc., and this may now be attempted with a reasonable hope of success. If it were done regularly our knowledge of and control over enteric fever would be materially increased.

THE SEX GLANDS

THEIR ANATOMY, PHYSIOLOGY, AND BIOCHEMISTRY *

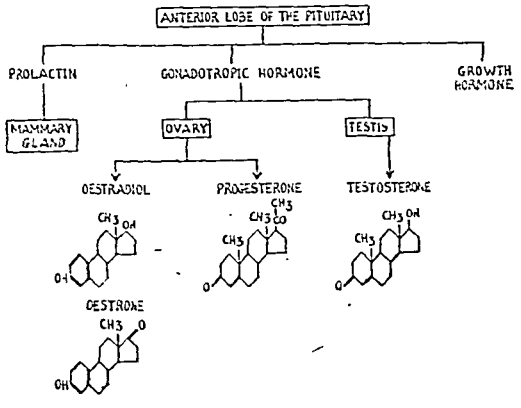
BY

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Since subsequent speakers will discuss in detail the administration of various sex hormone products, I shall perhaps be able to fulfil my function as the opener by giving a brief summary of the present position with regard to therapeutic substances. The object of those who organize discussions such as this is to provide a practical survey of the subject, and I therefore propose to deal only with those substances which are of practical value and which can be obtained in an active stabilized form in the ordinary commercial market.

In the physiology of the sex glands it is necessary to consider two separate stages: first, the activation of the secondary sex glands by hormones of the anterior lobe of the pituitary; and, secondly, the hormones secreted by the sex glands after activation. The relation between the anterior lobe of the pituitary, the ovaries and testes, and the mammary glands can be seen in the following diagram, which is self-explanatory.



Hormones of the Anterior Lobe of the Pituitary

It is a well-known fact that the injection of extracts from the anterior lobe of the pituitary into immature animals will produce the precocious appearance of puberty associated with ovulation and the formation of corpora lutea in the case of the female; and in the case of the male descent of the testis and spermatogenesis will occur. Conversely, in the hypophysectomized adult animal all sexual activity ceases; and this again can be restored by the injection of a suitable extract. Up to the present, however, there is no such extract of the anterior lobe available for clinical trial.

It was discovered that in certain species the urine of pregnancy contains a substance capable of stimulating the ovaries of the immature animal. The test for the presence of this gonadotropic substance forms the basis for the well-known Aschheim-Zondek reaction; the substance was given the name of prolan by the original German investigators. The problem then arose as to whether this was a single substance or whether, according to the German view, it was composed of two parts—prolan A stimulating the ripening of the follicle, and prolan B being responsible for the luteinization of the follicle. The material which is at present on the market is agreed by nearly all workers to be almost entirely the luteinizing fraction. Therefore when we speak in subsequent discussions of the urinary gonadotropic hormone it must be borne in mind that we are dealing almost entirely with the luteinizing fraction.

It has recently been shown that the serum of the pregnant mare during certain stages of gestation contains a very active ovary-stimulating factor. This has been separated, and is available for clinical trial under the name of "antex." Most workers have agreed that antex is mainly follicle-stimulating, as opposed to the luteinizing fraction.

With these two substances—namely, urinary prolan and antex—it would appear that the clinician is provided with all the factors necessary for the control of ovarian secretion; but the clinical applications of these will be discussed by subsequent speakers. With regard to the chemical constitution of these substances little is known, but they are available in a stable and standardized form.

Hormones of the Ovary

Reference to the accompanying diagram will show that there are three substances—namely, oestrone, oestradiol, and progesterone. There are other oestrogenic compounds in addition to these, but since they are not available for clinical trial they will not be discussed here. Both oestrone and oestradiol, when injected into ovariectomized animals, will produce all the changes associated with the sexual cycle in the rodent. They will also cause the onset of premature puberty, and they only differ one from the other in their relative potency; oestradiol is by far the more potent of the two substances. Both oestrone and oestradiol are available clinically in the form of benzoates. These esters are used because their absorption is slower, and therefore with a single injection it is possible to get an effect very nearly approaching that of the normal function.

If either of these substances be administered to the monkey it is found that the menstrual cycle cannot be reproduced. Experiments on the ovariectomized rabbit have shown that a second factor is necessary for the complete reproduction of the cycle, and that this may be obtained from the corpus luteum. This material, called progesterone, has been isolated from alcoholic extracts of the corpus luteum, and has been characterized chemically. It is produced commercially in two ways—from the corpora lutea and also by the complex degradation of stigmasterol. If oestrone or oestradiol be in-

* Read in opening a discussion in the Section of Anatomy, Physiology, and Biochemistry at the Annual Meeting of the British Medical Association, Belfast, 1937.

jected into an ovariectomized woman for a certain length of time, and this be followed by injections of progesterone, a complete menstrual cycle can be instituted. It can thus be stated that the clinician is supplied with the necessary agents for the production of the menstrual cycle.

One of the great difficulties in the past has been the question of dosage. When these substances were first isolated their effects were studied exclusively on rats and mice and other small animals. This led workers to think and speak in terms of rat units and mouse units. Consequently when raw material first became available for clinical trial patients were injected with relatively small numbers of units. No progress at all was made until it was realized that sex hormones all follow the rules of body-weight ratio. It was thus shown that the use of the same material with identical methods of injection and smearing gave a rat unit which was roughly ten times the mouse unit—that is, in proportion to the body weight. It follows, therefore, that hundreds of thousands of mouse units will have to be given to the human subject to obtain similar results. This question of high dosage is apparent rather than real, and it is to be hoped that in the near future these substances will be prescribed like other therapeutic chemical agents, in terms of weight of the pure chemical substance.

Hormones of the Testis

The isolation of these substances has been the result of intensive studies of the effect of extracts of the testis on the comb growth in the capon. The fundamental observation was a demonstration that an alcoholic extract of bull's testis was capable of restoring the capon's comb to that of a normal cock. The most potent substance of known chemical constitution at the present time is called testosterone; the formula can be seen in the diagram. This hormone is produced by the complex method of sterol degradation, and it is standardized by its comb-growth-promoting properties.

Apart from promoting growth of the capon's comb, this hormone is able to restore the atrophied seminal vesicles of the castrated animal to their former size. The clinical applications of this substance have not yet been fully explored, since it is only comparatively recently that large amounts of material have been available for investigation. Its use has been suggested for the treatment of enlargement of the prostate and for replacement therapy in all conditions where the secondary male sexual characteristics have diminished. Its use in the treatment of enlarged prostate is based on the observation that prostatic enlargement caused by oestrone in animals may be successfully treated by the administration of testosterone.

Form of Administration

When the pure crystalline hormones were first isolated one of the difficulties at once appreciated was the question of absorption from subcutaneous injection. Earlier experiments had shown the fundamental difference of behaviour between the injection of hormones dissolved in oil and those administered in the form of an alcohol-aqueous solution. In general it may be stated that the ideal medium for injection is one which will allow a slow and steady absorption, thus imitating as nearly as possible the natural conditions. In the case of the sex hormones this is accomplished by their administration in the form of oily solutions. In order to slow up the absorption still more various esters have been prepared. Thus oestrone and oestradiol are available in the form of oily solutions of their benzoates. The benzoate is slowly hydrolysed in the body, thus giving a steady supply of the oestrogenic agent to the subject.

In the case of testosterone a very interesting observation was made when it was shown that the presence of certain fatty substances very much enhanced the activity. Out of this has developed the ester testosterone propionate, in which form the hormone is available to-day. This ester is many times more potent than the free testosterone, and the whole question of potency of this group of substances is very largely bound up with the type of ester which is administered.

Evaluation of Results of Therapy

This presents little difficulty in the treatment of amenorrhoea, since success or failure is apparent. On the other hand, in the treatment of menopausal disturbances it is difficult to exclude the psychological element. Recently, however, the introduction of the vaginal-smear method has provided us with an entirely new technique for the evaluation of therapeutic measures in the menopause. It has been shown that the vaginal smear of post-menopausal women presents an entirely different cell picture from that of pre-menopausal women, and that suitable therapy will transform the post-menopausal smear into the pre-menopausal one. Subsequent speakers will describe their experience with this new method.

Conclusion

In conclusion, it can now be stated with certainty that the labours of the biologist and the organic chemist have placed in the hands of the clinician a series of very powerful therapeutic substances. No longer is it possible for the practitioner to doubt the activity of endocrine products. If he will but take the trouble it is possible for him to obtain highly potent, stable, and standardized preparations of hormones; and let us hope that the discussion which is to follow will give him some indication of the possible uses to which he can put these substances.

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H. G. Huber (*Kinderartzl. Prax.*, 8, 152) states that while encephalitis is not a rare event in certain infectious diseases, such as influenza, measles, whooping-cough, varicella, mumps, small-pox, scarlet fever, and vaccinia, only a few cases have been recorded of its occurrence in typhoid fever. In the cases described by Elias, Schächter, and Lemlakis typhoid encephalitis was manifested by bulbar, mesencephalic, spastic, cerebellar, or cortical symptoms. The bulbar type with tachycardia and polypnoea is usually fatal; paralysis of deglutition is rare. In the mesencephalic type the symptoms are hyperkinesia, pseudo-lethargy, oculomotor palsies, and in rare instances facial paralysis; while in the cortical type hemiplegia, epilepsy, and aphasia appear. Huber records the case of a girl, aged 11, who in the second week of typhoid fever developed stupor, facial paresis, spasms of the extremities, slight nuchal rigidity, Kernig's and Brudzinski's signs, and well-marked aphasia. The tuberculin reaction and *x*-ray examination of the chest were negative. Complete recovery took place after ten weeks' illness.

Clinical Memoranda

Undulant Fever: Death from Paralytic Ileus

A case of undulant fever which terminated fatally in a man aged 64 seemed interesting enough to warrant its being placed on record.

CASE REPORT

This patient's illness began on January 16, 1937, and he was first seen on account of an attack of faintness. He then had a blood pressure of 123/68 mm. Hg. and a pulse rate of 88, and he complained of abdominal colic and distension. A nervous breakdown in the previous year had made him very apprehensive about his health, and I (A. O.-E.) imagined that the irritable condition of heart and bowel was due to vagla activity. After a few days in bed his heart condition improved and his pulse rate was 72 and his blood pressure 136/76 mm. Hg. With one tablet of allonal (5 grains) at night he slept well, and the colic had abated, although the stools were unformed and frequent. His temperature had been normal throughout.

On January 25 he became decidedly worse, and a mixture of bismuth carb. 10 grains, salol 5 grains, and chlorodyne 10 minims seemed to have no effect. Dr. Parry saw him with me in consultation, and laudanum was substituted for chlorodyne, but the stools were still very frequent and were completely unformed. On February 3 Dr. Parry kindly took over the case as I had to go on sick leave. On the same day the patient was transferred to a nursing home in Hove. A blood test was taken, and the report of the pathologist was as follows:

Widal's reaction for typhoid (H and O), paratyphoid A (H), and paratyphoid B (H and O) is negative; no agglutination in any dilution. The reaction for *Br. abortus* is positive, showing complete agglutination up to a dilution of 1 in 320 and nearly complete agglutination in 1 in 640.

At the time of his removal he was at the end of a wave of fever, and for three days his temperature was practically normal; it then gradually rose to about 102° F., and this wave continued until his death four weeks later. The immediate cause was paralytic ileus. This began about two weeks before death with gradually increasing abdominal distension, which reached such a stage that large coils of distended intestine were visible. He still had infrequent liquid motions, and flatus passed freely when a rectal tube was inserted. For the condition of ileus the following remedies were tried: enemata of turpentine, enemata of asafoetida, turpentine stupes, hot fomentations, and an electric pad to the abdomen; injections of pituitrin and of acetylcholine, and doses by the mouth of oil of peppermint, oil of cloves, and oil of izal, all in keratin-coated capsules: but nothing had any appreciable effect, and he died of toxaemia about six weeks after the beginning of his illness. No trace of *Br. abortus* was found in any of the cows in the herd from which he obtained his milk supply.

I (L. A. P.) had the kind assistance of Dr. Donald Hall, who attended the case with me on several occasions. Lord Horder, who also saw the case, told us that paralytic ileus was at one time quite common in typhoid cases, and that puncture of the intestine had been tried as a remedy, naturally with no success. It obviously could have no more effect than the passage of a rectal tube. This condition is also described as occurring in other serious febrile conditions such as lobar pneumonia.

A. ORR-EWING, M.B., B.Ch
L. A. PARRY, M.D., F.R.C.S.

Reviews

THE ART OF PROGNOSIS

Prognosis. Volume 2. (Pp. 410. 10s. 6d. net.) London: The Lancet, Ltd. 1937.

Prognosis, admittedly, is a perplexing chapter in the art of medicine; here particularly must be applied the aphorism, judgement is difficult and even experience fallacious. And yet the art of foreseeing the event is a matter of moment to the repute of the medical practitioner and still more to the prospects, immediate and remote, of the patient. For the most part the successful practice of the art must be self-taught by the doctor himself; no absolute rules can be defined, and balanced statistics are of small value in the presence of the individual sufferer. Manifestly the junior practitioner may expect to learn something from his seniors if only the teaching is effectively presented, and it is a series of successful efforts in this direction that distinguishes the second volume of the *Lancet's* collected articles on prognosis. The subjects considered number some sixty chapters and range from such narrow issues as fractures of the os calcis and breech presentations to the larger questions associated with hypertension, disseminated sclerosis, bronchitis, emphysema, and the rest. Each author has established a title to be heard on the subject on which he writes, and there may be detected throughout the book evidences of a common direction or purpose—namely, the determination, on the basis of clinical studies, to put at the disposal of readers practical and helpful guidance. Many of the contributions are in this respect clinical teaching of the highest order, and even experienced practitioners will find not only interest but also help from their perusal. The volume deserves a cordial welcome and recognition.

CORONARY DISEASE

Diseases of the Coronary Arteries and Cardiac Pain. Edited by Robert M. Levy, M.D. (Pp. 445: 97 figures. 25s. net.) New York: The Macmillan Company; London: Macmillan and Co. Ltd. 1936.

A quarter of a century has passed since the clinical observations of Herrick gave to the medical profession a means of recognizing infarction of the heart. This stimulus evoked a widespread interest in acute ischaemia of the heart muscle, which reached its peak in this country more than a decade later. But the floodlight turned upon the coronary arteries resulted also in a concentrated interest upon other aspects of their pathology. In many European countries and in America innumerable researches were directed to the physiology and anatomy of the coronary vessels and further to the clinical features and treatment of all grades of coronary artery disease. And since the trigger for this discharge of energy was pressed by an American, it is fitting that it should fall to the lot of one of his countrymen to assess the present position of medical knowledge on these matters.

Dr. Robert L. Levy in his treatise has assembled, with the help of authoritative contributors, a survey of this problematic department of medicine. The names of Drs. A. E. Cohn, J. B. Herrick, and C. J. Wiggers, who have formed an advisory editorial committee, indicate the broad philosophic, clinical, and physiological basis upon which the work has been planned. Discussions of the mechanism of the coronary circulation, cardiac pain, and

the clinical features of coronary syndromes are followed by sections on medical and surgical treatment. Although trinitrin undoubtedly benefits many patients and may substantially increase the capacity of an anginal patient for work, there remain actually many whose effort tolerance is so greatly restricted by pain that useful activity becomes impossible.

It is perhaps time for more consideration to be accorded to operative methods of treatment. Dr. J. C. White in the present volume holds that paravertebral alcohol injection of the upper four thoracic sympathetic ganglia is a method that cannot be dangerous and which brings good or fair relief in more than 80 per cent. of cases. The special indications for injection treatment, sympathectomy, the operation of total thyroidectomy, and the methods of supplementing the coronary circulation from neighbouring regions, such as the omentopexy now being developed by O'Shaughnessy in this country, are also discussed.

This book unquestionably takes its place among the important contributions to cardiology at the present day.

DIET AND CANCER

Cancer and Diet. With Facts and Observations on Related Subjects. By Frederick L. Hoffmann, LL.D. (Pp. 767; 15 illustrations. 5 dollars or 22s. 6d.) Baltimore: The Williams and Wilkins Co.; London: Baillière, Tindall and Cox. 1937.

Any medical reader who has kept in touch with the long series of publications relating to cancer issued by Dr. Frederick L. Hoffmann would be ungenerous if he refrained from a tribute of respect to the author, whose latest work, a stout volume of 767 pages, is before us. Dr. Hoffmann set himself two tasks. The first was to collect and summarize the views of others on the relation between dietetic habits and malignant disease and to epitomize current opinion on the processes of metabolism with special reference to malignant disease. The second was to analyse information respecting the physical and physiological characteristics and the dietetic habits of 2,234 patients suffering from cancer and 1,149 controls, "chiefly visitors to hospitals or patients suffering from minor ailments not suggestive of cancerous affections."

Not the least engaging of Dr. Hoffmann's characteristics is candour. He does not claim to have made an exhaustive study of the literature, and he more than once remarks that some of the works he has examined are of too technical a character for it to be possible for him to abstract them. What he *has* abstracted he has summarized clearly; and if it can be said, and said truly, that much which he describes is of little serious value (indeed he remarks that himself) and much he omits is worthy of attention, a medical reader will reflect upon the difficulty of the task. At the lowest, this half of the book will acquaint an intelligent layman with some of the trends of opinion. The other half of the task (beginning at Part IV) is more fully within Dr. Hoffmann's scope. He has tabulated his data in a great variety of ways. It is perhaps a pity that it was not possible to analyse the data of controls as completely as those of patients, for instance, by occupation, because dietetic habits must depend largely upon economic status, but the pains taken are evident. The statistical conclusion reached is that a principal difference between the cancer patients and the controls is the quantitative and qualitative richness of the diets of the former.

"The caloric intake is shown to be excessive in cancer patients who are not in need, in adult life, of so much energy-yielding foods in view of diminished exertion and the almost universal use of mechanical equipment diminishing the amount of bodily exertion generally. The study emphasizes the conclusion that it is not so much a question of any particular type of food product but that all food products seem to be taken in excess, particularly those of high organic content, or energy-yielding foods, beyond the needs of body requirements."

Dr. Hoffmann concludes his work with these words:

"I consider my duty discharged in presenting the facts as I have found them, which lead to the conclusion that overnutrition is common in the case of cancer patients to a remarkable and exceptional degree, and that over-abundant food consumption unquestionably is the underlying cause of the root condition of cancer in modern life."

No doubt this conclusion will not meet with universal acceptance, but the author's patient accumulation of data should receive universal approval.

SOCIAL MOVEMENTS

Aspects of a Changing Social Structure. By Sir Percy Alden, M.A. Sir Halley Stewart Lecture, 1936. (Pp. 190. 4s. 6d. net.) London: G. Allen and Unwin. 1937.

In accordance with the purposes of the Trust under the auspices of which these lectures are delivered, the author in his preface states that his underlying purpose "may be said to be the growing interest of the State in social and industrial problems leading to a wide range of measures designed to give security to the citizen and to the basic industries upon which in the end both citizen and the State depend." This theme is pursued through eight chapters, the first four of which deal with the main social services (with the notable exception of education), and the next three with the organization of industry, with particular relation to coal and to agriculture. A short concluding chapter is in the nature of a summary.

The earlier chapters are those which may be expected to interest medical readers more particularly. They are concerned with the social provision made for the child, for the health of the community, for housing, and for security of the worker in times of unemployment and in old age. They set out relevant facts and figures comprehensively and accurately; but however convenient this may be the result can only be described as commonplace. There is nothing new in the information given, and but little that is very fresh or helpful in the comment. Most thoughtful medical practitioners, social workers, and students of social questions will not find anything with which they are not already familiar. The family doctor, indeed, though not ungrateful for a mild appreciation of his usefulness, will easily detect a not unimportant lack of understanding of the real nature and extent of his functions; nor will any class of official concerned with national health insurance be prepared to endorse the statement that "the approved societies merely pay out and they are in no way concerned as to whether the payment is justifiable." Most of the author's suggestions for improvement are crude, and are not sufficiently developed or expounded to be useful contributions to the discussion. For example, he says: "What is wanted is a periodical health examination from childhood upwards . . . carried out by groups of doctors, some of whom would be specialists." And again: "A properly organized system would make maternity and child welfare officers responsible for the health of children under 5 years of age; school medical officers should take charge from that age onwards until the children leave school, and that after that the panel doctors, or at any rate some of them, might be salaried officers of the local authority and of course be responsible to the Public Health Committee."

These are simple notions, but those with a little more knowledge and experience of the conditions involved will think them impracticable and highly undesirable.

While Sir Percy Alden's book may be enlightening to the uninformed reader in several directions, the mere absence of serious inaccuracy in the statement of facts cannot be regarded as a sufficient substitute for the lack of thoughtful discussion of principles and methods for which the occasion afforded abundant opportunity.

PROCREATION AND BIRTH CONTROL

Marriage and Periodic Abstinence. The Natural Method of Scientific Family Regulation. By J. G. H. Holt, M.D. (Pp. 174. 8s. 6d. net.) London: Longmans Green and Co. 1937.

Voluntary Parenthood. By Edward F. Griffith, M.R.C.S., L.R.C.P. Foreword by Sir Humphry Rolleston, Bt., G.C.V.O. (Pp. 141; illustrated. 5s. net.) London: W. Heinemann. 1937.

To the practitioner unacquainted with recent work concerning the ovulation process, Dr. Holt's small handbook offers most interesting reading. The matter is of great practical importance both to the obstetrician and to the general practitioner. Now that it is possible to place the expected date of ovulation—often even to recognize by symptoms the exact moment of its occurrence—the very best opportunity for conception can be advised to women suffering from sterility. Conversely, the unfertile dates in the menstrual cycle may be calculated and utilized for coitus by couples desirous of avoiding conception.

Dr. Holt's object is to explain the rationale for calculating the days of the menstrual cycle which will constitute the so-called "safe period" for unfertile coitus. Useful as this knowledge undoubtedly is, it is unfortunate that the author is so prejudiced against all other recognized practices of contraception. Possibly it is this attitude which induces him to overlook the impracticability of his advice for use by the average married couple.

Apart from the fact that men and women do not care to regulate their emotional life by dates and schedules, the occurrence of ovulation, besides being impossible to assess during such periods as lactation, prolonged amenorrhoea, or the climacteric, is subject to many variations. Among others the author mentions changes of climate or occupation (holiday time), emotions (such as joy, sorrow, trouble, or fright); over-exertion—even the "worry and fatigue of spring cleaning" has been known to upset the cycle. His advice for such occurrences seems hardly practical enough—"Pass at once into abstinence and seek medical advice."

Dr. Holt gives a good summary of the work done on ovulation by recent investigators, and supports it by excellent material collected from his own case-histories, as well as by reference to historical customs concerning the periodicity of human fecundity. The reader is left with little doubt that valuable light has been shed on the extremely interesting subject of procreation.

It would be impossible at the present day to produce a book on birth control which would be startling or brilliant. The spate of books published on this subject suggests that an audience must still exist, and for this Dr. Griffith's volume offers as good a presentation of the subject as any others we have met. The book is intended for nurses, midwives, and social workers, and could be read by any layman. The author shows a sympathetic understanding of the anxiety with which the working-class mother views the rapid increase of her family. He lays particular emphasis on the prevalence of coitus interruptus, with its train of discordant bodily and psychical symptoms. In his opinion this practice accounts for half the unhappiness in marriage. On such grounds alone it is necessary that better contraceptive knowledge be made generally available.

Interesting statistical data are given to show the prevalence of abortion—either achieved or attempted; the death rate of infants born in quick succession is double that of infants born with a spacing of at least two years. For these reasons also it is the duty of the midwife or accoucheur to see that the patient is instructed in contraceptive technique after childbirth. In addition to such considerations the book gives a few chapters on general biological facts, such as the physiology of conception, secondary sex characteristics, and endocrine functions. The appendix usefully supplies a list of the voluntary and municipal birth control clinics.

Notes on Books

Dr. H. HALDIN-DAVIS has now produced a third edition of his valuable book *Skin Diseases in General Practice* (H. Milford, Oxford University Press, 17s. 6d.). It will be remembered that in this work diseases of the skin are arranged according to their topographical distribution. At the beginning of each chapter appears a list of the eruptions found on that particular part of the body surface of which the chapter treats. Since many common diseases may affect any or every area the three introductory chapters are devoted to diseases which may, on the one hand, be most widely spread or, on the other, extremely limited in their manifestations—septic infections, eczema, and syphilis. Further, references are given from chapter to chapter. This regional plan is very helpful to the practitioner. The indications for treatment are clear and thorough, and there are many illustrations. In order to bring the book up to date Dr. Haldin-Davis has thoroughly revised it and rewritten many passages, with special emphasis on the "elastoplast" treatment of varicose ulcers, the advance in radium treatment for malignant disease of the skin, and the introduction of compounds of gold and other metals in the treatment of lupus erythematosus.

Under the new title of *Tropical Dispensary Handbook* a third edition is now issued of Dr. CLEMENT CHESTERMAN'S *African Dispensary Handbook*. The first was reviewed in these columns on May 10, 1930. The scope of this excellent book has been extended in order to make it useful to workers in all parts of the Tropics. For the information of those unfamiliar with the earlier editions it may be stated that Dr. Chesterman's work was originally compiled from notes of lectures to African medical assistants, and the author's object, which he admirably achieves, is to provide a vade-mecum for the partially trained natives who staff the outlying dispensaries among rural communities. The book is divided into four sections dealing respectively with medical diseases, surgical diseases, pharmacology, and laboratory work. It is published in London by the United Society for Christian Literature at 7s. 6d.

Volume X 1934–5 of the *Transactions of the Bose Research Institute*, Calcutta, describes investigations carried out in different branches of biophysics, in anthropology, and in advanced physics under the direction of Sir JAGADIS BOSE, D.Sc., F.R.S. It consists of twelve chapters, with a brief general introduction by the editor. The paper of most interest to medical readers is that by Mr. H. N. Banerjee on chemical and physiological investigations on the presence of vitamin C in certain substances in plants. The publishers are Longmans, Green and Co., and the price is 18s.

In response to requests for a short description of the principles and technique of graduated muscular contractions Sir MORTON SMART has published a booklet (Oxford University Press, 2s. 6d.). He hopes that the simple explanation here given will assist those who are interested in this means of treating muscles and joints. He insists that it is harmful to muscles—particularly to those already damaged—to cause repeated contractions and relaxations by methods designed "to control the corepiece automatically."

Another annual review is the French *L'Année Médicale Pratique* (Paris: René Lépine, 28 fr.), now in its sixteenth year under the editorship of Dr. CAMILLE LIAN. This ranges from "abcés de fixation" to "vitamine C," and appears to cover the French medical literature in a thoroughly competent manner.

Reprints of papers on research work from the wards and laboratories of the London Hospital during 1936 have been bound together in paper covers, and the volume is obtainable from Messrs. H. K. Lewis and Co. at 7s. 6d.

The London School of Hygiene and Tropical Medicine has published as a pamphlet of twenty-four pages the report of the tenth meeting of the Industrial Advisory Committee of the Ross Institute held on May 28, 1937.

In preparing a fourth edition of his excellent book, *Common Skin Diseases* (H. K. Lewis, 15s. net), Dr. A. C. ROXBURGH has endeavoured to bring it up to date without materially adding to its size. Four pictures have been replaced by better ones and twenty-six have been added.

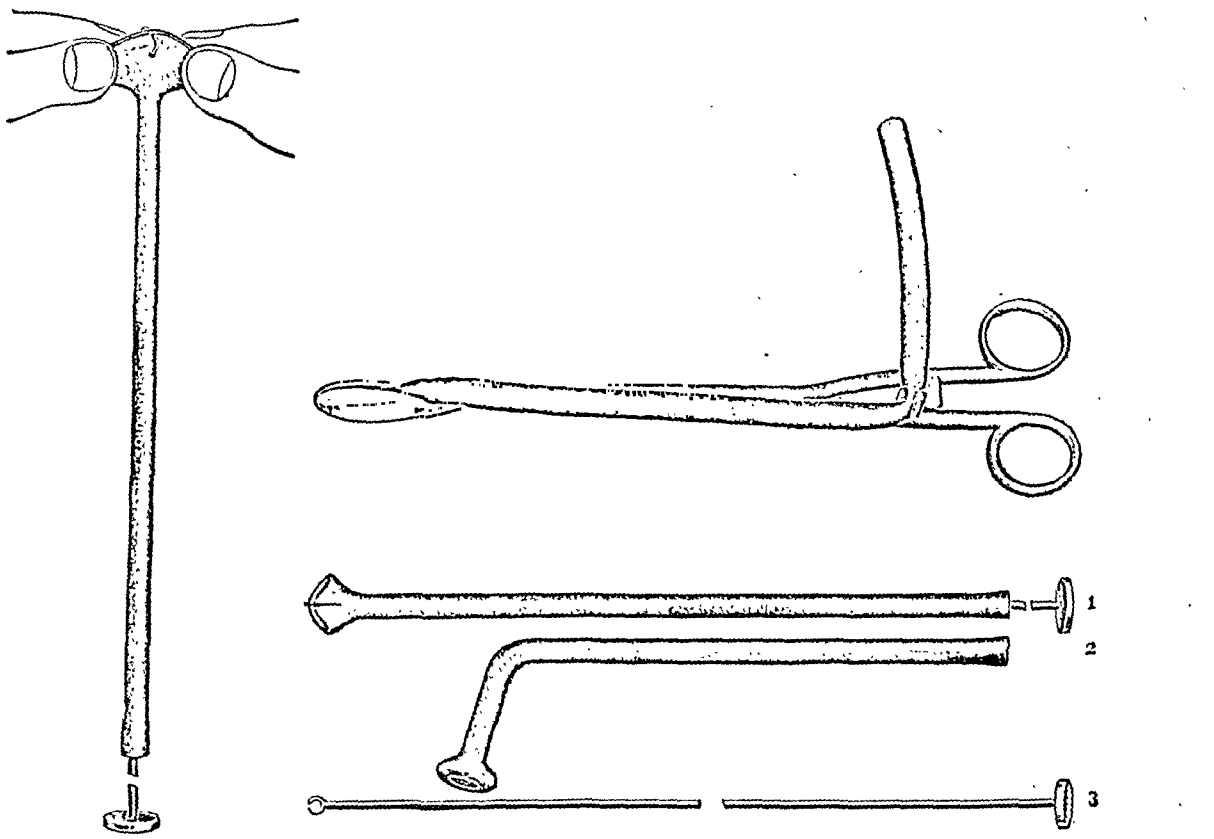
With the twenty-third edition of Sir WILLIAM HALE-WHITE'S *Materia Medica, Pharmacy, Pharmacology, and Therapeutics,* revised by Dr. A. H. DOUTHWAITE, this ever-popular book (published by J. and A. Churchill at 10s. 6d.) reaches its 115th thousand. It now embodies all the essential changes brought about by the publication of an *Addendum, 1936,* to the *British Pharmacopoeia, 1932.* Besides the new official substances the most important drugs now included are benzedrine, digoxin, ergometrine, mandelic acid, histidine, and protamine insulinate.

Preparations and Appliances

FORCEPS FOR INTRODUCING SUPRAPUBIC TUBE

Mr. H. P. WINSBURY-WHITE, F.R.C.S. (London, W.1), writes:

The instrument illustrated is useful for introducing a self-retaining tube of my own design into a suprapubic vesical fistula; it is not, however, suitable when the fistula is very old-standing, and consequently constricted by a good deal of fibrous tissue. After inserting the forceps into the bladder care should be taken to release the outer end of the tube before the blades are opened. It is interesting to note that in the American pattern of this tube as produced to-day the two small holes on the under surface of the expanded end, which were provided to engage the prongs of the original introducer, have developed into two large openings which are quite unsuitable for their original purpose. In fact, the instrument makers on the other side of the Atlantic appear to have no knowledge of the reason for these two apertures, and refer to them as a provision for extra drainage, a function which they could certainly not fulfil to any appreciable extent. Figures 1, 2, and 3 show the tube and original introducer with the tube ready for insertion.



The most convenient method of inserting the prongs into the two holes which should engage them is to stand the introducer upright, so that it rests on its circular flat end. This leaves the two hands free to manipulate the prongs into their respective places. The original modification of the self-retaining tube was first described in the *Lancet* (1922, **2**, 186). The instrument is made for me by Messrs. Allen and Hanburys of Wigmore Street, London, W.1.

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THE PRESIDENTIAL ADDRESS

It is always a pleasure to congratulate the President of the British Medical Association upon the address which he delivers as almost the first official act of his year of office. This can be done quite sincerely because there is never such an address without considerable wisdom and some felicity of expression. It is not invariably the case, however, that these presidential addresses are equally and entirely appropriate either in length or in matter to the particular occasion upon which they are delivered or to the special mixed audience which assembles to hear them. This year it is an added pleasure to recognize that, as in several recent years, the President was successful in holding the attention and interest of his hearers throughout, since both the nature of his subject and his manner of presenting it were attractive not only to the various classes of his medical colleagues but also to that important lay portion of the audience which has to be considered and appealed to on such an occasion. All who heard the address and those who now read it as printed in the opening pages of this issue of the *Journal* will like us to offer congratulations and wish Professor R. J. Johnstone a very successful presidential year.

The main theme of the address was medical education, undergraduate and postgraduate. As a university professor of one of the most important subjects in the medical curriculum, and as an influential member of the General Medical Council, which is charged with the chief responsibility in prescribing that curriculum and has recently given much thought to its revision, the President speaks from practical experience and with the requisite authority. The subject is of prime importance not only to medical practitioners of all kinds but to the general public. To lay administrators, both in central Government Departments and in local health authorities, it seems lately to have presented peculiar attractions, and there is evidence that their judgements and opinions with regard to it are not invariably wise or accurate. Attempts to impose additional requirements upon registered medical practitioners before they shall be allowed to follow their profession in certain directions or within certain fields, in spite of their rights under the Medical Acts, may be wholly mistaken even in respect of the achievement of objects in themselves reasonable and worthy. As the President pointedly said with regard to the health schemes which public authorities are constantly launching one after another: "The administrator has the last word, and while the specialist or whole-time officer is practically immune from criticism the incompetence or carelessness of a few can be alleged as a reason for excluding the whole class of general practitioners from participation in a service." He asks for the rights of all registered medical practitioners to be regarded and conserved, but members of the British Medical Association will be the first to agree that "rights involve responsibilities, and if we are to enjoy the one we must be prepared to the last man to discharge the other."

The methods by which the practitioner may be best equipped for discharging these duties and accepting these responsibilities, and the nature of the opportunities afforded him for so equipping himself, are therefore accepted as matters of supreme importance. Many things can be said, and have been said, on all aspects of this subject, but several points were developed by the President with much clarity and freshness. In a striking passage, contrasting the clinical experience acquired by a trained nurse and that of a medical practitioner, he demonstrated the unique importance of the background of the medical and biological sciences which the medical student laboriously cultivates. "It is the main business of a medical education to provide an adequate background and to teach how it should be used, and the more competently this has been done the more valuable will his clinical experience be to the practitioner." Further, the inculcation of a proper sense of professional responsibility is one of the major objects of medical education: "responsibility to his patients, to his own reputation, and, most important of all, to his own private conscience. The better trained the young graduate the more quickly and more competently does he take up the burden." Again, though the undergraduate must almost of necessity have been taught to think largely like other people, he must also have been encouraged to think for himself, since this, after graduation, should be his chief business. He then "becomes his own teacher and taskmaster." To these ends it is obvious that the skill of the teacher is not only essential but all-important. The President reminds us that "teaching and lecturing are arts that can be learned," and asks, "Would it not be possible that an institution such as the Postgraduate Medical School should give a course in lecturing, and that those who have designs on the teaching posts in our medical schools should be encouraged to take it out?"

The President suggests in conclusion that it is well for the young practitioner to have early in his professional career a period of relative difficulty and struggle, and allows himself just to wonder whether "panel practice is giving him an assured income too soon," and whether it is "taking away the intention to study and to improve the standard of his practice." It is as well that these questions should be asked, for they do hint at a possible danger with a certain type of mind and character; but in general a satisfactory answer can be given to them. No less important than the elements of struggle and emulation is the giving, and even widening, of opportunity, and in a noteworthy sentence the President seeks to assure administrators that "a panel of doctors is just as efficient and reliable as, and gives no more trouble than, a whole-time officer." The whole profession will thank Professor Johnstone for an address which is at once pointed, timely, and wise.

MORE LIGHT—BETTER SIGHT?

Recently, as the result of commercial activity, the slogan "more light—better sight" has become familiar to large numbers of people. In most slogans there is a basis of truth, and where a commercial enterprise concerns medicine it is as well to inquire how much truth is being presented to the public. There has been for some time a drive, originating outside this country, to make the public more "body conscious" in matters of health. How far this is productive of hypochondriacs is a question which would find many and weighty champions on opposing sides. We know that the so-called leisured classes are often the most difficult to cure, whereas as a rule those who have less time to ponder their symptoms respond more readily and completely to treatment. The former rather than the latter class tend to indulge in and support, while it is fashionable, any new health cult, and they will say this is due to their greater erudition and consideration for their bodies. It is doubtful whether they add to the tale of their days by such meticulous care of themselves.

The same is as true of the eyes as of the rest of the body. Thus certain types of over-sensitive or eye-conscious patients require their spectacles to be accurate to an eighth of a dioptre, and inquire as to the best humidity of the room in which reading is to take place; others have difficulty in choosing between lenses of half a dioptre difference and have never heard of humidity. In the Middle Ages it was possible to write and illuminate manuscripts which demanded careful and often very fine work with only rush-lights as an illuminant. Nearer our own time and before the introduction of electricity people could, and did, use their eyes just as much as we do to-day without much difficulty or complaint. Fine work done by the eyes in those days loses nothing in comparison with fine work executed to-day under the most advanced lighting conditions. It is probable, then, that the slogan is in part an outstanding example of good advertising in that it creates a want in the public mind. The difficulty is to determine how much of this want is real and how much is due to suggestion.

The problem of adequate illumination is complicated. The degree of lighting required varies, for example, with the type and quality of work in hand, the error of refraction of the eyes, and the state of health. Other factors, such as the quality and direction of the light, must also be taken into consideration. There is a tendency in the "more light" drive to advise so many foot-candles for reading, so many for sewing, so many for music, etc. Few people are always doing the same work under exactly the same conditions, so that it seems to be unnecessary, except in unusual conditions, to prescribe within narrow limits what illumination is best for any particular patient. Acuity of vision depends upon the contrast in the stimulation of the retinal receptive elements. This obtains more particularly at the edges of the pattern thrown upon the retina. In emmetropia a well-illuminated object with a sharp outline will throw a sharply outlined pattern on the retina. In such a case there is no diffusion of background colour to the pattern, or from the pattern on to the background, and the visual acuity is high. In ametropia and in poor illumination the edge of the retinal pattern is not sharp, and there is interdiffusion between the pattern and the background, resulting in poor vision. This poor vision may be remedied by attention to the focus of the eye and to the illumination. It has been found that the visual acuity, with the focus corrected if need be, rises with increase of illumination up to a certain point. Beyond that point increase of illumination results in a falling off of acuity. The point at which this falling off occurs is difficult of determination, the best illumination depending upon the factors enumerated above.

Experiments made in 1897, which have been accepted as accurate since that date, show that a change in light intensity from 10,000,000 to 1 results in changes of visual acuity of only 20 to 1, and that practically very little increase of acuity is obtained by an illumination of over sixteen foot-candles. The advocates of "more light" are stated to have proved that: (1) Over a wide range of intensity there is a small range at which acuity is at its maximum. Most will agree with this. (2) The maximum acuity occurs at a high intensity.

This does not accord with already accepted data. (3) The range of intensities which produce an observable change in the acuity is large. This does not agree with accepted facts. The chart used for demonstration purposes in the "more light" campaign is shaded from white above to dark grey below. On it are the usual paragraphs in progressively smaller print. The largest print is above on the white background and the smallest below on the dark grey. The smallest print has therefore the least contrast with its background, there being only a difference in light reflection between print and page of about four foot-candles with an illumination of forty foot-candles. The difficulty in the lower region of the card is increased by the glare from the white upper portion when intense illumination is used. The eye is, in such abnormal circumstances, being tested under conditions which rarely obtain in everyday life. The matter has been investigated by the Department for Industrial and Scientific Research, whose publications should be consulted; but before throwing the weight of medical opinion on the side of "more light" careful consideration should be given to the advisability of adding yet one more neurosis to those already complicating the lives of so many of the present generation.

"THE BOOK OF BELFAST"

Belfast has a reputation to sustain in the production of a guide-book for medical visitors. When the British Medical Association paid its first visit to the Ulster capital in 1884 the *Guide to Belfast* written by Dr. Robert Esler and published for the occasion was described editorially in these pages as "the most perfect and handsome" yet issued in connexion with any of the Annual Meetings. To make comparisons is odious, because since then many cities have done excellently in this, as in other evidences of hospitality, but *The Book of Belfast* for the meeting of 1937, edited by Dr. Robert Marshall, will be hard to beat. It is a volume of 160 pages, bound in Irish linen, and is described modestly as an attempt to answer some questions which an interested medical visitor might ask. The answers are given adequately, without being dull even in recounting the history of Belfast's many hospitals. On the cover appears the badge which Dr. R. W. M. Strain has devised for the occasion, and which is reproduced above. It only needs the explanation that the mythological creature, the seahorse gorged with a mural crown, is one of the supporters of the Belfast coat of arms. Dr. Strain reveals himself also as a clever cartographer in a couple of maps, one of Belfast and the other of the six counties, "designed rather for diversion than for direction." On the flyleaf are printed with fine impartiality two judgements upon Ulstermen. One of them is the remark of the late Lord Rosebery, that the race which has been grafted on to the Ulster stem is "without exception, the toughest, the most dominant, the most irresistible race that exists in the universe at this moment." If this sounds a trifle extravagant it is countered at once by John Milton's denunciation that they are "egregious liars and imposters," but the judicial mind was not a characteristic of Milton's genius. Dr. Marshall has been able to draw upon a great deal of local talent and erudition, from the Lord Mayor downwards, and the contributors include several well-known names in Belfast academic and industrial life. After a brief description, not without pride, of the topography of the city and port of Belfast, some forty pages are devoted to the Belfast Medical School and its founders, especially James McDonnell (1763-1845), of whom Malcolm, in his *History of the Royal Hospital*, writes, "No contemporary of any note in Britain was ignorant of his profound learning and distinguished name." Other names are Thomas Andrews, first holder of the chair of surgery in the Royal Belfast Academical Institution (of which the medical school become a department in 1835), and Henry McCormac, first professor of medicine, whose son, Sir William McCormac, was for five years president of the Royal College of Surgeons of England, and whose grandson, Henry McCormac, physician to the skin department of the Middlesex Hospital, is opening Thursday's discussion in the Section of Dermatology. Another chapter of the book describes the beginnings of Queen's College, later the Queen's University, in 1845. There are chapters recording the history of the Ulster Medical Society, founded in 1862, and the formation of the Northern Ireland Branch of the British Medical Association in 1878, followed by the two Annual Meetings in Belfast in 1884 and 1909. From this point the volume follows more closely the ordinary guide-book pattern, describing places of interest to be found in Belfast and its neighbourhood, the local industries, and the facilities for motoring and sport. Professor J. Kaye Charlesworth writes on the geology of Ulster, Mr. J. S. Loughridge on its archaeology, and the Rev. W. F. Marshall explains the accent and idiom which strikes a little strangely on the ear of the visitor from across the Irish Sea. The many illustrations add to the pleasure of the book, giving a better idea of old Belfast and some of its medical worthies. Among reproductions are the cartoons which decorated the programme of a special entertainment organized by Professor Johnson Symington for the delectation of Lord Lister when he visited Queen's to open the new physiology laboratory in 1897. In addition to the figure of a coroneted Lister slaying the dragon, there are lifelike sketches of the two former Belfast Presidents of the British Medical Association, Professor James Cuming and Sir William Whitla, the one as an Egyptian priest and the other as an itinerant musician. Dr. Marshall and all concerned deserve congratulations on a piece of literary work to serve as a memento of a meeting which bids fair at the moment of writing to be one of the most successful and pleasurable of recent years.

ORGANIZATION OF THE VETERINARY PROFESSION FOR CONTROL OF ANIMAL DISEASES

For many years the veterinary profession has been chafing under the rather ineffective and disorganized efforts that have been made by the country to control the diseases of animals generally, and cattle in particular. The National Veterinary Medical Association in 1935 appointed a committee to consider fully the lack of co-ordination of these efforts, their disastrous effects upon the work of the veterinary profession, and the best way of reorganizing their services so that a comprehensive and co-ordinated attack upon animal disease might be instituted. A pamphlet giving the results of these deliberations in full has been published by the Association (36, Gordon Square, W.C.1), and the subject-matter will be found to be particularly apposite to the terms of the Agriculture Bill at present before Parliament. The main recommendations of the profession have already been adopted by the Government, and a centralized veterinary service for the whole of Great Britain, making use of the wide experience of the veterinary practitioner in agricultural districts, is to be inaugurated. The recommendations allow for the development of this service and visualize the gradual establishment of several specialized branches within the comprehensive national service. These various branches are to be directed by a principal veterinary officer, who must be himself directly responsible to the Minister. The report emphasizes that unless the principal veterinary officer has direct access to the Minister, then the status of the professional service will be lowered and there will be grave danger of the scheme making far less headway than is desirable. Up to the present, however, the Government has not seen its way to agree to this increased status which the veterinary profession regards as essential.

EXPERIMENTS ON ANIMALS IN 1936

As was the case last year, the recently issued Home Office return relating to experiments on living animals records an increase in the number of experiments performed. The total figure for 1936 was 822,167, including 36,540 experiments carried out with anaesthetics, and 785,627 experiments comprising inoculations, hypodermic injections, and other proceedings performed without anaesthetics. The aggregate exceeds that of 1935 by 85,451. The return states that in no case had a certificate dispensing entirely with the use of anaesthetics been allowed for any operation more severe than subcutaneous venesection. Except in certain experiments dealing with the efficiency of antiseptics the regulations demand the use of full antiseptic precautions in order that wounds may heal as painlessly as possible. During the year forty-two licensees performed 33,507 experiments in the course of cancer investigation. 6,130 of these were operations requiring anaesthetics; the remainder were almost entirely inoculations into mice or exposure of animals to radiations. Three hundred and twelve licensees performed over 164,000 experiments for Government Departments and other public bodies, including, among many others, the League of Nations, the Commonwealth Government of Australia, and the Crown Agents for the Colonies. In addition more than 323,000 experiments were carried out in the course of the preparation and testing of antitoxic sera and vaccines and for the testing and standardizing of drugs. The inspectors, whose number was increased to three by the appointment of Dr. G. H. Culverwell in May, 1936, made 933 visits to registered places during the year, in most cases without previous notice, and witnessed a number of experiments. Only three cases of irregularity were reported; the offenders were admonished.

HORMONE TREATMENT OF UNDESCENDED TESTES

It is now seven years since Schapiro introduced hormone treatment for undescended testes, and during this period the consensus of opinion, as judged by the published reports, is that the results are encouraging. A. J. Cramer,[1] and W. O. Thompson, A. D. Bevan, and their collaborators,[2] have recently reviewed the published cases, and find that of the total number treated descent occurred in 72 per cent. The results obtained, however, in their own series of cases and the conclusions reached are widely different. Cramer gave twenty cases (ten bilateral and ten unilateral) 100 rat units of antuitrin S twice weekly for varying periods up to two months. Descent of both testes was brought about in seven and of one testis in one of the bilateral cases; of the unilateral cases descent was effected in six. He concluded that hormone treatment is a valuable method of therapy for undescended testes, and that when surgical measures are indicated the results may be enhanced by hormone therapy as an adjunct. Thompson and his collaborators treated eighteen boys between the ages of 1½ to 17 years (three bilateral and fifteen unilateral). The preparation used was follutein, and the dose was usually 200 rat units three times a week for an average of five months. Descent occurred in only four cases: of these three were unilateral, two being of migratory type, and in one of these the testis returned to the inguinal canal when treatment was stopped. In the bilateral case only one testis descended, although treatment was continued for eight months. Seven of the patients in whom descent failed to occur were later operated upon, and in each instance anatomical factors preventing descent were found at operation. They observed, however, that pre-operative administration of gonadotropic substance caused definite stimulation of genital growth, and this seemed to make surgical procedures less difficult. These conflicting results are not easy to reconcile. It is quite probable that many of the successful cases reported in the literature were of the migratory type, which descend spontaneously and which respond easily to hormone treatment. A. D. Bevan is of the opinion that the reports of the power of gonadotropic substance to produce rapid descent in a large percentage of cases are

[1] *Endocrinology*, 1937, 21, 230.
[2] Ibid., p. 220.

exaggerated, but that as he has seen no evidence of injury the method should be given a fair trial; if after six months' hormone therapy no change takes place operation should be performed. The author's impression is that the problem will be thoroughly understood only after more careful attention is given to all the embryological and anatomical factors. Diagnosis and choice of case are important, and yet it is often extremely difficult to be sure clinically whether descent is prevented by mechanical factors. Careful recording of operative findings in all cases in which descent fails to occur after administration of gonadotropic substance will be of considerable value.

VASCULAR CHANGES AFTER SYMPATHECTOMY

Earlier this year[1] we commented on recent experimental work undertaken to elucidate two of the more striking and obscure phenomena observed after sympathectomy in man—namely, the gradual regain of tone of the denervated vessels and the more favourable results of operations on the lower than of those on the upper limb. More recently Ashcroft[2] has published studies of the effects of interrupting at various levels the sympathetic pathways to the upper and lower limbs of the rhesus monkey. Hemisection of the spinal cord above the sympathetic outflow, section of the anterior roots, or division of the preganglionic or of the postganglionic sympathetic fibres is followed within the first few hours by intense vasodilatation in the relevant limb. At this stage the sympathectomized vessels react normally to adrenaline and the temperature of the limb exposed to cold falls no more than is to be expected from increased cooling; the changes at this early stage are independent of the level at which the sympathetic impulses are interrupted. As time elapses the vasodilatation becomes less intense and the denervated vessels begin to react more strongly to constrictor agents. The degree of this enhanced reactivity appears to be more or less inversely proportional to the number of cell stations between the point of intervention and the vessels themselves. Thus, several days after cervico-dorsal ganglionectomy the sympathectomized hand cools considerably when exposed to cold, whereas at a similar stage after division of the sympathetic nerves proximal to the third thoracic ganglion the sympathectomized hand remains warm when the air surrounding it is cooled. Again, the vessels of a hand deprived of its postganglionic fibres constrict to a dose of adrenaline only one-tenth of that required to produce an appreciable vasoconstriction in a normal hand; after preganglionic section the increase in sensitivity to adrenaline is but three times the normal. Increased sensitivity to certain agents after denervation is of fairly general occurrence—for example, of the pupil and the nictitating membrane of the cat to adrenaline. Increased sensitivity to choline esters has been described in voluntary muscle after division of the motor nerve, and has been demonstrated by Ashford in the sympathetic ganglia after preganglionic section. The change presumably occurs in the peripheral structures themselves, but its exact nature remains undecided. The importance of Ashcroft's work is that it demonstrates in the monkey, as previous workers have demonstrated in man and in the rabbit, that regain of tone and gain of reactivity in sympathectomized vessels are greater after post- than after pre-ganglionic section. It therefore emphasizes once more the desirability of preganglionic rather than of postganglionic section as the operation of choice for producing persistent vasodilatation in man.

[1] *British Medical Journal*, 1937, 1, 1076.
[2] *Brit. J. Surg.*, 1937, 24, 787.

THE NEW D.P.H. RULES

The resolutions and rules made by the General Medical Council for diplomas and degrees in sanitary science, public health, or State medicine are revised and modified from time to time with a view to the Council being assured that those degrees or diplomas "have been granted under such conditions of education and examination as shall ensure the possession of a distinctively high proficiency, scientific and practical, in all branches of study which concern the public health." In view of the special statutory privileges accorded to the holders of such decrees or diplomas, and of the increasing national importance of the public health service to which these holders may secure admission, the maintenance of a really high standard is necessary and a periodic strengthening of the requirements of both educational course and examination tests is reasonable. The recent revision of the rules has been definitely in this direction, and, as the new rules are to come into operation on October 1, 1938, careful attention should be given to them by all senior medical students and qualified practitioners who contemplate taking the prescribed course and entering the public health service either temporarily or permanently. Several of the changes made are of particular importance. Candidates, as at present, must have possessed a qualification in medicine, surgery, and midwifery for not less than two years; but in future this need not be a registrable qualification, so that persons holding certain Colonial, Dominion, or foreign degrees will not be debarred from obtaining the D.P.H. The diploma, however, cannot be registered apart from some other qualification which has already been entered on the *Register*. The requirement that the candidate shall have attended instruction for a definite number of hours is to be less rigid, the prescribed hours being related to the length of the course and not to the attendance of the student; but such attendance must have been "satisfactory and regular." The subjects of instruction and for both parts of the examination, too, are so stated as to permit a somewhat increased freedom in their treatment and the elimination from them of certain chemical analyses and other matters which experience has proved to be unnecessary; but certain additions have been made in connexion with genetics, mental hygiene, and hospital and mental health services. The most important point for intending candidates to note, however, is that part-time study during the whole of the course is not, after the appointed date, to be recognized. During the twelve months over which the D.P.H. curriculum usually extends there must be a period of "not less than three consecutive calendar

months devoted to the whole-time study" of the subjects necessary for the first part of the examination. This provision may not be accepted without some demur, and it will affect a not inconsiderable number of students; but it should, on the whole, be regarded as a reasonable requirement, tending to make the general course of study for the diploma more thorough and its pursuance more serious than it has occasionally been in the case of some students or institutions in the past.

HEALTH PROBLEMS IN SHANGHAI

The annual report for 1936 of the Public Health Department of the Shanghai Municipal Council is admirably lucid and informative. It states that the incidence of typhoid fever is a source of anxiety to the Department. The continued prevalence of this disease, despite the gradual improvement in sanitation, is attributed to the consumption of fruit and raw vegetables without observing the precautions which are necessary in a land where human excrement is employed in cultivation. Malaria, which has been increasing steadily since 1927, also presents a difficult problem. It is thought that, following the opening of new roads, anophelines infected with the parasites of the malignant form are conveyed by motor traffic from outlying districts into the central areas, which previously had been almost free. As a result anti-malarial measures have been intensified and mechanized attacks with new and deadlier forms of larvicide have been organized. Efforts are also being made to destroy infected mosquitos in houses where malaria has been contracted or cases are being nursed, a procedure which has met with much success in South Africa. With regard to the incidence of malaria during the year, this increased by nearly 50 per cent.; 298 cases were diagnosed, as against 202 in 1935, while *P. falciparum* was found fourteen times, as against seven. Some cases of *P. falciparum* infection were apparently of local origin, though the majority were probably contracted during visits to surrounding areas where malignant tertian malaria is endemic. Only one type of anopheles, *A. hyrcanus* var. *sinensis*, is found in Shanghai and its immediate environs. Information is desirable as to what extent, if any, this insect acts as a vector of *P. falciparum*. In view of the relatively low incidence of malignant tertian compared with benign tertian in Shanghai this insect does not seem to be a potent factor in the spread of the former type of malaria.

JOURNAL OF THE IRISH FREE STATE MEDICAL UNION

It is just two years since negotiations between representatives of the Irish Medical Association and the Irish Committee of the British Medical Association resulted in a plan for the establishment of the Irish Free State Medical Union (I.M.A. and B.M.A.), an autonomous and independent body which would be truly representative of the medical profession in the Irish Free State. Some idea of the success of the Union in its avowed object of "promoting the medical and allied services and maintaining the honour and interests of the medical profession" has been given by the reports of council and other meetings that have appeared in our *Supplement* from time to time. Now to promote this object still further comes the first number, dated July, 1937, of the Union's monthly journal, one of the main duties of which, as stated in the opening editorial, will be to keep members informed of the work the Union is actually doing on their behalf. It will be remembered that the constitution of the Union provides that each member shall receive the *British Medical Journal* each week, and it is therefore emphasized, in the editorial already referred to, that the *British Medical Journal* remains for members the medium through which they will keep abreast of recent developments and progress in medical science and of the medico-political problems that confront the profession in other countries. The *Journal of the I.F.S. Medical Union*, on the other hand, will make public as fully as possible the proceedings of its council and of various committees, report the steps taken to put the claims of the profession before the Free State Government and local authorities, and, as occasion offers, publish articles discussing problems that concern the profession as a whole. It is also hoped to make it a medium for the free expression of opinion. The first issue contains, in addition to the editorial statement of the services our new contemporary hopes to render to members, much that is of importance to medical men in the Irish Free State—for example, some comment on local Garda authorities and the appointment of medical attendants, the retirement of dispensary medical officers, emergency dispensary leave, reports of the annual meeting and of the council meeting on May 13 last, and the terms of appointment to the dispensary service in Northern Ireland. It also contains an account of the National Eye Service as it operates in England, and an appeal for the co-operation of members in the establishment of a similar service in the Irish Free State.

THE HALF-YEARLY INDEXES

The usual half-yearly indexes to the *Journal* and to the *Supplement* and *Epitome* have been printed; they will, however, not be issued with all copies of the *Journal*, but only to those readers who ask for them. Any member or subscriber who wishes to have one or all of the indexes can obtain what he wants, post free, by sending a postcard notifying his desire to the Finance Department, British Medical Association House, Tavistock Square, W.C. 1. Those wishing to receive the indexes regularly as published should intimate this.

The proprietors of the *Lancet* have appointed Dr. Egbert Morland as Editor in succession to the late Sir Squire Sprigge. Dr. T. F. Fox and Dr. M. H. Kettle have been appointed Assistant Editors.

The Australasian Medical Congress (British Medical Association) will hold its fifth session at Adelaide from August 23 to 28.

ANAESTHESIA IN GENERAL PRACTICE

This is one of a series of articles, contributed by invitation

RECENT ADVANCES IN ANAESTHESIA

BY

J. BLOMFIELD, O.B.E., M.D.

Anaesthetics as we know them to-day may be said to have started at the period which followed the war, so great an effect did the experience in casualty clearing stations and base hospitals for plastic operations have on the practice of anaesthetists. The contrast between pre-war and post-war anaesthetics is striking. Former practice was almost limited to the administration of ether or chloroform for long operations and of nitrous oxide or ethyl chloride for short ones, in addition to the employment of spinal and regional methods. Prolonged administrations of gas and oxygen were unknown in ordinary practice, and ethylene and cyclopropane had not yet appeared as anaesthetics. To-day, beside these gases, we have vinethene, the various barbiturates used intravenously, several means of basal narcosis, improved methods of spinal and epidural analgesia, and the methods of endotracheal administration.

The defects of both ether and chloroform had long been apparent. The latter was thoroughly well proved to be potentially too dangerous for a routine anaesthetic, and ether, though safe on the table, was guilty of unpleasant as well as risky after-effects. Chloroform is now mostly relegated to certain operations on the upper air passages and to midwifery. Ether is still largely used and is still a valuable anaesthetic, but its chief mode of employment in major surgery is now supplementary. It is given not as the sole or the chief agent but to strengthen when necessary the innocuous nitrous oxide, which has become the chief anaesthetic for long operations. The possibility of using nitrous oxide in this manner is solely due to improvement in the machinery of administration, and for this improvement we have to thank the Americans, and most of all the late E. I. McKesson, who had already in 1910 devised his first gas-and-oxygen machine. During the war the great advantage which nitrous oxide offered over toxic anaesthetics in many critical cases became so obvious that British medical men acting as anaesthetists at the front were led to devise and use machines capable of giving prolonged administration of the gas in a way which had not been possible with the Hewitt type of instrument, up to that time the only gas-and-oxygen machine in common use in Great Britain.

Basal Narcosis

In civil surgery it soon became apparent that there were many major operations, especially abdominal ones, for which the anaesthesia of nitrous oxide unaided was insufficient. War experience had in fact led to an overestimate of the utility of the gas. Nevertheless its advantages as an innocuous and non-poisonous agent remained undisputed, and the object now was to render it more widely efficient. This led to the premedication which is so notable a feature of present-day anaesthetics. It was found that by supplementing atropine, which was the general routine drug given before operation, if any was given at all, by a combination of this with morphine in full doses, or by using omnopon and scopolamine, then the subsequent administration of nitrous oxide and oxygen could be effective, although for abdominal relaxation in difficult subjects considerable quantities of additional ether might still be required. The advent of avertin for the production of what now became known as "basal narcosis" still further extended the possibilities of nitrous oxide. Paraldehyde was similarly administered per rectum. The idea of rendering the patient comfortably drowsy, or actually unconscious, before he left his bed found favour rapidly. The great advantage which such a method has from the psychological standpoint when timid or nervous patients are concerned needs no demonstration.

Later still the production of hypnotic drugs belonging to the barbituric-acid group extended the anaesthetist's choice of preliminary narcotics. Pernocton, much used on the Continent, never found great favour here, but nembutal, both by the mouth and intravenously, is widely employed. Sodium amytal is warmly recommended by some, particularly for obstetrics; evipan intravenously and pentothal are extensively employed to induce unconsciousness before the main anaesthetic is brought in, or, in short operations, as the sole anaesthetic. The rapid action and freedom from all discomfort during induction which are provided by the last two agents have brought them rapid popularity, and it is sometimes overlooked that they cannot be safely regarded as the equals of nitrous oxide from the point of view of innocuousness. The intramuscular injection of evipan to supplement the intravenous injection is likely to lead to local trouble, and at least one fatality due to this procedure has been recorded.

New Inhalational Anaesthetics

While the various drugs and methods to which we have just alluded extended the scope of nitrous oxide and other gases weaker than ether vapour, the latter still remained the routine agent for much major surgery in general practice, and some specialists, valuing the safety on the table and the general efficiency of ether, sought to find out the cause and the means of preventing those unpleasant after-effects which are the great drawback to its general use. It was shown that injection of insulin before and after operation had an effect on the occurrence of toxic symptoms due to ether. It was claimed, moreover, that ether could be made the ideal anaesthetic if due attention were paid to the right bodily state of the patient beforehand, to premedication, the employment of oxygen, routine removal of endotracheal mucus by suction, and the administration of intravenous saline. The patient, according to those who advocate ether in this way, is kept for a week before operation on a meat-free high carbohydrate diet, with abundant vitamins and extra lactose. German authorities claim that with supersaturated ether vapour they abolish most of the deleterious effects of inhalation of this drug, making it unirritating to inhale and not nauseating.

Vinethene, divinyl ether, which was first shown to have anaesthetic powers in 1930, has since proved of great clinical value. Its anaesthetic potency is no less than four times as great as that of ordinary ethylic ether and is greater than that of chloroform. It acts rapidly and has been most valuable in midwifery and as a supplement to nitrous oxide. It is so volatile that it cannot well be given except from some closed form of apparatus, but with this method care has to be taken that there is

sufficient dilution with oxygen or air. Overdose leads to respiratory paralysis, and very long administration may impair the liver.

Cyclopropane, the other recently introduced inhalational anaesthetic, is also a potent gas, the value of which is enhanced by the free dilution with oxygen in association with which it is effective. For this reason it is much employed for the operations of major thoracic surgery. In connexion with cyclopropane mention must be made of the modern technique of carbon-dioxide absorption. For one thing this technique alone renders possible the free use of so expensive an agent as cyclopropane. Its economic value is, however, not the greatest of the advantages of the technique. This lies in the complete control of respiration which the method affords. The administration of carbon dioxide itself in anaesthesia is a modern feature. The physiologists have taught us that it is the natural and most efficient stimulant for the respiratory centre. Consequently it is now commonly employed to hasten induction of anaesthesia by amplifying the breathing and also to facilitate recovery by increasing the rapidity of elimination of the anaesthetic.

While technique is under discussion reference must be made to that which has done more to alter modern methods as compared with their predecessors than any other one factor. This is the introduction of endotracheal anaesthesia. The bugbear of the anaesthetist of the past was most often spasm and congestion of the tongue and upper air passages. Introduction of a catheter through the larynx into the trachea entirely does away with this difficulty. The method, in the words of Magill, whose work in this connexion has been invaluable, "prolongs the trachea" to the mouth. Moreover, this method of introducing anaesthesia has rendered possible some thoracic operations which without it would be barely possible, and has greatly facilitated operations, such as those on the cerebellum, when a prone position of the patient is necessary. Also for operations on the upper abdomen on difficult subjects endotracheal methods are often the best possible solution of the problem. Mention, too, must be made of the long and repeated operations of plastic face surgery, the requirements of which first stimulated the development of endotracheal methods in this country.

Intravenous Methods

Intravenous injection of anaesthetics was tried in many instances about twenty-five years ago. The agents employed were ether, hedonal, and isopral. The first was abandoned because it was found that the large amounts of weak solution needed were excessive and there was danger of waterlogging the lungs. Nor did the other two prove satisfactory enough for them to come into general use, chiefly because of the long unconsciousness after operation. Recently, however, the intravenous method has been reintroduced with much greater success. Good results have been recorded with ethyl alcohol infused along with glucose solution, but the best agents for intravenous anaesthesia are pentothal, evipan, and nembutal. Eunarcon, another barbiturate, gives good anaesthesia for short periods of time. Although the other barbiturates mentioned are suitable for short operations as the sole anaesthetic they are also largely given as precursors to long anaesthesia with other agents; in some hands they are themselves employed as the main anaesthetic for long operations, and for this purpose various instruments have been designed which allow the hollow needle to remain *in situ* in the vein.

To what extent intravenous will supersede inhalational methods it is at present too early to state with confidence, nor have we probably yet arrived at the best possible drug for the purpose. Allusion may be made here to the practice of injecting morphine into the vein, an effective mode of prolonging the anaesthesia of evipan, or other barbiturate, when it is waning.

Spinal Analgesia

One of the chief drawbacks to endothecal methods of analgesia used to be the comparatively short time which could be relied on for effective insensibility. The introduction of percaine, a quinolin salt, a body entirely different chemically from those hitherto employed endothecally, removed this objection. The work of the late Howard Jones put administration of this drug on a scientific basis, and his excellent clinical results are now widely imitated. Some observers have pointed out the importance of warming the solution to body temperature before injecting it. There are still considerable differences of opinion as to the physiology of spinal analgesia and as to the reasonableness or the opposite of producing in this way anaesthesia of the upper portions of the body. It is true that anaesthesia even of the scalp has been successfully obtained, and that tonsils have often been removed with the help of analgesia procured by endothecal injection, but the consensus of opinion is still in favour of limiting spinal methods to regions below the level of the umbilicus as a general rule.

The chief danger of endothecal injection is ascribed to the fall in blood pressure which is associated with it. Controversy still rages over the manner in which this is brought about. Opinion on the whole seems to favour the view that the drop depends on the number of constrictor nerve fibres which are paralysed by the injection, and that the intercostal paralysis and respiratory depression play only a secondary part. Much experimental work has been carried out to determine this question and to ascertain the degree to which absorption of the injected drug takes place into the blood stream, and whether this is in clinical practice a point of real import. It is generally held that respiratory paralysis occurring during endothecal analgesia is never primary through direct action of the drug on the bulb, but is due to secondary stoppage of the breathing through insufficient blood supply owing to excessive fall of blood pressure. Much difference of opinion has been expressed, too, as to the causation of headache, which is sometimes severe after spinal puncture. The treatment most recommended is to keep the patient's head low for twenty-four hours after return to bed. Spinal methods have recently been introduced with striking success into thoracic surgery when lobectomies and other grave intrathoracic operations have to be performed. The injection of ephedrine, of adrenaline, and of icoral is recommended by different authorities as a certain corrective or preventive of fall in blood pressure.

Mention must be made here of a form of spinal analgesia which has not yet been much tried in this country but has had enthusiastic support on the Continent and in America. It is epidural anaesthesia, and depends on injection made, not into the cerebro-spinal fluid as in ordinary spinal analgesia, but into the small layer of loose tissue outside the dura. The method is thus allied to sacral analgesia, when the injection is into the sacral hiatus and again does not involve the cerebro-spinal fluid. This technique has been much used for perineal operations, for which it is excellent.

Splanchnic analgesia—placing a block across the path of impulses passing from the viscera via the coeliac ganglia and the great splanchnic nerves to the central nervous system—has proved of great service in severe operations on the upper abdomen. It is mostly employed in combination with light general anaesthesia, or with basal narcosis, or a field-block of the abdominal wall. This form of anaesthesia has certainly made possible severe and prolonged operations on subjects who could not possibly have survived them otherwise.

Therapeutic Use of Anaesthetics

Several anaesthetics have been of service in a manner entirely different from that for which they were designed. Avertin has been invaluable in the treatment of tetanus, and has been shown to be without deleterious or toxic effect though injected on a large number of occasions at short intervals of time. Evipan has been given with success in the control of delirium tremens, and the barbiturates generally have been found of help in the treatment of mental cases, especially when prolonged narcosis is desired. Finally, it has been maintained that the good results sometimes following the mere opening of the abdomen—for example, for tuberculous peritonitis—are to be attributed not to the operation but to the anaesthetic inhaled, and it has been suggested that repeated inhalations without operation would be a beneficial form of treatment.

No survey of advances in anaesthetics should conclude without allusion to the improvements which have taken place within the last few years in the education and the professional status of anaesthetists. This is well illustrated by the recent institution of a diploma in the subject by the Royal Colleges of Physicians and of Surgeons, this diploma being to a large extent due to the instigation of the Association of Anaesthetists of Great Britain and Ireland, the existence of which body is itself an evidence of the increasing importance which is being given to the practice of anaesthetics as a specialty. Lastly, the first Chair of Anaesthetics in Great Britain has recently been instituted in the University of Oxford through the munificence of Lord Nuffield.

R. D. Evans (*Amer. J. Roentgen.*, March, 1937, p. 368) has found that about 45 per cent. of the total amount of radium stored in the skeleton in cases of chronic radium poisoning gives rise to radon in the expired breath. The amount of radon, and consequently of the radium producing it, can be determined by electrical tests on the expired air. The rest of the radium in the body is determined by the gamma rays produced by its decay product, radium C. Very sensitive quantum-counters, capable of detecting radiation from less than a millionth of a gramme of radium, permit more rapid determination of the radium C gamma rays from a living person than do the usual electroscopes. The author then describes a general method for estimating the extent to which a gamma ray gives off substance in a closed and inaccessible container. The quantum-counters are directly calibrated for rapid measurements of radium C. The rate of the loss of radium by the patient is directly measured by radium analyses of the faeces and urine. In chronic cases 0.005 per cent. a day is eliminated, 91 per cent. of this in the faeces and 9 per cent. in the urine. The mobilization of radium within the body is studied by radon analysis of specimens of alveolar air. Simple gamma-ray examinations of patients will detect chronic radium poisoning five or ten years before any clinical symptoms appear.

RHEUMATIC HEART DISEASE IN THE COUNTY BOROUGH OF DEWSBURY

BY

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The following statistics obtained at a recent survey of school children known to have suffered from cardiac disease may prove of interest. It should be pointed out that the figures refer to the numbers of children whose cardiac debility was of such a degree as to interfere with their normal mode of living to some extent, and is in no way intended to be a reflex of the total incidence of rheumatic disease in Dewsbury. These cases are listed in the school clinic records as heart cases to be examined for the purpose of determining whether they were suitable for attendance at the public elementary school, and whether or not they had recovered sufficiently to lead a normal existence.

The first table shows the classification of these cases according to fitness.

TABLE I

	Males	Females	Total
Number of children fit for public elementary school and for some exercises, but recommended for further observation	4	–	4
Number fit for P.E.S. but excluded from games and exercises	10	6	16
Fit for P.E.S. half-days. Excluded games	–	1	1
Unfit for P.E.S.	1	4	5
At open-air school	1	2	3
			29

Table II shows the number of cases suffering from heart disease directly attributable to rheumatism in some form or other. The other heart cases attributable to such diseases as pneumonia, diphtheria, etc., are classified together as non-rheumatic.

TABLE II

	Males	Females	Total
Heart debility due to rheumatism	12	8	20
Heart debility not due to rheumatism	5	4	9
			29

It is noted, then, that the majority of cases of heart debility are directly the result of rheumatic disease, in the proportion of two to one. In twenty-six of the cases the tonsils were found to be present and enlarged and ragged, or cryptic or otherwise unhealthy. It was ascertained whether or not each case had had the tonsils removed prior, or subsequent, to the onset of heart disease, and the following table is instructive:

TABLE III

	No. of Cases
Tonsils present on examination	26
Tonsils removed	3
Tonsils removed prior to onset of disease	Nil

It will thus be seen that all of these cases had their tonsils intact before the onset of heart disease.

It was next decided to investigate the incidence of these heart cases according to the district in which the patient lived, and it was found that twenty-one lived in the town centre and eight in the outlying districts. Of the twenty-one cases in the town centre fourteen were of rheumatic origin. An analysis of these fourteen cases showed that thirteen of them belonged to the most congested part of the town centre.

The cases were then analysed with a view to discovering what schools contributed most cases, and it was found that seven of these thirteen cases came from the two schools serving the most poverty-stricken and congested area of the town. Another interesting point made out was that only four out of the total of twenty-nine cases lived in the end of the town where are housed almost all the mills, and which might be regarded as the most smoke-laden

part of the town. Table IV shows the incidence of these cases according to the age groups 5 to 9 years and 9 to 13.

TABLE IV. INCIDENCE ACCORDING TO AGE GROUPS

(1) Of all Heart Cases

Age Groups:	Males	Females	Total
5–9 years	4	5	9
9–13 „	11	9	20
			29

(2) Of Rheumatic Heart Cases

Age Groups:	Males	Females	Total
5–9 years	3	3	6
9–13 „	8	6	14
			20

It will be seen from Table IV that six patients suffered from heart trouble in the years immediately following admission to school, and of the fourteen remaining cases it was found that the majority of them gave a history dating back to the age group of 5 to 9 years, and seven of them could be traced back to age 5 or 6.

Commentary

These few results tend to substantiate the theory that rheumatic heart disease in children is a result of infection of the tonsils and that such infection occurs early in the child's school life.

In the majority of cases the rheumatic manifestations were not dramatic, and consisted mainly of indefinite pains of the limbs and joints rather than an obvious attack of rheumatic fever. Of the twenty cases of rheumatic heart disease only five gave a history of rheumatic fever or chorea.

It would appear that the most important examination from the child's point of view is not the one subsequent to school attendance, but one which should be made during the "toddler" stage. Thus an argument can be made out for the routine medical inspection of children attending nursery schools, as it is here that the full effect of preventive removal of tonsils can be gained. The findings certainly suggest this interesting conclusion, although the limited nature of the survey will not allow of a dogmatic statement.

It has been my experience that in too many instances tonsils have been removed merely because they were enlarged, and in too many instances the tonsils were left in spite of symptoms merely because they were not enlarged. The potentiality of the tonsil to lodge the streptococcus and the patient's symptoms, be they ever so indefinite, are of much more significance, and should in no case be neglected.

I have to thank Dr. J. F. Galloway for permission to publish these results.

At the last quarterly court of the directors of the Society for Relief of Widows and Orphans of Medical Men, with Mr. V. Warren Low, president, in the chair four new members were elected. A donation of £4 15s. had been received from the London Panel Committee, and £2,413 15s. was voted for payment of the half-yearly grants to widows and orphans in receipt of relief. The widow of a member recently deceased applied for relief, and the court voted her a yearly grant of £50 from the ordinary funds and one of £25 from the Brickwell Fund. There are now sixty-one widows in receipt of grants, the largest total since the foundation of the society. A subcommittee was appointed to consider the best method by which to celebrate the 150th anniversary of the foundation of the society next year. The directors desire to bring to the notice of young medical men the great advantages of membership, which is open to any registered medical man who at the time of his election is resident within a twenty-mile radius of Charing Cross. Relief is only granted to widows and orphans of deceased members. Full particulars and terms of subscription may be obtained from the secretary, 11, Chandos Street, Cavendish Square, W.1.

COMMERCE WITHOUT CONSCIENCE

DANGERS OF PATENT MEDICINE ADVERTISING

The first aim of the advertiser is to ensure that his message will be read by the greatest possible number of people of the class to which it is directed. If this object is to be achieved the advertisement must have some quality which will enable it to divert the reader's attention from numerous competing announcements; and of all the devices used for this purpose none is more effective than the topical illustration or headline. This fact is so well known to the advertising profession, that Boat Race Day, for example, would not seem complete without the appearance in the public press of numerous drawings of the contending crews, illustrating more or less appositely a variety of appeals quite unrelated to university athletics. The water that flows between Putney and Mortlake may not immediately suggest a certain modified water prepared in Edinburgh, but there is no doubt that the "Younger Every Day" slogan, if accompanied at the right moment by a picture of Father William at the oars, will attract much wider attention than it would otherwise receive.

Topicality and the Appeal to Fear

But an advertisement, if it is to serve any purpose useful to the advertiser, must not only be read; having been read it must stimulate the reader to action. Now the publicity expert, whether or not he can claim acquaintance with academic psychology, knows that the surest way of influencing the behaviour of men and women is by exciting one or more of those primitive emotions which we have inherited from our subhuman ancestors and which, despite our pride in our exalted rationality, remain the driving forces of our lives, the "springs of conduct." And of human emotions few are so powerful as the emotion of fear. Happy is the advertiser whose prospective clients, puppet-like, can be roused to action by the tugging of this simple string.

The recent bus strike in London produced a crop of patent medicine advertisements in which topicality and the appeal to fear were cunningly combined. The strike was one which closely affected the daily lives of millions of men and women, whose attention was therefore readily captured by any conspicuous reference to the event in the daily newspapers; and these same millions were aware of the strikers' claim that their conditions of work were conducive to nervous and digestive troubles. The manufacturers of nostrums for these disorders were not slow to see in this situation a good opportunity to increase the pulling power of their advertising. There was published, for example, an advertisement in which, below the bold heading "Bus Conductor's Eight Years' Indigestion, Nerves, and Sleeplessness Ended at Last," appeared a picture of the one-time victim (now smiling happily at the reader from the deck of his vehicle) together with an account in his own words of how, after he had "tried indigestion remedies without number," a particular brand of tablets finally cured his "terrible agony." Another announcement, advertising a different specific, began with the startling assertion, credited to a London bus driver, that "three out of every four bus drivers and conductors suffer from gastric trouble." A third, while making no direct reference to the busmen, included a timely dissertation on the danger to the digestive system of the rush of modern life ("Hurried meals, irregular hours, nervous stress and strain"), and went on to explain the prophylactic value of a certain powder

which "neutralizes the acid that is eating into the stomach wall," thus "preventing the development of dangerous ulcers, etc."

"Good Business"

All this is good psychology and good business. If proof be needed it is to be found in the *Statistical Review of Press Advertising*. Reference to this interesting publication reveals the astonishing fact that during 1936 eight firms which advertise remedies for nervous or digestive disorders spent a total sum of nearly a million pounds in the Press alone. During the first three months of the present year the sum spent on Press advertising by the same eight firms amounted to more than £252,000. Continued publicity on this scale can mean only that the goods offered find a very ready market.

The morality of it all is another question. Apart from the doubtful propriety of exploiting for commercial ends the contention of the London busmen that their conditions of work are specially conducive to particular diseases, a contention the justice of which is not here under consideration, grave objections to an advertising campaign of this description readily suggest themselves to the medical mind. Every practising doctor knows how harmful may be the habits of self-diagnosis and self-medication which are encouraged by advertisements of proprietary medicines in the popular press. These habits, in addition to causing in many cases a very unfortunate or even fatal delay in summoning skilled medical assistance, often result in direct physical injury of a serious kind. Recently, for example, attention has been drawn by a medical writer to the risk of alkali poisoning in the indiscriminate consumption of the so-called stomach powders which are widely taken without medical prescription (*British Medical Journal*, November 7, 1936).

Exploitation of Alarm

Perhaps, however, the chief dangers of advertising of the kind here considered are psychological rather than physical. Many of these advertisements are designed to alarm a reader with slight digestive symptoms by suggesting to him that the dreaded acid has already begun its deadly work of "eating into the stomach wall." Dyspepsia and anxiety commonly go together, and although the exact relationship between the two is not clear, it is by no means improbable that this deliberate stimulation of the patient's fear causes a serious aggravation of his physical disorder. Indeed, it is not beyond the bounds of possibility that there are many sufferers from gastric and other complaints whose troubles are primarily due to the fear engendered by such callous and unscrupulous publicity.

This is commerce without conscience, and those engaged in it are not to be moved by any reasonable appeal. It is to be hoped that the day is not far distant when our legislators, who at present seem strangely indifferent to the problem, will provide the protection which the public so urgently needs.

The British Standards Institution has issued a specification for portable chemical fire extinguishers dealing with the foam type and carbon-tetrachloride extinguishers. This specification forms a supplement to the acid-alkali type of portable chemical fire extinguishers; they have been prepared to meet the need felt by users and manufacturers for nationally agreed standards for their equipment. Copies of this British standard (No. 740/1937) may be obtained from the Publications Department, British Standards Institution, 28, Victoria Street, S.W.1, price 2s. 2d. post free.

Reports of Societies

MARRIAGE IN RELATION TO ALCOHOL

At the meeting of the Society for the Study of Inebriety on July 13, with Mr. ARTHUR EVANS in the chair, a paper was read on "Marriage in Relation to Alcohol and Drug Addiction" by Dr. LILIAS BLACKETT JEFFRIES of the New Sussex Hospital for Women and Children, Brighton.

Dr. Jeffries made the remark, which rather surprised her audience, that after somewhat extended research she had come to the conclusion from the authorities she had consulted that marriage and alcohol had nothing in common. The many tragedies in marriage when one of the parties was addicted to alcohol were, of course, well known, but she had endeavoured to study the question objectively, and after going carefully into the conclusions of C. R. Stockard and other investigators on alcohol in its biological aspects she felt that the findings more or less cancelled one another out. Stockard himself rather turned down his experiments in his later writings. She had thought to collect irrefutable evidence of the effect of alcohol on the germ plasm, but this had amounted to nothing.

Alcoholic Parentage

After a brief discussion on the symbolism of alcohol at the marriage feast and the use of alcohol as an aphrodisiac, Dr. Jeffries touched on the question of the effect of alcoholic parentage on the offspring. Karl Pearson's statistical study in 1910 was well known; it had never been repeated in anything like the same massive way. A recent study on the progeny of chronic alcoholics showed that psychosis of many varieties was found to be definitely more frequent in families of chronic alcoholics than in those of sober persons. This upheld the view that alcoholism was one of the manifestations of a defective inheritance. Some writers, however, made a distinction between the offspring of a man before he took to drink and afterwards. The effect on children of alcoholism in the parents was more marked when the defect was on the mother's side. But alcohol was by no means the only racial poison at work, and its effects could not be disentangled from those of syphilis and true inherited defect. Defective lactation was said to be common amongst alcoholic mothers, and also among the daughters of alcoholic fathers in proportion to the degree of their alcoholism. Any such direct effect upon the infant, however, faded into insignificance beside the miserable social results to the children of parents addicted to drink. The most important thing was that the children were deprived of that sense of security on which their outlook in life depended. Lesser degrees of alcoholism also had their effects on family life, which became permeated by uncertainty, fear of the incalculable, sometimes fear of violence. The habit of alcoholism might result from matrimonial troubles, and then in turn aggravate them.

As for legislation affecting marriage and alcoholism, chronic drunkenness was not a ground for divorce in England: it was a ground for judicial separation, which meant that family life was ruined. In Germany drunkards could be legally sterilized, and in two American States—Washington and Ohio—marriage was prohibited to alcoholics. Of course, such laws were easy to evade, but their existence on the statute book helped to create public opinion. As to the therapeutics of marriage in relation to alcohol, she was at a loss to find anything to say. The committee of the League of Nations in its investigations seemed to have touched upon every other aspect of alcoholism save this. In a last effort to say something good about alcohol in relation to matrimony, she could only recall the well-known picture of the old couple toasting one another in sherry on the occasion of their golden

wedding, and Robert Louis Stevenson's advice not to marry a teetotaller or a non-smoker.

Conduct the Criterion for Divorce

Sir ROBERT ARMSTRONG-JONES said that to-day the marriage law in too many instances had ceased to exist except in name, and it was felt that a relaxation of the bonds must be initiated by a change in the law in the interests of the children, the home, and society. Under what conditions might it be justifiable to dissolve a marriage, which was a religious ceremony as well as a legal contract? The present law enacted that the adultery of one of the parties was ground for divorce. Such an act not only defiled the home, but it adulterated the family, and this through conduct which was not only injurious and hurtful to family life, but was detrimental to society. Cruelty, again, was conduct that might mean not only danger to life and limb, but also mental torture. Desertion was a form of cruel conduct which in many instances among the poor would mean starvation for the wife and children, were it not for help from public assistance. All these things—adultery, cruelty, and desertion—implied conduct which was contrary to the teaching of Christ and to the Christian view of marriage as a lifelong union. Conduct, therefore, from whatever cause became the ultimate criterion for divorce. Drink and drug addiction both tended to alter conduct, and the effect of alcohol when taken to excess (and very little affected highly strung persons) was a complete deterioration of the moral life. Small doses of alcohol started a desire and later a morbid craving for stimulants, and the habit of drinking gradually became fixed until inebriety or chronic alcoholism was established. In such case the persons concerned lost all sense of propriety and shame. There should be a way to deal with such conduct for the sake of the children in the home. Already it was punishable to be found drunk in a public place, also to serve drinks to a drunken person, yet such a person could beat his wife and children and drink to excess in his own home with impunity. Another difficult person to deal with was the dipsomaniac, who was quite different from the chronic drunkard or the inebriate. During the craving, although not certified, he was a lunatic. He was a periodic drinker, subject to a sudden, intense, and irresistible impulse to drink, and if this craving were not indulged he might inflict serious injury on himself and others. The same applied to the craving for morphine or opium, for cocaine, and for some other sedatives such as the urea group. Owing to the altered conduct which resulted, it would be possible to deal with these cases under the more general title of cruelty, and so include alcohol and drug addiction under the section dealing with cruelty or insanity.

Sexual Difficulties and Alcohol

Dr. A. E. A. CARVER said that in an institution for inebriates, on investigating the origins of the drink habit, marriage and drink were often found to be very closely associated. Sexual difficulties and alcohol went together. Alcohol helped a person temporarily and fictitiously out of those difficulties; it also indirectly increased them, and alcoholic indulgence might even come to take the place of sexuality, so that a person drank instead of behaving in the normal sexual way. The effect upon the children when either parent was alcoholic was simply disastrous. The children did not know where they were. Very often there was marital cruelty which made the children take sides for or against a parent. The only good thing that followed from a drunken parentage was the frequency with which the children became rabid teetotallers.

Other speakers, lay and medical, gave their opinions briefly on the subject, and the Sister Superior of Spelthorne St. Mary mentioned that in the home for inebriates of which she was in charge the drug addicts were nearly always unmarried women, while the alcoholics were almost invariably married and attributed their alcoholism to married unhappiness.

Local News

SCOTLAND

Cost of Chronic Sickness

At the annual meeting at Largs of the Scottish Association of Approved Societies Miss Muriel Ritson, Controller in the Department of Health, said that insured persons continually sick over the year accounted for more than half of the total sickness among insured persons and for over 40 per cent. of the expenditure on sickness and disablement benefits. The influenza epidemic early in the year had cost £200,000. The lines of development which seemed likely to reduce the bill for sickness seemed to be that young people should be given in pre-insurance days every possible aid to the maintenance of health. The total number of periods of incapacity for the past year reached the exceptional figure of 480,000, which was 28 per cent. above the average of the six years 1930-6 and 27 per cent. above the figure for the previous year. The number of cases of sickness other than influenza had increased from 305,000 in 1930–1 to 357,000 in 1936–7, and there was evidence of an increasing amount of illness of the more persistent kind. These chronic cases had accounted for more than one and a half million weeks of sickness. The speaker mentioned a Danish scheme which included a system of notification of persons under 30 with disabilities which would cause considerable permanent loss of working capacity, and training was provided for these. At first it had been difficult to persuade employers to take on such persons, but this difficulty had been overcome. The Department of Health proposed to begin in September an inquiry into the cause and treatment of illnesses lasting over thirteen weeks, with the object of finding out the causes of long illnesses and the extent to which measures of rehabilitation were required in this country. Mr. T. W. Wallace, who presided at the meeting, expressed his belief that the increase of sickness was partly due to an increased willingness to claim benefit and partly to an inclination to regard as incapacitating a degree of illness which before 1913 would not have justified abstention from work. He hoped that the fitness campaign would bring an improvement which ordinary medicine and dentistry, combined with careful administration, seemed powerless to effect.

Veterinary Education

At the annual prize distribution of the Royal (Dick) Veterinary College, Edinburgh, Sir Thomas Hudson Beare, who presided, said that the number of students was increasing year by year, so that their present buildings were overcrowded. The Development Commissioners had made a grant of £20,000 provided another £20,000 was raised by public subscription. Sufficient had now been received to justify the board of management in having plans prepared for the first extension, and it was hoped these would be acceptable to the Treasury. Speaking of the proposed scheme for centralization of veterinary services, he said that the College was directly concerned in the proposal. London was a long distance away, and local considerations were apt to be forgotten. If this was merely an administrative question it did not matter greatly, but if it included an idea that research into animal diseases should be concentrated in London and cold-shouldered in Scotland he would be very strongly opposed to it. In a higher institution like the College, research and teaching must go on side by side. Principal Charnock Bradley said that whatever development took place the production of efficient practitioners was of primary importance. Professor W. T. Ritchie, who presented the prizes, said that the students might be justly

proud of this institution, which owed its inception 114 years ago to the genius and patriotism of a private individual. The influence of John Barclay, a distinguished anatomist early in the nineteenth century, had determined William Dick to become a veterinary surgeon and to found a veterinary hospital, and in 1823 he had established under the auspices of the Highland Society of Scotland the veterinary school which still bore his name. The veterinary art differed in some respects from that of the medical practitioner, but the science which inspired the two professions was the same. Both had to know the fundamental principles of dietetics, pathological processes, and the preservation of health. A vast amount of disease affected man as well as the lower animals, and all investigations and discoveries about these diseases were of mutual benefit to medical and veterinary science. It was possible that new discoveries regarding distemper might have a bearing on influenza. Within recent years there had been a rapid expansion of knowledge on every phase of biological science, and veterinary education was undergoing reform in conformity with modern standards, so that the curriculum had been extended to five years. The college buildings, which afforded adequate accommodation twenty years ago, now needed to be extended to meet the requirements of teaching and research, and it was a good omen that the Treasury was becoming increasingly sympathetic to the endowment of research in animal diseases.

Princess Margaret Rose Hospital

At the annual meeting of subscribers to the Princess Margaret Rose Hospital for Crippled Children, Edinburgh, on July 9 the Earl of Home, who presided, announced a gift of £8,000 from Lord Nuffield as a contribution towards the £10,000 required for an extension to the hospital. A sum of £700 from the Scottish Women's Rural Institutes was also mentioned: this had been collected as a gift to the Queen in commemoration of the coronation year, and had been passed on by Her Majesty for the benefit of the funds of the hospital. The annual report submitted by Lady Findlay indicated the rapid growth of this hospital, which was opened five years ago for thirty patients and which now contained 100 beds, a number that proved to be insufficient. The hospital was the pioneer of orthopaedic work for children in Scotland, and served the ten counties in the south-eastern area of the country. Last year 236 children had been treated, and there had now passed through the hospital in the five years of its existence 565 patients. In addition, clinics in Edinburgh and the county areas were regularly visited, and close touch was maintained with the local authorities, whose medical officers now realized the great value of the clinic services. The financial position of the hospital continued to improve, and it had been found possible within the last few months to pay off a temporary loan of £3,000 granted by the Scottish branch of the Red Cross Society. Expenses for the past year had amounted to £11,229, and after setting against these the maintenance charges received from local authorities, etc., and subscriptions amounting to £2,008, the deficiency to be carried forward was £863. As the hospital increased in size and more charges for maintenance were received the expenses per head would tend to diminish. Mr. W. A. Cochrane said it was now possible to claim that 75 per cent. of all crippled children could be benefited sufficiently to enable them to earn their living. Many of them were completely cured, and for a certain proportion who had a serious permanent physical handicap a system of vocational training effected sufficient rehabilitation. Local clinics connected with the hospital now numbered twenty, and were an essential link in the scheme for getting the patient early and providing preventive out-patient care. The hospital needed many more, and the importance of the preventive aspect of this work should be emphasized. The present national drive to improve physical education was really a national orthopaedic system. After the meeting a garden party was held in the grounds, and the audience of about 500 people inspected the new massage department, swimming pool, and wards of the hospital.

St. Andrews Ambulance Association

At the annual meeting in Glasgow on July 2 of the St. Andrews Ambulance Association it was intimated that the King and Queen had granted their patronage to the association. Sir John Stirling Maxwell, who presided, said that during the year the headquarters staff of this association had attended 1,611 accidents in which motor vehicles had been involved. There had been a great increase in the number of cases to receive attention all over the country; 47,422 calls had been made upon the association's wagons, of which 10,987 were cases of accident. An aeroplane ambulance service instituted in 1933 was doing useful work, and during the year forty-two patients had been brought from remote islands to Glasgow for urgent treatment. There could be no doubt that many lives had been saved by this rapid transport, and it had in a sense completely transformed the conditions of life in the outlying islands of Scotland. This association was one of the bodies to which the Government had entrusted the duty of instructing the public in air raid precautions, and during the year over 3,000 members had received such instruction. Colonel D. J. Mackintosh, speaking of the steady increase of the association's work, said that in 1912 its income had been £4,000 and in 1937 it had increased to £15,500, but further subscriptions and donations were required to support the work. Subscriptions from employees had in the past year increased by over £400.

Registrar-General for Scotland

The Secretary for Scotland has appointed Mr. James Gray Kyd to be Registrar-General for Scotland in the room of Mr. A. Froude, retired. Mr. Kyd entered the Civil Service in 1912 as actuary of the National Health Insurance Joint Committee in charge of the branch office in Dublin, and afterwards in Edinburgh. He has been a principal actuary in the Government Actuary's Department in London since 1926, and secretary to that department since 1932. He will take up his new appointment on September 1.

ENGLAND AND WALES

The King's Fund

At the annual meeting of the President and General Council of King Edward's Hospital Fund for London the Duke of Kent read an appreciative message from the King and mentioned the first appearance in the balance sheet of a full year's income from the gift of £20,000 by King George V. He expressed the hope that in the current year the deficit on last year's working would be wiped out and the Fund return to its usual proud position of paying its way out of current revenue. The financial summary for the year showed that the ordinary distribution had remained unchanged at £300,000, the total to which it was raised during the crisis of 1932, but there had been added for the first time a distribution of £2,000 in respect of the work done for hospital out-patients by district nursing associations. The number of hospitals receiving grants was 146 as compared with 145 in 1935, and the number of convalescent homes aided was fifty-six—an increase of two over the total for the previous year. During the last ten years a total sum of £3,256,088 has been allocated to hospitals and convalescent homes. In 1936 a further gift of £10,000 for its radium work was received by the Fund and used to increase the stock of

radium held to 17 grammes as well as to facilitate various schemes for enhancing the usefulness of this method of treatment. The League of Mercy contributed £10,000. Expenses during 1936 amounted to £16,405, less than a quarter of which was expenditure on the collection of money and on propaganda for the King's Fund and the hospitals. A fresh series of illustrated lectures to schools and other audiences, followed by visits to hospitals, was organized during the year under review; drawing-room meetings were held, and there was a display of modern hospital equipment at the Ideal Home Exhibition. Through the generosity of Lord Wakefield the Fund was enabled to undertake the preparation of a new and more ambitious film, which it is believed will have much propaganda value. The Management Committee of the Fund issued a revised memorandum on fire precautions in 1936 following those previously published in 1907 and 1926. The special needs of the Fund at the moment include additional financial assistance to meet the deficit, which has amounted to about £7,000 in each of the last two years, to increase the annual distribution to meet the greater needs of the hospitals consequent largely on the rise in prices and the advances in medical science, and to provide more substantial assistance to schemes for bringing and keeping hospital buildings and equipment up to the constantly rising standards. It is noted in the report of the Revenue Committee of the Fund that the ordinary income of the hospitals rose by about £152,000, but that this did not keep pace with the rise in expenditure, which was estimated at £184,000. The main financial problem now seems to be the increasing costs of maintenance, due largely to the present rise in prices, to better conditions for nurses (including shorter hours of work), and to the cost of new scientific methods of treatment. The most recent memorandum (issued last week) dealt with the reduction of waiting in out-patient departments between the time when the patients arrive and when they meet the medical officers.

The Merseyside Hospitals Council

The Merseyside Hospitals Council (Merseyside for this purpose meaning Liverpool, Birkenhead, Bootle, and Wallasey) has now completed ten years' work. It has brought together the management boards and honorary medical staffs of the voluntary hospitals in its area, and such bodies as organized labour, employers' associations, and the churches in hospital support. The income of its predecessors, the Liverpool Hospital Saturday and Sunday Funds, before the Council was established was some £25,000 a year. In 1936 the Council's income was £180,000. About 90 per cent. of this income is derived from the "penny in the pound" fund, which increased by some £14,000 during the last year. This increase is partly attributable to steps that have been taken by the Council to improve the machinery of extension, particularly through a regular system of surveying the 6,500 contributing establishments operating the fund to make sure that facilities are provided for the clerical, junior, casual, and seasonal employees and pensioned persons to contribute. The cost of collection, including propaganda, of the "penny in the pound" is 9 per cent. of the revenue. There are over 300,000 contributors, and in 5,000 of the contributing establishments, being 77 per cent. of the whole, the employers add one-third to the employees' contributions, the amount so added last year being over £29,000. The Guild of Undergraduates of the University devotes much time and energy each year to an annual collection for the hospitals, and as a result a further £6,000 was made avaiable for distribution by the Council. During the last eight years, thanks to the operation of the Council, the associated hospitals have been able to add £140,000 to their funds, and more than half a million has been spent on maintaining, extending, and improving hospital buildings and equipment. Even so the hospitals still have to use free legacies to meet current expenditure. The Council's main purpose is the maintenance of the voluntary hospitals, but it works in co-operation with the municipal hospitals, and has agreed to an increased grant to the corporation for services rendered to contributors in those institutions, in return for which the corporation refrains from assessing the contributors who enter a municipal hospital. Lord Cozens-Hardy, who has been chairman of the Council since its inception, has felt compelled to resign by reason of the many public and business claims upon his time, and Mr. W. Sutcliffe Rhodes, chairman of the David Lewis Northern Hospital, has been elected to succeed him.

Health of Manchester School Children

Dr. Henry Herd, school medical officer for Manchester, in his annual report for 1936 draws attention to the recent appointment of a school aurist and the establishment of two classes for partially sighted children. All children inspected during the year were assessed by the medical officers in regard to their state of nutrition. Dr. Herd, while indicating the difficulties and fallacies inherent in such assessment, produces figures which show that on the whole the nutritional condition of the older children was better than that of the younger, and that actually the total numbers classed as malnourished were small. In the special inquiry into these cases of malnutrition the average expenditure on food in the families concerned was investigated. The tabular results of this inquiry seem to substantiate Sir John Orr's statement that only when the amount expended on food reaches about 10s. a week per head is the feeding of a family likely to be satisfactory. Dr. Herd suggests that apart from supplementing inadequate food intake in these cases much could be done by educating the public in the values of the various foodstuffs, and by educating mothers in the art of cookery.

FRANCE

[FROM OUR CORRESPONDENT IN PARIS]

Venereal Disease Statistics

The French Ministry of Public Health has issued some disquieting statistics concerning syphilis in connexion with the Bill for the reform of the campaign against venereal disease. It is estimated that syphilis is responsible for 40 per cent. of the cases in hospitals for chronic diseases, for 10 per cent. of the general mortality, for 75 per cent. of the deaths due to congenital debility, for 50 per cent. of sudden deaths and deaths due to disease of the nervous and cardiovascular systems, and for 33 per cent. of the deaths due to disease of the renal and digestive systems. There is, however, matter for rejoicing as well as dismay. The number of anti-venereal services has increased from forty in 1916 to 1,821 in 1936, and the number of cases of primary syphilis in the army has fallen from twenty-one per 1,000 in 1917 to less than two per 1,000 for some years past. There has also been such a remarkable decline in the rate of stillbirths and deaths due to congenital debility and malformation during the first year of life since 1919 that an annual gain of over 20,000 lives can at present be claimed in connexion with this change.

Declining Numbers of Foreign Medical Students

Professor Hartmann, late president of the French Academy of Medicine and the very active President of l'Association pour le Dévelopment des Relations Médicales entre la France et les Pays Étrangers, has lately drawn attention to the very significant decline in the number of foreign medical students registered by the Paris Faculty of Medicine. The peak was reached in 1929, when 293 such students were registered. The corresponding figures for 1934, 1935, and 1936 were 94, 71, and 31 respectively. On the other hand, the number of

French medical students registering in Paris is rising. This ebbing of the foreign tide is, in Professor Hartmann's opinion, a sad phenomenon, not least because it may mark a decline in the influence of the Paris Faculty of Medicine in other countries than France. He is sceptical as to a reversal in the near future of this movement, whose causes, he considers, are numerous. The most important is probably the world crisis with its monetary restrictions. The agitation against foreign medical students, rather hectic only a short time ago, and conducted with all the impetuosity of nationalist youth, has also played its part; and the stranger within the gates has not been slow to scent the antagonism against him. Then there are the growing counter-attractions of magnificent new hospitals and laboratories in countries other than France, not least in the South American countries.

The French Birth Rate

The subject discussed by the Assises de Médecine last March was the French birth rate, and the conclusions to which this meeting came were of such interest and importance that a summary of them was presented to the Academy of Medicine on June 8 by Dr. H. Godlewski, the secretary of the Assise. Though nothing startlingly new emerged from this discussion, it proved instructive on account of the emphasis given to certain elements of the problem. It was generally agreed that the two most important factors responsible for the decline in the birth rate are birth control or voluntary restriction and induced or voluntary abortion, which in some parts of France has become such a scourge that it is held responsible for "the failure of a quarter of the births." In more general terms the decline in the birth rate was traced to the "penetration of modern animation" into the community —an apt if vague formula. Dr. Godlewski's report was followed by a discussion which ended in the appointment by the Academy of a commission for the study of the means whereby the moral standards as they affect the birth rate may be raised for the benefit of the country. This commission was appointed in spite of certain criticisms by those who doubted the ability of the Academy of Medicine to deal with the moral aspects of the problem. These latter may be and, indeed, probably are its most important aspects, and if 1,034,000 infants were born in France in 1868 and only 638,000 in 1935, this remarkable decline would seem largely to be due to the change in the mothers from timid modesty to bored and brazen indifference with regard to their yet unborn progeny. As Dr. A. Siredey remarked, one could, a generation ago, draw a confession of induced abortion out of a woman only with the greatest difficulty; to-day women think nothing of volunteering such information to any doctor who will listen to them.

Surgeon and Prophet

Dr. G. Lavalée has lately dug out of obscurity the prophetic musings of a surgeon of Montpellier nearly one hundred years ago. He was Professor Lallemant, whose career was so distinguished that in 1843 he was a candidate for membership of the Institut de France. Setting out for Paris in mid-winter to sustain his candidature by appropriate lobbying, he was caught in a snowstorm, and for three days had to kick his heels in a small farm. Having cornered all the available white paper in the locality, he set up his study in a stable and proceeded to cast the horoscope of the world during the next hundred years. This precursor of H. G. Wells foresaw the time when ships would have no sails, masts, or funnels, but would race along at an incredible speed given them by screws. The Suez and Panama Canals were visualized as realities, as was the admission of women to all the educational facilities and professional careers at that time open only to men. Scholarships would be given to the most promising students, and public appointments would depend on competitive examinations. Emancipation of the Press, separation of State and Church, and universal suffrage were also foreseen. In the political world the storm-bound professional surgeon and amateur crystal-gazer anticipated the liberation of Italy and the unification of the German Empire. The prophet who scores so many bull's-eyes at long range deserves all honour, not merely in his own country, and he should be listened to with all due respect and humility when he speaks of the future of a neighbouring country. Professor Lallemant prophesied decadence for England, "the fate awaiting all those peoples who are commercial to the exclusion of all else."

BRITISH EMPIRE CANCER CAMPAIGN

In the absence of Viscount Hailsham, Lord Horder presided at the last quarterly meeting of the Grand Council of the British Empire Cancer Campaign held at the new offices, 11, Grosvenor Crescent, S.W.

It was reported that the first meeting of the newly formed Co-ordinating Committee, set up to ensure the closest co-operation in cancer research and appeal administration between headquarters and its provincial autonomous branches, with laboratory centres of research, had been held in London on July 7. The meeting had been attended by representatives of the Yorkshire Branch, the Birmingham Branch, the Lancashire, Cheshire, and North Wales Branch, and the North of England Branch. It had been decided that future meetings of the committee should be held in the provincial centres, the first being at the Yorkshire centre in Leeds.

On the recommendation of the Scientific Advisory Committee the following grants were approved: £500 to Dr. P. M. F. Bishop at Guy's Hospital for the expenses for one year of certain investigations in regard to endocrine therapy in relation to cancer; £250 to Professor G. I. Finch at the Imperial College of Science and Technology for the expenses of an investigation into the nature and structure of carcinogenic compounds; and £160 to Dr. P. R. Peacock at the Glasgow Royal Cancer Hospital for the purchase of special apparatus for the continuation of his cancer research. On the recommendation of the Joint Committee of the Campaign and of Mount Vernon Hospital, Dr. G. Cranston Fairchild was reappointed the William Morris Research Fellow in Radiology at that hospital for a further period of one year. The William Morris Research Fellowship was established five years ago by a gift of £25,000 from Lord Nuffield.

Grand Council received a detailed report of the activities of its Central Propaganda Committee, and voted a further grant for the year 1937-8 for the extension of the scheme for free educational lectures to the public in the counties of Bedfordshire, Berkshire, Buckinghamshire, Cambridgeshire, Essex, Hampshire, Hertfordshire, Huntingdonshire, Kent, Norfolk, Northamptonshire, Oxfordshire, Suffolk, Surrey, and Sussex.

On the nomination of the Middlesex Hospital Professor J. McIntosh, M.D., director of the Bland-Sutton Institute of Pathology of that hospital, was elected one of its representatives on the Grand Council.

The date of the annual general meeting of the Campaign, to be held at the House of Lords, has been changed to Tuesday November 30, when H.R.H. the Duke of Gloucester, the new president, will take the chair.

In May, 1933, the establishment was announced of a scheme of research fellowships in accordance with a direction in the will of the first Viscount Leverhulme that the income arising from part of his estate should be devoted to the granting of scholarships for research and education. The list of fellowships and grants for research in 1937 has now been issued by the secretary, Leverhulme Research Fellowships, Union House, St. Martin's-le-Grand, London, E.C.1. The recipients of grants include D. Elliot Dickson, M.D., F.R.C.S.Ed., of Lochgelly, Fife, for an investigation of occupational morbidity in coal miners in Scotland.

Correspondence

When to Operate in Appendicitis

SIR,—The following summary of treatment of acute appendicitis may be helpful to your correspondent Dr. H. Hepburn (*Journal*, July 3, p. 34). All surgeons agree that the sooner an appendix in the early stages of inflammation is removed the better, but there is still some disagreement regarding cases of more than thirty-six or forty-eight hours' duration, in which there is an indefinite mass (local peritonitis) or a circumscribed swelling (abscess). Following the principles enunciated by Ochsner and Sherren, I have always advocated that expectant treatment should be adopted in these cases, with the following results:

1. Expectations are realized and inflammation resolves. The appendix is removed three months later, and contrary to expectations the freedom from adhesions is remarkable. In about 65 per cent. of cases inflammation subsides, and the subsequent operation is clean and simple and the wound heals soundly.

2. In about 25 per cent. of cases an abscess forms, if one is not already present. This is no cause for alarm, as it indicates resistance on the part of the patient, and that adhesions have arrested the spread of infection. Expectant treatment is still adopted, but simple drainage may be advisable for two reasons: (*a*) Increase in size of the abscess. Although an abscess will usually rupture into the bowel, the possibility of leakage into the peritoneal cavity cannot be overlooked. (*b*) Slow absorption, as toxaemia is liable to cause visceral degeneration. After simple drainage or absorption of an abscess three months are allowed to elapse before the appendix is removed.

3. In about 10 per cent. of cases expectant treatment must be abandoned on account of exacerbations of pain, increase of local tenderness and rigidity, or elevation of pulse and temperature.

Large numbers of statistics from various sources show that the mortality of cases with localized peritonitis or abscess subjected to immediate operation is about 6 per cent., whereas with adequate expectant treatment the mortality is 3 per cent. Moreover, with expectant treatment complications such as cellulitis of the abdominal wall, secondary abscesses, faecal fistula, etc., are reduced by more than 50 per cent.

With regard to the case quoted by Dr. Hepburn, as it was a six-day appendix with a localized swelling I feel that by adopting expectant treatment the medical officer in the hospital was acting in the best interests of the patient. At the same time the "trenchant comments . . . of surgeons on . . . doctors" who delay in sending patients to hospital are completely justified. Efficient expectant treatment can only be carried out in a nursing home or hospital where the patient is under constant supervision of the surgeon, who can then immediately operate if any untoward features become evident.—I am, etc.,

London, W. 1, July 14. R. J. MCNEILL LOVE.

Technique in Knee-joint Operations

SIR,—The value of aseptic technique as practised by Lane was probably his greatest contribution to surgery, but Mr. Blundell Bankart (*Journal*, July 17, p. 136) must know that even in his hands it was not infallible. So far as I am concerned we are agreed that the deeper layers of the skin may harbour organisms, and that these are in dangerous proximity to the field of operation when the skin has been incised. I personally believe that there is less chance of infection of the wound if the cut edges of the skin are immediately painted with iodine. My friend Mr. Blundell Bankart prefers to rely on the clipping of towels over the margins of the wound. He does not seem to be aware that organisms may have other methods of progression than what he describes as my "fantastic notion of micro-organisms jumping through a sterile towel." Mr. Bankart and I know that our results are very much the same, and it may be that a combination of both methods is the best solution, but in any case I am sure that he is unwise to preach the doctrine that because great advances in surgical technique have been made since the days of Lister none are possible since the days of Lane.—I am, etc.,

Birmingham, July 19. NAUGHTON DUNN.

Insulin Hypoglycaemia in the Tuberculous Diabetic

SIR,—In 1925 (May 30, p. 1004) you were good enough to publish a note of mine on the subject of hypoglycaemia in which I described a fatal case in a young diabetic who was also suffering from pulmonary tuberculosis. This case was also quoted by Wauchope (*Quart. J. Med.*, January, 1933) in a critical review of the condition, in which he also mentions another case and comments on the smallness of the dose of insulin and the relatively long interval between suspension and the fatal attack, which interval was two days in my first case.

In my clinic at Liverpool this has happened again. A man of 25 attended from September, 1933, to April, 1934, during which time his weight increased by 11 lb. and, when he ceased to come, he was taking 20 units of insulin daily; his carbohydrate intake was uncertain as he was unreliable about his food. He was not seen again until July 1, 1937, when he was admitted into hospital at 9 a.m., emaciated and with glycosuria. An *x*-ray examination showed diffuse pulmonary tuberculosis, and insulin was withheld until the evening, when 10 units were given just before a good meal. Nevertheless, he died at 9.30 p.m. in hypoglycaemic convulsions. The one blood examination that was possible showed 107 milligrammes of sugar and 39 milligrammes of urea per 100 *c.cm.* A *post-mortem examination* was made. Protein shock has been suggested as a cause of this hypersensitiveness, but I should be glad of the views and experiences of others who are interested in the diabetic.—I am, etc.,

Liverpool, 1, July 12. H. S. PEMBERTON.

Chronic Monocytic Leukaemia

SIR,—I have read with interest Dr. G. Stewart Smith's description of his case of chronic monocytic leukaemia in the *Journal* of July 3 (p. 1), which, as he pointed out, is of special interest on account of the extreme splenomegaly and absence of anaemia. His statement, however, that a palpable spleen is unusual in this type of leukaemia appears now to require modification in the light of Edwin E. Osgood's recent analysis of 133 cases of monocytic leukaemia, published since Dr. Smith's article went to press (*Arch. int. Med.*, June, 1937). Osgood shows that, while not a constant finding, a palpable enlargement of the spleen is quite a common feature. I doubt if it is wise to gauge the chronicity of a case by the size of the spleen. In the case recorded by me last year (*Liver-*

pool med. Chir. J., 1936, 44, 47) the clinical history was of at least eight months' duration, while the spleen weighed only 17 oz.—I am, etc.,

Liverpool, 1, July 13. JOHN DUNCAN HAY.

Prominal in Treatment of Epilepsy

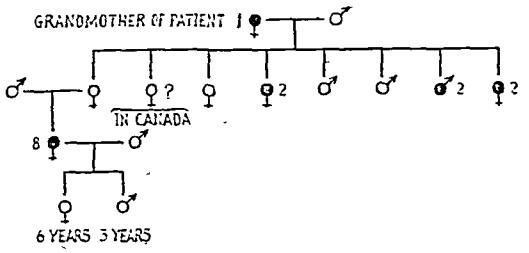
SIR,—Having recently substituted prominal for luminal in the treatment of patients suffering from insanity with epilepsy, I should like to agree with the results published in the issue of July 10 (p. 61) by Dr. Guy Millman in his interesting report.

It has been, I believe, a common experience to find that luminal controls the fits only at the cost of aggravating the aggressive irritability typical of the demented epileptic. With prominal, however, the decrease in the number and severity of the fits is not followed by an exacerbation of the non-convulsive outbursts of ill temper, and the period of confusion which often follows the fit appears to be appreciably shortened. All these factors are of considerable importance in the institutional care of the epileptic patient.—I am, etc.,

Southall, Middlesex, July 14. L. MCL. CURTISS.

Hereditary Sebaceous Cysts

SIR,—Last week a woman asked me to remove several sebaceous cysts from her scalp. Remembering the interesting article on hereditary sebaceous cysts in the *Journal* of May 8, I inquired if other members of her family were affected, and from her information compiled the following tree.



I removed seven cysts varying in size from a grape pip to a damson; the eighth was as yet too small to remove. The contents of two were rather greyer in colour than usual. I have not been able to examine the other affected members of the family so do not know if the numbers given are accurate or only the number of cysts large enough to attract attention.—I am, etc.,

Lee-on-Solent, July 11. EMILY A. C. WILSON.

Ocular Headache

SIR,—I read with much interest the article on ocular headache by Mr. D. Stenhouse Stewart (*Journal*, July 10, p. 59). In this he outlined a plan by means of which the general practitioner may more easily diagnose or exclude an ocular cause for headache. Any help which can be given in this direction will certainly be appreciated, and though I naturally agree with much that the writer has said I find myself at variance on one or two points. I must first qualify my criticisms by saying that Mr. Stenhouse Stewart did not maintain that by following his routine every headache of ocular origin could be diagnosed and the patient sent for further examination. His paper inferred, however, that the majority of such patients could be singled out. The investigation outlined by the writer consisted of the use of Snellen's test type, the ophthalmoscope, and some simple piece of apparatus for estimating binocular muscle balance at reading distance; with each of these I will deal in turn.

When a patient is unable to read 6/6 with one or other eye, then, excluding retinal disease, that eye is either short-sighted, very long-sighted, or has a considerable degree of astigmatism. The myope will rarely complain of headache; the hypermetrope may occasionally do so if he does much close work, and the patient with the high astigmatic error is more likely to complain of defective vision than of headache. A large percentage of patients with headache will read 6/6 or 6/9 with each eye separately. Everyone agrees that the ophthalmoscope should be used more extensively than it is, as much valuable information can often be got from the fundal picture, but, in my opinion, it is of no use in helping one to decide whether a headache is due to eye strain. On very rare occasions a practitioner may be able to see a choked disk, and so confirm a diagnosis of intracranial neoplasm, but for the one headache so produced there are many hundreds due to eye strain.

With regard to the use of the convergiometer, the great majority of ophthalmic patients have an exophoria—a tendency for the eyes to diverge—at reading distance, and if this is so, according to the writer, "all is reasonably well" and eye strain may presumably be excluded as a causal factor. Then, again, I have never found a low degree of esophoria—a tendency to convergence—cause discomfort for close work. Because many hypermetropes have to accommodate their eyes excessively to read they have an esophoria at this distance, but on correcting their hypermetropia by suitable plus lenses the muscle balance is restored. The headache, surely, is due to the excessive contraction of the ciliary muscle, and not to the demand put on the external recti to correct the convergence, as suggested in the article. Imbalance of the ocular muscles, though it may cause headache in some, is more responsible, I think, for a feeling of discomfort and strain than it is for actual headache. For example, old patients with a high degree of exophoria will complain of an inability to read for more than a few minutes at a time, even though their spherical correction is sufficiently strong. Others, again, will experience relief by keeping one eye closed.

I cannot agree with Mr. Stenhouse Stewart when, referring to the correction of small astigmatic errors, he says that "the relief of headache by correction of such errors is often due to the restoration of normal muscle balance by adequate glasses." It is easy to understand that by fully correcting hypermetropia one can reduce a tendency to converge, and similarly with myopia a tendency to diverge, but it is difficult to see how a small astigmatic correction will have any appreciable effect on a state of ocular imbalance. When a small astigmatic error is corrected in a patient suffering from ocular headache he is immediately relieved of his discomfort, and there seems to be no reason to doubt that this refractive error has given rise to the headache by causing some kind of strain on the ciliary muscle. In my experience the great majority of ocular headaches are due to low degrees of hypermetropic astigmatism alone or combined with some simple hypermetropia, often occurring in patients whose vision is 6/6 and whose lateral muscle balance, though not perfect, is within normal limits. In the case of young children, although I have examined a very large number of them for all manner of refractive errors, I have been amazed to find how very seldom one meets with a complaint of headache. This, however, only applies to young people under the age of 12 or 13, after which time ocular headache becomes increasingly common.

I would say that a careful history taken from the patient is a better guide to the practitioner in helping him to make at least a tentative diagnosis of ocular headache than any test he may apply, short of retinoscopy. It is true that the type and situation of the headache, varying as they do so tremendously, are not of very much assistance, but the time factor gives a better clue. Thus a headache coming on in the late afternoon in a patient working in an office, especially under artificial light, is invariably ocular. Others who have reached the age of 40 or more may complain of headache after prolonged reading or sewing, due to the onset of presbyopia. Quite commonly older people who already have glasses for close work will complain of headache in the early morning following an evening spent in reading, and here an increase in the strength of the lenses will cause a disappearance of the symptoms. By far the best test for headache due to eye strain is to ask the patient if a headache comes on after near work, or at the theatre, or, better still, the cinema, or whether it develops after such an entertainment. Now that cinemas are so much better ventilated than they were several years ago it is fairly safe to assume that a headache brought on by a visit to one of them is ocular in origin.—I am, etc.,

London, W.1, July 12. L. G. SCOULAR.

Histamine in Anaphylaxis

SIR,—I think the presence of histamine with eosinophil cells in the secretion of the respiratory tract, as mentioned by Dr. James Adam in the issue of July 10 (p. 88), is a constant phenomenon in all so-called allergic reactions. Applied as a scratch test, the typical plus five reaction results and eosinophil cells are found on section. Injected into animals histamine produces all the symptoms of anaphylaxis, varying exactly as do the symptoms of that syndrome in the different species injected. If the lungs of a sensitized guinea-pig or a strip of uterus is perfused with the protein to which they are sensitized histamine appears in the perfusate. Histamine is not found in the anaphylactoid reactions after the injection of barium, etc. That portion of the pituitary gland containing histamine and used therapeutically to contract the uterus stains with the eosin dyes.

It would thus seem as if anaphylaxis were due intermediately to the formation of histamine, and that when histamine is present eosinophil cells appear, possibly as carriers of histamine in sealed containers to the liver and other parts for destruction or excretion.—I am, etc.,

London, W.1, July 13. FRANK COKE, F.R.C.S.

Carcinoma of Rectum in a Girl of Twenty

SIR,—Mr. W. G. Evans is to be congratulated on his treatment of carcinoma of the rectum by means of radium (*Journal*, July 10, p. 64). There is only one point that I am not clear about, and that is whether or no a preliminary laparotomy was done in order to determine the presence or absence of lymphatic or liver involvement; presumably there was none, as the patient survived after four years. In my case there was a gland the size of a walnut in the mesosigmoid which showed carcinomatous deposits, and to my mind the treatment of colostomy followed by abdomino-perineal resection was the only method permissible.—I am, etc.,

R. RUTHERFORD, F.R.C.S.

Longtown, Cumberland, July 14.

Precipitate Labour

SIR,—The following unusual case of pregnancy with precipitate labour may merit inclusion in your columns.

At about 7 p.m. on June 26 I was called out to see a patient. The messenger could give no information as to what was wrong, and although I arrived at the house within five minutes, at least fifteen minutes must have elapsed between the time I was sent for and my reaching the house, where I found that the patient had recently delivered herself of a full-term male infant, her first child.

The curious part of the case is the history. The patient, aged 24, was married, and had always been regular with her periods, which came on approximately every three weeks and lasted three days. The amount of loss was scanty, and this was no doubt due to her anaemic condition. Throughout the whole of the pregnancy she had seen her periods regularly, and although she admitted that she had noticed her abdomen becoming larger, she had merely thought she was putting on weight. She also said she had felt something move inside her abdomen from time to time, but she put this down to flatulence.

On the day the baby was born she went to work at the factory as usual, but asked permission to go home early as she "did not feel very well." When she arrived home she found that there was slight bleeding from the vagina, and as her ordinary period was then due she took no further notice of this. In fact, she did some heavy housework and then cooked the dinner. After this she laid on the bed, as she felt tired, not troubling to undress. She thinks that she must have been "half asleep," when she felt something between her legs, and heard the infant cry. She was so surprised as well as terrified that she "pulled the infant to her bosom," and in doing so she must have severed the umbilical cord. It was only then that she realized what had happened and sent for me.

When I arrived there was no haemorrhage from either end of the umbilical cord, which was completely severed some six inches from the infant's end, and the umbilical vessels were collapsed. The placenta had already separated, and only needed expression from the vagina. The perineum was intact. Beyond ligaturing the umbilical stump there was very little left for me to do. The puerperium was uneventful.

The outstanding features of this case are: (*a*) the regularity of the periods during the entire pregnancy, (*b*) the absence of vomiting during the early stages of pregnancy, (*c*) the painless labour, (*d*) the unruptured perineum in a primipara without medical aid, the baby weighing 9 lb., and (*e*) the absence of any ill effects to either mother or infant resulting from the severing of the umbilical cord. Any one of these features is in itself unusual in average maternity cases, so that a combination of them all must indeed be a rare "event."—I am, etc.,

J. HAROLD RIPLEY, M.R.C.S., L.R.C.P.

Tottenham, N.17, July 6.

Noise Outside Hospitals

SIR,—I have just been discharged from a nursing home after an operation which caused me neither pain nor serious discomfort. I mention this fact as I do not want it to be thought that I am complaining on my own account; but I wish, so far as possible, to obtain backing from the medical profession on a complaint, in many cases a serious one, which patients in these homes have, I believe, very good grounds for making, and the reason for which, even to one as little ill as I was, was most noticeable. This is the absolute lack of any decency or consideration on the part of a great many of the motoring public.

During the day I can understand that it is difficult to do much to prevent a great deal of the noise, but surely

at night some sort of consideration towards the large number of invalids might be shown. Hooters were blown incessantly—all sorts of strange hooters, making all sorts of weird noises. The question of silencers was entirely disregarded. Speeding up the engines while going through the low gears and starting, after signal lights had held up the vehicle, was carried to the *n*th degree. I had the feeling that there were a great many young people dashing about, no doubt on their lawful occasions, in very antiquated cars, who wished to draw attention to what fine fellows they were (and what ancient vehicles they were driving!) by making a quite unnecessary noise.

I feel certain that if sufficient medical backing were given to the gravity of this nuisance there would be practically no opposition in the House of Commons to the passing of measures which would inflict such penalties that this sort of thing woud be stopped. But it would be of very little use taking this question up unless one were assured of the support of the medical profession. Unfortunately in the House we have very few doctors who could speak on the subject, but, as I have said, I am certain that all Members would lend a sympathetic ear to any suggestion to put an end to the state of things which exists, and would assist in the rapid passing of any Bill which had the prevention of this nuisance as its object.—I am, etc.,

N. STEWART SANDEMAN.

House of Commons, July 12.

Universities and Colleges

UNIVERSITY OF OXFORD

In congregation on July 17 the following medical degrees were conferred:

D.M.—J. A. Boycott, Ella J. Cockram.

B.M.—J. Mason, M. A. Partridge, C. B. I. Willey, I. F. Rose, B. M. Thornton, R. B. Niven, A. F. Smith, J. L. Reid, W. Wynne Willson, A. L. Young, J. B. M. Green, Alice J. M. T. Barnes, Jean M. Sherring, Rebecca Billig.

UNIVERSITY OF CAMBRIDGE

The E. G. Fearnsides Scholarship, of the value of £100, offered in alternate years for the encouragement of clinical research in organic diseases of the nervous system, has been awarded to A. M. Barry, M.A., M.B., B.Chir., of Pembroke College.

UNIVERSITY OF LONDON

ACADEMIC POSTGRADUATE DIPLOMA IN MEDICAL RADIOLOGY

The following candidates have been approved:

Eleanor K. Abbot, I. A. Abou Sinna, P. Arunachalam, C. S. Chatterjea, Phyllis M. Fraser, M. I. Ghattas, H. H. Navid, D. W. Smithers, R. C. W. Staley.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The following candidates have been approved at the examination indicated:

ACADEMIC POSTGRADUATE DIPLOMA IN PUBLIC HEALTH.—J. K. Adranvala, Beatrix H. Bakewell, Lalage R. A. Benham, D. M. Blair, Kathleen G. Brimelow, P. N. Chatterjee, *A. B. Christie, Kitty K. Conrad, J. S. Cookson, Teresa I. M. Craig, Iris M. Cullum, C. F. Cumings, Enid S. Davies, B. K. de Silva, S. Graham, Eva M. Gray, E. H. Harte, R. M. M. Hunter, J. D. Lendrum, S. E. D. Masilamani, B. B. Mukerjee, D. Murray, A. F. S. Perera, Violet M. Spiller, Margaret B. Steel, Tsung-Sing Sze, *J. W. P. Thompson, A. F. Turner, V. M. Vatve, Sarah C. B. Walker, L. A. F. Wiles, Isabel A. M. Woods.

* Awarded a mark of distinction.

UNIVERSITY OF MANCHESTER

The following appointments have been made: Dr. E. L. Patterson as assistant lecturer in anatomy; Dr. Margaret I. Williams as assistant lecturer in applied physiology; Drs. D. D. Cranna, D. A. Richmond, and F. W. Smith as demonstrators in anatomy; Dr. John Yule as clinical lecturer in infectious diseases; Dr. Harold Simms as honorary dental surgeon; Drs. J. C. Bramwell, Stanley Hodgson, and Mr. E. E. Hughes as members of the Board of the Faculty of Medicine.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

The following candidates have been approved at the examinations indicated:

M.D.—A. J. O'Connor, J. B. Patrick, H. T. Ryan, W. C. Sloan.

FINAL MEDICAL EXAMINATION.—*Part I, Materia Medica and Therapeutics, Pathology and Bacteriolgy:* *M. O'C. Drury, *F. L. Willington, †Sylvia M. Hall, †C. B. Robinson, †M. E. Tapissier, †F. de B. Whyte, †R. G. P. Heard, †E. G. Hobart, †R. S. W. Baker, †Katherine Dowling, †W. A. J. Pike, W. B. Dennehy, E. G. Millar, C. J. Du Preez, Muriel Bannister, J. K. Craig, N. J. Hogan, J. C. G. Moore, A. C. Corbett, N. C. Brown, W. F. Carpenter, C. W. Bradfield, M. Daly, J. L. Handelman, J. C. de R. Sugars, Patricia D. Concannon, J. P. Gore-Grimes, D. A. Huggard, G. A. Anderson, Lucia M. E. FitzGerald, E. Cullen, J. W. Boland, C. H. Rutherford. *Part II, M.B.:* †M. C. Brough, †C. Mushatt, J. A. Strong, F. C. Heatley, Grace M. Wild, M. C. Wood, C. Cunningham, J. N. G. Drury, J. E. Gillespie, J. C. Lambkin, J. G. Nixon, H. J. Walker, E. M'G. Cochrane, S. G. Heaton, H. F. T. MacFetridge, A. D. Parsons, R. Pollock, G. N. MacFarlane, J. H. Mitchell, Jasmine Taylor, Patricia M. J. Conway, J. M'C. Caldwell, R. E. Taylor, J. B. Plews, Maureen N. S. Mason, E. G. Fox, Stella M. Coen, Frances M. C. Wolfe, C. M. Ludlow, J. Freedman. *B.Ch.:* *R. Pollock, †J. A. Strong, †G. N. MacFarlane, †H. M. Carson, †H. J. Walker, †J. E. Gillespie, †W. Hayes, H. F. T. MacFetridge, M. C. Wood, R. E. Taylor, R. W. Duncan, M. C. Brough, F. C. Heatley, H. FizG. Sloan, E. R. N. Cooke, C. Eppel, E. G. Fox, C. Cunningham, J. C. Lambkin, C. J. S. Flood, J. H. Mitchell, Jasmine Taylor, G. K. Donald, W. J. G. Warwick, A. D. Parsons. *B.A.O.:* *C. H. Blackham, †R. C. H. Cooke, †W. Jones, †H. M'V. Buchanan, †W. J. E. Pietersen, †Maureen N. S. Mason, †M. D. Thorp, †J. M'C. Caldwell, †Frances M. C. Wolfe, T. Fallon, J. E. Murphy, F. J. B. Convery, B. W. Hughes, N. M'Sharry, J. F. Rishworth, L. A. S. Edmondson, N. Marks, M. D. M. Bergin, Bridget P. Mansfield, J. T. Speidel.

DIPLOMA IN GYNAECOLOGY AND OBSTETRICS.—R. Sinha, D. P. Harris, K. Narulker, D. Wazalwar, Elizabeth A. Akerele.

DIPLOMA IN PUBLIC HEALTH.—*Part I:* J. D. Murray. *Part II:* T. A. Austin, S. G. Rainsford, R. L. G. Proctor, H. W. Dalton, Mary S. Miller.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—*Part I:* D. T. Bardon.

The following prizes have been awarded:

Dr. Henry Hutchinson Stewart Medical Scholarships: Physics, Chemistry, Botany and Zoology, G. B. Gibson. Anatomy and Physiology, W. E. O'C. C. Powell. Mental Disease, D. T. Bardon, M.B. *Medical Scholarships:* Physics, Chemistry, Botany, and Zoology, J. R. Hassard. Anatomy and Physiology, H. H. Balch. *Fitzpatrick Scholarship:* G. N. MacFarlane. *Daniel John Cunningham Memorial Medal and Prize and John Mallet Purser Medal:* W. E. O'C. C. Powell. *Aquilla Smith Prize:* M. O'C. Drury. *Walter G. Smith Prize:* A. H. Isaacson. *Conolly Norman Medal in Mental Diseases:* M. C. Wood. *Medical Travelling Prize and Banks Medal:* G. J. Dixon, M.B. *De Renzy Centenary Prize:* T. A. Austin, L.R.C.P. and S.I.

* First-class honours. † Second-class honours.

QUEEN'S UNIVERSITY, BELFAST

The following candidates have passed in the subjects indicated:

M.D.—*W. M. Loughridge, *A. Lynn, *R. S. Cromie, D. J. C. Dawson, J. D. Hardy, W. D. Hughes (*in absentia*), M. Jeffers, J. K. M'Collum, T. A. C. M'Quiston, B. M. Maxwell, J. V. Wilson. M.B., B.Ch., B.A.O.—†A. C. Glendinning, †J. Harper, †J. W. S. Irwin, †J. W. Millen, †M. G. Nelson, C. T. B. Adams, Jean E. Allen, H. Arthur, A. S. Baker, Evelyn Bennett, D. Black, D. J. Blumberg, I. A. J. Blyth, A. M. Boyd, Ruth C. M. Brown, W. Calwell, S. H. Carson, Wilhelmina M. Craig, H. J. Doran, F. Dornan, W. H. Fee, Julia M. Ferriss, R. C. Fraser, S. J. G. Gilmour, J. E. Glasgow, J. A. H. Henderson, N. C. Hughes, E. F. G. James, M. I. Kaplan, H. Kennedy, T. A. King, Mary E. Loan, J. Lightbody, F. D. Lord, J. A. Macaulay, Grace E. M'Clafferty, J. M. M'Closkey, J. M'Murray, R. A. E. Magee, Annie W. Megaw, R. J. Mitchell, F. J. Murray, J. A. O'Connell, J. W. B. Paton, Eileen E. Perry, M. I. Robinson, T. L. Ross, Kathleen E. Shannon, J. S. S. Thompson, J. B. Upton, D. G. C. Whyte, E. L. Wilson, G. N. Wilson, K. S. Wilson, W. R. Wright.

* With commendation. † Second-class honours.

C. Uggeri (*Arch. ital. Chir.*, 1937, **49**, 4, p. 361) states that while he found it impossible to produce aneurysms either in animals or man as the result of a single trauma, he succeeded in producing an aneurysmal sac with fibrinous walls in dogs after repeated attempts. According to him, sacs of this kind are not due to distension of the vessel by a thrombus occluding the arterial wound, but are the result of thrombotic deposits within the cysts.

Obituary

SIR THOMAS MYLES, C.B., M.D., F.R.C.S.I.

Consulting Surgeon, Richmond Hospital, Dublin

We regret to announce the death at his home in Leeson Park, Dublin, on July 14, of the distinguished surgeon Sir Thomas Myles, a former President of the Royal College of Surgeons in Ireland.

Thomas Myles, son of John Myles of Limerick, was born on April 20, 1857, and studied medicine at Trinity College, Dublin, graduating M.B., B.Ch. in 1881, afterwards proceeding to the M.D. degree with distinction. In 1885, on becoming F.R.C.S.I., he was appointed secretary of the Dublin Hospitals Commission, having previously served as house-surgeon at Steeven's Hospital.



In 1889 he was appointed professor of pathology at the Royal College of Surgeons, afterwards acting as examiner in surgery and occupying the presidential chair in 1900–2. He was for many years visiting surgeon to Jervis Street Hospital and to the Richmond Hospital. He received the honour of knighthood in 1902 and represented his College on the General Medical Council from 1905 to 1911 and again from 1933 until the time of his death.

Sir Thomas Myles was an honorary surgeon to the King in Ireland throughout the reign of his late Majesty, and medical referee for the Treasury in Ireland. On the outbreak of war he was appointed consulting surgeon to the Irish Command with the temporary rank of lieut.-colonel, R.A.M.C. He was promoted colonel, A.M.S., and created C.B. in 1917.

Sir William I. de C. Wheeler sends the following appreciation:

The death of Sir Thomas Myles leaves a blank not only in the ranks of the medical profession in Dublin but amongst a large community of friends and old pupils at home and abroad. Apart from professional ability of a high order, his intellectual and physical vigour aroused the interest and admiration of all who knew him. "Tom" Myles was a striking personality; it is difficult to picture his surroundings in his absence. He was a staunch and loyal friend. He was gifted with a vivid memory, his knowledge of literature was deep from endless reading, and as a speaker he was impressive and amusing. In discussions and debate he baffled opposition; in the end his views usually prevailed.

I knew him intimately for over forty years. First as a child, then when I was a medical student, and afterwards in close friendship in the many activities of surgical life. The help and encouragement he gave to juniors were whole-hearted and unstinted. A few weeks ago I had a letter recalling memories and mingling the old robustness with characteristic humour. As a young man he devoted a considerable amount of time to the study and teaching of anatomy. His memory was such that to the end of his active years he was able to recite the anatomical relationships in almost any region of the body. In addition, while still young, he became professor of pathology in the Royal College of Surgeons Medical School. With this strong foundation, reinforced by his personal magnetism, he built up an extensive surgical practice and became recognized as one of the most successful teachers of his day. His lectures at the Richmond Hospital attracted large classes. The students remained his disciples in after-years. He became President of the Royal College of Surgeons and was its representative on the General Medical Council at the time of his death. During the war he served the Army Medical Administration with ceaseless energy; his close friends were Lord Moynihan, Sir Robert Jones, and the Director-General, Sir Alfred Keogh.

In conversation "Tom" Myles made a point of avoiding professional topics. He delighted his friends with apt quotations from Shakespeare or from the many modern writers with whom he was so familiar. His company was sought on all sides, his companionship was instructive and entertaining. In the realm of sport he was equally conspicuous. He told of his adventures as an amateur heavyweight boxer. In later years he became an enthusiastic yachtsman; he seldom missed a Rugby football match of major importance. His surgical writings and operative work now belong to a past generation: they are still worthy of study. Notwithstanding all these qualities his intimate friends will remember him best by the charity and sympathy which followed him to the bedside of his hospital patients. He had retired from active surgical practice, but although handicapped by some deafness he retained that commanding and unconventional personality which made him an outstanding figure in whatever circle he moved.

He raised to a higher level everything he touched. Mediocrity and commonplace in his hands reached efficiency and respect. He set a great example. No one in our time can hope to replace him.

Sir Robert H. Woods writes from Dublin:

By the death of Thomas Myles Ireland has lost one of her most remarkable men. Though he won his fame as a surgeon surgery was only one of his many activities. He was interested in all things human. His retentive memory, fed by omnivorous reading, rendered him a veritable storehouse of information which he was at all times ready to impart; and there were few subjects of discussion on which he could not deliver a mature and enlightening opinion. In Baconian phrase he was full, ready, and exact. He had an intrepid mind that broke through the entanglements of catchwords and phrases, and arrived at what appeared to him to be the truth with wonderful ease. The vigour of his expositions sometimes vexed less independent minds, but he was never gratuitously offensive, and his points were made with as much modesty as the importance of the subject seemed to allow. Mentally as well as physically he was a big man, and no one could talk to him without knowing it. With the strength of a giant he was never tyrannous. Like a good boxer, he could hit hard and straight, but he was utterly devoid of petty jealousy, and was never known to bear malice. He never forgot a friendly act nor desired to remember an unfriendly one. He had a complete and good-humoured tolerance for those whose views differed from his, and in an intimacy of over fifty years I never knew him to be out of temper. Shakespeare was his favourite author, and few men of his time could compete with him in his textual and critical knowledge of the plays.

His knowledge of modern history was vast, and he could talk equally well on classical and current literature.

He scored his first success as a "grinder," and no one who was privileged to be a member of his class could easily forget the clearness of his explanation of a difficult subject. A born teacher, his enthusiasm made hard work attractive. But hard work under his tuition never connoted drudgery. Like the Great Playwright, he understood the value of comic relief in the middle of strain too well to repress an occasional flippancy during his grinds; and indeed he more often himself led the laughter by some ludicrous comparison or quaint turn of phrase that helped to fix the lesson more effectively. So much was this the case that none of us missed a grind if we could possibly attend, for we knew that the fun would more than compensate for the toil.

I was his colleague for fifteen harmonious years from 1891. At that time asepsis was beginning to displace antisepsis in theatre work, and Myles was one of the pioneers of the newer method. He was the first surgeon that I saw using gloves; they were of cotton, for rubber had not yet come into use. His first sterilizer was a fish-kettle on the kitchen fire of the old Richmond Hospital, to the amazement of the cook, who supposed that he "wanted to soften the instruments." I think it was he, though it may have been his fidus Achates, Richard Lane Joynt, who at this time perpetrated the delightful parody of Polonius: "And boiling dulls the edge of cutlery." Even to the end the boy was never lost in the man, and an after-dinner speech from him was a delight. Up to a short time before his death he seemed to have discovered the secret of perpetual youth, for his intellect was as clear and his bodily strength as vigorous as that of most men of half his age. We shall not look upon his like again.

Mr. A. B. Mitchell writes from Belfast:

A very great Irishman has gone to his long rest. Sir Thomas Myles was an outstanding personality in any company. His conversation was always fascinating because of the extraordinary range and accuracy of his knowledge and the simplicity and forcefulness with which he expressed himself. His acquaintance with history was profound. He was one of our greatest Shakespearian scholars, and constantly quoted his favourite author with a fervour and suitability that was most impressive. He was endowed with a colossal memory. He was a voracious reader. A book once read was mastered; he could refer to its individual characters years afterwards as if he had lived and moved amongst them. His wonderful capacity as a teacher of medicine and surgery will never be forgotten till his last pupil has gone to join him in the "Everlasting Land." It is not too much to say that one's first visit to "Tom Myles's Grind" was a revelation. The lucidity, brevity, accuracy, and virility of his descriptions of disease were altogether unique. He prepared more than 1,000 young men for various medical degrees, and for entrance examinations for the Army, Navy, and Indian Medical Services. His pupils have attained the foremost positions in every part of the British Empire. Wherever they went they carried with them not only profound admiration but a deep affection for their great teacher. It is impossible to overestimate his influence upon the lives and character of those who came under his magnetic personality. Others will deal with his skill as a surgeon; I have confined myself to some personal characteristics of my beloved teacher and lifelong friend.

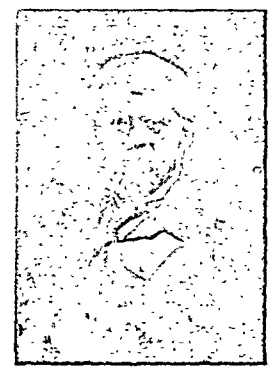
[The photograph reproduced is by Lafayette, Dublin.]

WILLIAM LANG, F.R.C.S.

Consulting Ophthalmic Surgeon, Middlesex Hospital; Consulting Surgeon, Royal London Ophthalmic Hospital

We regret to announce that Mr. William Lang, the veteran ophthalmic surgeon, died on July 13 at the age of 84. He retired from practice some ten years ago, but continued to live in Cavendish Square.

Born at Exeter on December 28, 1852, the youngest son of Isaac Lang, he was educated privately and at the London Hospital, where he held the posts of house-physician, house-surgeon, demonstrator of physiology, and demonstrator of anatomy, after qualifying as M.R.C.S. in 1874. While at the London he came into close touch with James Edward Adams, the ophthalmic surgeon, and this was the beginning of a long and fruitful career in the diagnosis and treatment of eye disease. Lang became a Fellow of the Royal College of Surgeons in 1879, and five years later, when Adams resigned from the staff of the Royal London Ophthalmic Hospital (Moorfields), he was elected to the vacancy. About the same time he was also appointed ophthalmic surgeon to the Middlesex Hospital, and at these two institutions he exerted a powerful though quiet influence on young eye surgeons. On his resignation from Moorfields in 1912 he was appointed consulting surgeon. Those who had the advantage of being trained by William Lang will recall to memory his *Methodical Examination of the Eye*, a book which was "the ophthalmological Bible of their junior days." It came out in 1895 and was labelled Part I; all who worked in his clinic at Moorfields or the Middlesex looked forward to the publication of the remaining part or parts—but none ever appeared. He was also a pioneer in the conception of focal sepsis. Many years ago he taught that iritis commonly had its origin in some focus of inflammation elsewhere in the body.



William Lang had a cultivated taste in books and pictures, but was reticent and retiring. In the days when he lived at Chiswick he enjoyed the friendship of William Morris and his group, and bought the volumes from the Kelmscott Press as they came out. He was twice married and had a son and a daughter. The son, Basil Thorn Lang, F.R.C.S., died early in 1928 at the age of 47. He was an ophthalmologist of exceptional ability and a man of great originality of mind and mechanical inventiveness.

We are indebted to Sir Arnold Lawson for the following appreciation:

I doubt if there is anybody who can claim so intimate and so long an acquaintance with William Lang as myself. I first came into contact with Lang as one of his out-patient dressers at Middlesex Hospital. Later on I was his house-surgeon at the same hospital, and subsequently, until my election to the staff at Moorfields, I was his chief clinical assistant at Middlesex. Then I became his colleague on the staff of Middlesex as well as at Moorfields, and all this means that I was in close touch with his work for a great number of years. I am glad to

write some notes about Lang. He was my first teacher in ophthalmology, and I owe a great deal to him. There are many who, like me, could say much about his work, but nobody who could say it with a greater reverence or a greater appreciation of his very high qualities.

Although Lang was essentially a "Middlesex man" he received his early training at the London Hospital, where he entered as a student in 1870. There he served as house-surgeon and house-physician, and for a time was a demonstrator in anatomy and physiology. In 1879 he took his Fellowship at the Royal College of Surgeons, and in 1881 he was elected ophthalmic surgeon and lecturer on ophthalmology to the Middlesex Hospital. This post he filled with great distinction until 1914—a period of thirty-three years—when, owing to the age limit of 65, he retired from the active staff and was elected consulting surgeon to the hospital. In 1884 Lang was elected assistant surgeon to the Royal London Ophthalmic (Moorfields) Hospital, and in due course became full surgeon, serving in that capacity until 1912, when he was elected to the consulting staff of the hospital. At Moorfields the age limit is somewhat younger than at Middlesex, and it was on this account that he retired from active work at Moorfields rather earlier than he did at Middlesex.

Lang was one of the original 113 members of the Ophthalmological Society of the United Kingdom, a band of pioneers in modern ophthalmology who formed themselves into a society in 1880 under the presidency of Sir William Bowman. Many distinguished names, since writ large in the annals of ophthalmology, are to be found in the list of original members, and that of William Lang will be numbered among them. Lang was one of the last two survivors, and his death leaves only Sir Lindo Ferguson to represent the founders of the society. Lang always took a keen interest in the work of the society and wrote many articles in the annual *Transactions*, retaining his membership to the last. He was a vice-president of the society, and in 1903 acted as president during the interregnum caused by the death of Dr. David Little, who was president at that time. Lang was a prominent member of the Ophthalmological Section of the Royal Society of Medicine, and was one of its early presidents, contributing much to the discussions and evincing great interest in the welfare of the Section.

Lang was essentially a great clinician. He wrote many papers recording his experiences in a diversity of subjects appertaining to the eye, and in this respect will probably be best remembered by his early recognition of the importance of focal sepsis in the aetiology of chronic inflammatory conditions of the eye. He was always an advocate for massive doses of vaccines, and was accustomed to commence proceedings with a dose which would startle a good many bacteriologists nowadays. Undeniably, however, he met with a large measure of success in many cases which had resisted all the usual remedies. His contributions to the technique of ophthalmic surgery were considerable. Although he laboured under difficulties engendered by a marked tremor of the hands he was a beautiful operator, and the tremors always ceased when he was about to do something which required particular accuracy and delicacy of touch. In point of fact these tremors had nothing to do with what are commonly known as "nerves." I remember very well at the time of the great International Medical Congress in London before the war there was to be a large gathering of European ophthalmological professors to see our work at Moorfields. All we younger surgeons were rather shy of exhibiting our prowess under the close scrutiny of learned foreigners—for of course in the operating theatre at Moorfields all onlookers are very close indeed to the operating surgeon. Lang, however, was delighted to be showman, and gave a most masterly exhibition of beautiful handiwork, which was the more remarkable because of the doubts which were uppermost in one's mind before he really started. Lang had a mechanical mind, too. His eye speculum, which guarded the lashes and kept them out of the field of operation, found instant favour, and is in general use now. Also he introduced twin knives for the division of anterior synechiae which have not been surpassed. He was interested in the treatment of lachrymal troubles, and his lachrymal syringe and blunt dissector and scoop are well known. But perhaps his best-known contribution to the mechanical side of surgery was his advocacy of inserting an artificial globe into Tenon's capsule after enucleation as a means of preventing the deformity following on the shrinkage of the orbital tissues and so permitting good movement of the artificial eye. Lang was led to introduce this operation because of the fear of sympathetic uveitis that haunted Mules's operation of evisceration of the contents of the globe and placing a prothesis on the ocular stump. This operation was, however, received with mixed favour. I believe it to be perfectly free from danger of sympathetic inflammation in the other eye myself, but others were not so favourable, and there proved to be considerable difficulty in keeping the artificial globe in a central position. After a time there was apt to occur a certain displacement, which negatived to some extent the usefulness of the operation, and sometimes made necessary the removal of the globe.

Lang was a splendid teacher. He was fond of the students—dear boys, as he habitually called them when trying to instil the elements into the usual mixed crowd of out-patient men. He had an arresting and genial personality which insisted on and commanded attention from even the dullest of them. One *had* to learn when Lang wished it, for otherwise there was a gentle sarcasm handed on to the unhappy man which caused general amusement to the onlookers and made the recipient very conscious of his futility. He was a very hard and conscientious worker himself and expected the same from his assistants, being very appreciative, however, of work well done. He was a very keen observer, and this, with his attention to detail, brought him great success in his private practice. I can certainly say that few people who consulted William Lang ever transferred their cases to another specialist. He would enter on a dull case of refraction with the same complete attention to detail as he would give to more interesting work, with the result that he inspired great confidence in all his patients in both his hospital and his private practice.

Socially he was not athletic, but he was fond of golf and took great interest in golf matches between the staff and the students at Middlesex, presenting a most beautiful bronze statuette of an athlete as a trophy for an annual competition. His golf was not of a high order, but he thoroughly enjoyed it, and a match with him when the opponent, like myself, was indifferently bad was always a keen and amusing affair. Lang hated public speaking, and especially avoided after-dinner speeches whenever he could. When we gave him a great dinner on his retirement from the active staff of Middlesex he had of course to make a speech of thanks, the thought of which disturbed him so much that we had quite a difficulty in getting his consent to the dinner.

Lang's later life was clouded with much sorrow. He married twice, and his second wife predeceased him by

many years. By his first wife he had a son and daughter. His only son, Basil, was brilliantly clever, and, following in his father's footsteps, was eventually elected to the staff at Moorfields only to die a few short years later from pneumonia at a time when his prospects were of the brightest. Lang felt his son's death very keenly, and soon afterwards began to exhibit symptoms of the long pathetic illness which eventually brought his life to a close. For several years he was comforted by the complete and marvellous devotion of his daughter, who literally gave her life to helping him and to soothing his failing powers.

Dr. AUGUSTUS ROLLO BALMAIN, deputy M.O.H. for Ilford, died from a sudden heart attack while motoring in the Rhineland with his wife; the funeral took place at the village church of Hockering, outside Norwich. Dr. Balmain graduated M.B., B.S.Lond. in 1916, and took the D.P.H. of Oxford in 1920. After studying at Birmingham and the Middlesex Hospital he held house appointments at the Birmingham General Hospital, and was formerly assistant M.O.H. for Colchester and Birkenhead, and county oculist and assistant school medical officer for Somerset. During the war he served with the 14th C.C.S. in the East African Expeditionary Force. He obtained the M.D. in 1929. Dr. A. H. G. Burton, M.O.H. for Ilford, writes: Dr. Balmain was a modest, unassuming, retiring man, and probably only his immediate chief understood his worth. He came to Ilford in 1927 with the highest recommendations from his previous medical officers. He had a fine knowledge of modern medical work, and was himself a doctor whose opinion could be implicitly relied upon on any medical matter. He had charge for some years of the diphtheria immunization clinics and of the open-air school, and was inspector of nursing homes and of massage establishments in Ilford. In addition he collaborated with me in a good deal of research work and case recording which would have been impossible for me to carry out without his assistance. We published together seven articles, which appeared in the *Lancet* between 1928 and 1931. At the time of his death we were considering the possibility of the scientific estimation of the value of the open-air school, and the reason why it benefits some children and not others. Some preliminary work had already been done, but it will have to be left for another hand to complete it. Dr. Balmain was a loyal colleague, ever anxious to assist any members of the staff whom he was able to help. He carried himself gallantly through the great war, serving in the East African Expeditionary Force throughout in spite of many attacks of malaria, and remained as captain in the R.A.M.C. Special Reserve.

Dr. DANIEL BARTHOLOMEW FOLEY, who was for many years in practice at Wombwell, Yorkshire, died recently at Southport, aged 72. He studied medicine at Queen's College, Cork, obtaining the L.R.C.P. and S.Ed. and L.R.F.P.S.Glasg. diplomas in 1889, and soon afterwards entered into partnership with his brother, the late Dr. James Foley. After some forty years as pit doctor at Darfield Main Colliery, during which he was prominent in ambulance work, Dr. Daniel Foley retired to Southport in 1931, and the Wombwell Urban District Council gave his name to one of the thoroughfares on its new housing estate in recognition of his public services to the district. He had been a member of the British Medical Association for thirty years.

Dr. ROBERT HARGREAVES, a Sheffield medical practitioner, collapsed while driving his car in one of the busiest central thoroughfares of the city on July 12, and died a few minutes later, before admission to the Sheffield Royal Hospital. Dr. Hargreaves was born in 1891, and studied medicine at Cambridge and University College Hospital, graduating B.A. in the Natural Sciences Tripos and afterwards obtaining the M.R.C.S. and L.R.C.P. diplomas. During the war he was medical officer to the 9th Battalion Royal Fusiliers with the rank of Captain R.A.M.C.(T.), and at the end of 1918 he took over his father's practice. He was a member of the Sheffield Medico-Chirurgical Society and joined the British Medical Association twenty years ago.

Dr. HENRY WILSON died at Cheadle, Cheshire, after a long illness, on June 25 in his seventy-ninth year. A student of Owens College, Manchester, he obtained the M.R.C.S. diploma in 1881, and after serving as house-surgeon at the Manchester Royal Infirmary, and senior resident medical officer at St. Mary's Hospital, Manchester, he settled in practice at Cheadle. Dr. Wilson was a justice of the peace for the county of Chester, a past-president of the Stockport Medical Society, and a member of the Manchester Pathological and Medical Societies. He joined the British Medical Association as long ago as 1884.

Medical Notes in Parliament

On July 13 the Local Government Superannuation (Scotland) Bill was before the House of Commons. On a motion for third reading Rear-Admiral Beamish drew attention to Clause 12 which, he said, discriminated against voluntary service counting for service with a local authority. The people who voluntarily served in the Forces of the Crown in the war and, again voluntarily, extended their service after the armistice, were, under the Bill, excluded from counting for pension their period of military service. Dr. Elliot said that it was the intention of the Government to recommend the insertion of an amendment in the House of Lords to extend the period during which service with the Forces should count from November 11, as now in the Bill, to December 31, 1920. The Bill was read the third time.

In the House of Lords on July 19 the Local Government Superannuation Bill passed through committee, and the Local Government Superannuation (Scotland) Bill was read a second time. The Finance Bill was read a first time.

In the House of Lords on July 19 the Summary Procedure (Domestic Proceedings) Bill and the Cinematograph Films (Animals) Bill were read the third time and passed.

In the House of Lords on July 19 the Royal Samaritan Hospital for Women Glasgow Order Confirmation Bill passed through the report stage.

In the House of Lords on July 20 the Royal Samaritan Hospital for Women Glasgow Order Confirmation Bill was read the third time and passed. Later that day the Bill was received in the House of Commons.

The House of Lords this week discussed the report of the Royal Commission on Palestine. The report stage of the Factories Bill was set down for July 22. In the House of Commons there were debates on Palestine, foreign affairs, the Milk Amendment Bill, and the Estimates for the Department of Health, Scotland.

On July 20 the Royal Assent was given to the Livestock Industry Act.

In the House of Commons on July 20 the Milk (Amendment) Bill passed through Committee.

Supplementary Estimates published on July 20 include £85,000 additional grant to the Diseases of Animals Account in respect of tuberculosis in cattle, and of £1,500 for other diseases in cattle, making the total grants for diseases of animals services in 1937

£287,610. Contributions towards the expenses of the Milk Marketing Board in increasing the demand for milk in England and Wales are raised from £240,000 to £430,000. The similar vote in Scotland is increased from £42,500 to £60,500. These votes will be partly used in compensation in respect of milk sold at reduced prices for consumption by special classes of persons. A Supplementary Estimate of the Board of Education includes £158,000 for grants under the Physical Training and Recreation Act.

Factories Bill

The House of Lords, on July 12, went into committee on the Factories Bill. On Clause 20 (Cleaning of machinery by women and young persons) Lord BERTIE OF THAME moved to allow the cleaning of machinery by these classes of workers with the special consent of the Home Secretary. He said this might be advisable in an emergency such as war. The EARL OF MUNSTER, in resisting the amendment, said that from 1931 to 1935 accidents to women and young persons through cleaning machinery numbered 3,758. The amendment was withdrawn.

On Clause 27 (Precautions in places where dangerous fumes are liable to be present) the EARL OF LISTOWEL moved to provide that men working under dangerous conditions in confined spaces should in all cases wear a suitable breathing apparatus. The EARL OF MUNSTER said workmen found such an apparatus extremely uncomfortable and hampering to their movements. The provisions in the clause had been worked out with technical advisers and did not dispose men working in these confined spaces to any risk whatsoever. The amendment was withdrawn.

WASHING FACILITIES: NEW CLAUSE

Clause 42 (Washing facilities) was withdrawn on the motion of EARL DE LA WARR, and on the motion of the EARL OF MUNSTER the following new clause was substituted:

> "(1) There shall be provided and maintained for the use of employed persons adequate and suitable facilities for washing, which shall be conveniently accessible and shall be kept in a clean and orderly condition.
>
> (2) The Secretary of State may by regulations prescribe, either generally or as respects any class or description of factory or as respects the persons employed in any process, a standard of adequate and suitable washing facilities.
>
> (3) The Secretary of State may by regulations exempt any class or description of factory from the requirements of this section, where he is satisfied that, having regard to the special conditions under which work is carried on, compliance therewith would be unreasonable, and the superintending inspector for the division may by certificate exempt, subject to any conditions specified in the certificate, a factory from the requirements of this section where he is satisfied that, having regard to the special circumstances of the factory, compliance therewith would be unreasonable.
>
> (4) This section shall come into operation on July 1, 1939, provided that, as respects persons employed in any process in which lead, arsenic, or any other poisonous substance is used, or any process prescribed by the Secretary of State, being a process liable to cause dermatitis or any other infection of the skin, this section shall come into operation at the commencement of this Act."

Lord STRABOLGI remarked that under the new clause two years had to elapse except in especially poisonous occupations. Two years were not required for fitting up washing facilities and he hoped the matter would be looked into. The EARL OF MUNSTER said that in many factories it could not be done before that date. In reply to Lord ADDISON he promised to consider, before the report stage, whether the words "of the skin" in the last line but one of the amendment should be deleted in order to cover a case which had occurred during the war, when it was found that a considerable percentage of T.N.T. poisoning was caused not through the skin but because people from the factories put their stained hands to their mouths.

On Clause 49 (Protection of eyes in certain processes) an amendment was accepted on the motion of the EARL OF MUNSTER empowering the Home Secretary to direct the use of screens instead of goggles where this was desirable.

On Clause 54 (Basement bakehouses) Lord FARRINGDON moved a proviso that such bakehouses should in no cases be used after the expiration of five years from the date of the passing of the Act. He said it was impossible that premises used for baking underground could be hygienic. The temperatures in these places were terrific. Modern ovens were of metal and of no great weight and therefore could be moved to other positions without much difficulty. Notice of the intention to abolish underground bakehouses had been given in 1891. The EARL OF MUNSTER said nearly all the basement bakehouses which still existed were occupied by small concerns, and these small concerns were rapidly disappearing. The Government was satisfied that by the clause as it stood it was providing proper hygienic and sanitary conditions in bakehouses, and it was not prepared to end the life of the smaller classes of master bakers five years hence. The amendment was negatived. Lord FARRINGDON moved to insert a new clause prohibiting night work in bakehouses. After discussion the new clause was rejected by 34 to 9 on the ground that an inquiry set on foot by the House of Commons into night baking was not yet complete.

WORKING HOURS OF WOMEN AND JUVENILES

On Clause 70 (General conditions as to hours of employment of women and young persons) the EARL OF LISTOWEL moved to insert "it shall be unlawful for a young person under the age of 15 years to be employed in a factory." The amendment was defeated. On the same clause Lord FARRINGDON moved to substitute 40 hours for 48 hours as the maximum working week for women and young persons. The EARL OF MUNSTER said it must be remembered that it was at present legally permissible to employ persons for 60 hours a week in non-textile and 55½ hours a week in textile occupations, and the Bill laid down that legal maximum hours of employment in all factories should not exceed 48 in one week. The proposed reduction to 40 hours would result in dislocation of industry and heavy loss of production. The amendment was rejected.

Lord ADDISON moved to reduce the maximum working spell permitted without a break for women and young persons from 4½ to 4 hours. He said that during the war he had appointed a Committee on Fatigue which was succeeded by a Committee on Industrial Fatigue. These presented reports which, without exception, supported the principle that 4 hours was enough as a continuous spell of work. The amendment was negatived.

On Clause 71 (Reduction of weekly hours of work of young persons under 16) the BISHOP OF WINCHESTER moved to reduce these hours from 44 to 40. Lord ASKWITH supported the amendment. He said that the hours of work which were laid down at present for such young people were too long, and the young persons had no chance of success for keeping their bodies fit and their minds clear. After a long discussion the amendment was negatived.

On Clause 109 (Employment of women and young persons in places other than factories in processes connected with lead manufacture or involving the use of lead compounds) an amendment was inserted on the motion of the EARL OF MUNSTER applying the clause to all persons who had not attained the age of 18.

Further drafting amendments were made, the schedules were agreed to, and the committee stage was concluded.

Marriage Bill

In the House of Lords on July 15 the Marriage Bill was considered on report. Lord MOYNE moved to omit Clause 1 (No divorce within three years of marriage and provision for cases of special hardship). After debate the motion to omit was defeated, and Clause 1 was retained with the amendment made in committee of the House of Lords reducing the period of delay from five years to three years. Minor amendments were also made in the clause on the motion of Lord Maugham.

RECURRENT INSANITY

On Clause 2 (Grounds of petition for divorce) Lord DAWSON OF PENN moved an addition to Subsection (*d*). This subsection

ran: "Is incurably of unsound mind and has been continuously under care and treatment for the period of at least five years immediately preceding the presentation of the petition." Lord Dawson moved to add at the end of this paragraph: "Or whose unsoundness of mind is established to the satisfaction of the Court to be of the recurrent type, provided that no petition can be presented until five years have elapsed since the respondent was first declared to be of unsound mind." Lord Dawson said his amendment referred to what he might call "shuttlecock cases"—patients who were in and out of an asylum all the time. It was not rare to find that one spouse had been in and out of an asylum ten times in twenty years, but not necessarily for the continuous period of five years. The cyclical cases were peculiarly distressing. They went back to their homes convalescent, but by no means cured. In the early days the healthy spouse was willing to put up with that, and his amendment suggested that no petition should be presented until five years had elapsed since the first attack of insanity. But after five years, when it was clear to the Court, which would take medical evidence, that this insanity was recurrent and might go on for twenty years, the petition should be favourably considered. The majority of such cases were incurable after the time mentioned in his amendment. It was therefore cruel to compel the healthy spouse after the lapse of a number of years to receive the convalescent patient into the home every time he or she came out of an asylum, and be subject often to treatments and degradations which were particularly felt in small homes. That the patients would know they were liable to be divorced would have no influence whatever at a late stage in these recurrent cases. Asked by Lord ATKIN what he meant by "first declared to be of unsound mind," Lord DAWSON said he meant certification, and he would rather have the phrase "full certification."

Lord GORELL said Lord Dawson was clear in his own mind as to the meaning of the recurrent type, but to anyone who was not a skilled medical man "recurrent" was a vague word difficult of interpretation. Furthermore the word "declared" introduced difficulty. There was no authority to declare anybody of sound mind.

The EARL OF MANSFIELD said the Bill introduced new dangers in respect of people in institutions and voluntary patients. He was chairman of the directors of one of the Royal Asylums of Scotland with an increasing number of voluntary patients. He was afraid unscrupulous persons would try to get their periodically insane partner certified insane to avoid the financial responsibility for maintenance.

Lord MAUGHAM said the certificate of a single medical man seemed an unsatisfactory way of determining whether the person should be divorced. Those who had experience of lunatic cases knew that some doctors would certify and others would stoutly decline to do anything of the kind.

Lord DAWSON replied that if his form of words was open to objection because it did not adequately fit his intention he was prepared to withdraw his amendment and reserve the right to give a better wording on the third reading. It was right and proper that after five years the scales of mercy should incline towards the afflicted spouse. There was no great evidence that the group to which his amendment referred would in the near future be so cured that they could become normal members of society.

The amendment was negatived.

INSANITY WITHIN TWELVE MONTHS OF MARRIAGE

On Clause 7 (New grounds for nullity) Lord SALISBURY moved to insert after the reference to epilepsy in this clause the words: "Provided that if either party to the marriage shall within twelve months after the marriage become manifestly of unsound mind or mentally deficient, that fact shall be prima facie evidence that such party was of unsound mind or was mentally deficient at the time of the marriage." He said it had happened and would happen again that insanity which was not obvious at the time of the marriage became obvious immediately afterwards, and the question arose of how far that ought to be held to make the marriage null. The amendment prescribed that if insanity became apparent within a certain period of the marriage that should be prima facie evidence—not conclusive evidence—that the consent was not a good one. The period proposed was twelve months, but that was a matter of detail, and if the House thought that too long Lord Salisbury would be glad to consent to a shorter period.

Lord DAWSON said he was afraid it would not be possible to carry out the proposal in the amendment. Some of the most difficult cases of insanity were insanities of pregnancy and childbirth, and twelve months would embrace a number of cases in that group. Many such insanities were curable and were often due to temporary causes, and injustice would be caused if an amendment of this kind were passed. Lord GORELL said the promotors of the Bill thought the difficulties of the amendment too great for it to be accepted. Lord Salisbury withdrew the amendment.

VENEREAL DISEASE

On the same clause in Subsection (c), which provides for nullity if the respondent was at the time of the marriage suffering from venereal disease, Lord Dawson had an amendment to insert the word "communicable." Lord ELTISLEY said those in charge of the Bill accepted the amendment. Lord GORELL suggested that the phrase should be "venereal disease in a communicable form."

Lord DAWSON accepted this phrase and moved his amendment accordingly. He said syphilis was not communicable from one spouse to the other, or only very rarely communicable, after a year had elapsed from the time of infection. It often ceased to be communicable quite early. In practice people who had been properly treated were permitted by some authorities to marry one year afterwards, and the very most that others required was two years. After that date, although syphilis might do damage to the person originally infected, it would not do damage by communication to anyone else. This further difficulty arose that there was a blood test for this disease. Suppose, for example, that one of the parties to a marriage was infected five years before the marriage. The disease would not be communicable at the time of the marriage, yet in some instances the blood test remained positive, although at the same time on other grounds it was certain that the disease was not communicable. The paragraph as at present worded might act with great unfairness and bring in confusion. The whole question could be settled by inserting the word "communicable" or "any form which is communicable."

Lord ATKIN asked whether a man could suffer from syphilis in such a way that he might hand it to his children and yet not communicate it to his wife. Voidability of marriage ought certainly to apply to a case where a man suffered from venereal disease which he was capable of handing down to his children.

Lord DAWSON said the blood test on the wife would be part of the evidence which would show that the wife was positive. The broad answer would be that it would be so rare as not to be worth bringing into the Act for a child to be infected without the mother being infected too, certainly as concerned the blood test of each.

The House then agreed to the amendment to add "in a communicable form."

Drafting amendments were made in subsequent clauses, and the report stage was concluded.

On the motion of the EARL OF DROGHEDA the title of the Bill was altered to the Matrimonial Causes Bill, 1937.

On July 19, in the House of Lords, the Matrimonial Causes Bill was read the third time by 79 votes to 28, and passed.

Ministry of Health and Treatment of Rheumatism

Answering, on July 8, an inquiry by Mr. Edward Dunn, who asked what measures the Minister of Health proposed to combat rheumatism, Sir KINGSLEY WOOD said treatment for this varied and complex group of diseases was available in most of the voluntary general hospitals and the general hospitals owned by local authorities, and there were a number of institutions which specialized in the treatment of certain rheumatic diseases. He would continue to give careful con-

sideration to this matter, but at present did not propose to introduce any special schemes which would supersede the progressive and increasing provision now being made to combat and study the disease, provision with which his medical advisers were in close association. He could not state the number of persons chargeable to the Insurance Fund through rheumatism nor the cost and the number of working days lost through the disease. Mr. TURTON asserted that mead was an effective palliative of rheumatism.

Insured Persons Not on Doctors' Lists

On July 8 Sir KINGSLEY WOOD told Mr. Joel that the number of persons who had been insured for twelve months without selecting an insurance doctor was not available, but the number of insured persons at any given time who had not selected a doctor although entitled to do so was about 495,000 in England and Wales. A recent sample investigation of the official records kept by doctors showed that 48 per cent. of the persons who had been on doctors' lists throughout 1936 had not been seen in the year, and that the number of attendances, including home visits, per patient seen during the year was 7.1.

Agriculture Bill: Veterinary Provisions

On July 12 the Agriculture Bill was considered by the House of Commons in committee. On Clause 18 (Veterinary Inspectors) an amendment to leave out the word "inspector" and to insert "officers" was withdrawn after an explanation by Mr. Ramsbotham.

Mr. MACLAREN moved an amendment providing that the Minister should appoint a chief veterinary officer who should be responsible directly to him for the organization of the centralized veterinary service and for supervising the duties to be discharged by the veterinary officers to be appointed. The purpose of the amendment, he said, was to bring into the Ministry of Agriculture a chief veterinary inspector or officer, who should be responsible to the Minister directly and should have the same technical control over the members of the staff as the Chief Medical Officer in the Ministry of Health. After some discussion and an explanation from Mr. Ramsbotham as to the arrangements that had been made, under which the work of administration would be the responsibility of the senior administrative officer while the chief veterinary officer would continue to be responsible for the control of the professional veterinary staff and advise the Minister on all questions connected with diseases of animals, the amendment was withdrawn.

Mr. AMMON moved a new subsection providing for the transfer and attachment to the Ministry of Agriculture and Fisheries veterinary inspectors or veterinary officers wholly or mainly engaged by a local authority. Mr. RAMSBOTHAM said it was the Government's declared intention to invite all whole-time officers to accept appointment under the Ministry, and to become civil servants; it was also the Government's intention to utilize the service of the part-time officers, as far as possible, but it could not concede to those officers the status of civil servants. After further debate, Mr. W. S. MORRISON said that the position of part-time officers would be improved under the Bill. Under the new arrangements they were bound to be more extensively employed. The amendment was negatived.

Mr. W. ROBERTS moved to leave out subsection (3), and asked for some statement as to which of the many functions of the present administrative system were to be transferred and which were to be left to the local authorities and charged to them. Mr. WEDDERBURN said that the services which were going to be transferred were the duties under the Tuberculosis Order, 1925, the routine veterinary inspection under the milk and dairies legislation, the tuberculin tests under the Milk (Special Designation) Order, and the diagnostic inquiries under Schedule D. There was a long list of services which would not be transferred, such as duties relating to the administration of the Diseases of Animals Act, receiving information from owners of diseased stock, etc. The amendment was withdrawn.

Mr. JOHNSTON moved a new clause providing that Part IV of the Bill should, in so far as it applied to Scotland, be administered in consultation with the Secretary of State for Scotland, and through the appropriate departments and officers under his control. Under the Bill the Milk and Dairies Act, the Attested Herds scheme, Milk Orders, etc., would be transferred to the Ministry of Agriculture in England. After a statement from Mr. Wedderburn the clause was negatived.

The committee stage of the Bill was concluded.

Inquiry into Sickness Benefit

On July 12 Mr. HEPWORTH asked the Minister of Health whether any special inquiry was being made by his Department into the alleged existence of an exceptionally large number of applications for sick benefit, especially among women. Mr. BERNAYS said that an investigation was being made by his Department, in conjunction with the Department of Health for Scotland, into the general question of the expenditure of approved societies on disablement benefit, but no conclusions had yet been reached.

Diphtheria Immunization

Mr. W. LEACH asked, on July 15, what methods were adopted by medical officers of health to ascertain whether or not diphtheria patients had been immunized, seeing that in the majority of immunizations no certificates were issued nor did the patients bear any marks to show that they had been immunized. Sir KINGSLEY WOOD replied that it was the practice of medical officers of health to keep records of the names of all persons immunized against diphtheria under arrangements made by the local authorities. He could not accept Mr. Leach's description of this immunization as a "highly dangerous and ill-chosen experiment."

Sir KINGSLEY WOOD further told Mr. Leach that, according to the information furnished by the Cardiff local authority, out of 14,523 children who had been inoculated up to the end of 1936, 195 contracted diphtheria. During the same period 2,918 cases of diphtheria occurred among all children under 15 years of age.

House Collections for Hospitals.—Sir SAMUEL HOARE, on July 1, told Mr. R. C. Morrison that there had come to the notice of the police evidence of door-to-door collections made in the metropolitan area by persons claiming to have authority to collect old clothes, newspapers, etc., on behalf of hospitals. Inquiries made from time to time had not revealed any grounds for action on their part. Mr. MORRISON suggested inquiries to ascertain to what extent, if any, the proceeds from such collections were paid to hospitals. Sir SAMUEL HOARE said that if Mr. Morrison had information suggesting that a breach of the law was being committed in any particular instance he would look into the matter.

Imported Cheese and Disease.—Mr. LIDDALL, on July 1, asked whether the Ministry of Health obtained official certification that the herds of goats from the milk of which imported gorgonzola cheese was made were free from disease; and whether imported cheeses from foreign sources were continuously tested at our ports of entry to prevent the sale here of cheese containing germs of undulant fever or Mediterranean fever or other diseases endemic among South European herds of goats. Sir KINGSLEY said such certification and inspection were not arranged, but the matter had not escaped attention, and on the evidence available no special precautions appeared to be necessary. Any germs which might exist were destroyed during the maturing of the cheese.

Treatment at Infant Welfare Centres.—Sir KINGSLEY WOOD told Mr. Sorenson on July 1 that although separate sessions were held at many infant welfare centres for children between 2 and 5 years of age it was not usually desirable to establish separate centres. Children of all ages up to 5 were seen at infant welfare centres, which numbered 3,368 in England and Wales on December 31 last. The primary purpose of these

centres was preventive and advisory, and children when necessary were referred elsewhere for the appropriate form of treatment.

Health Conditions of Offices.—Sir KINGSLEY WOOD told Mr. Creech Jones on July 1 that he had issued a circular urging local authorities systematically to exercise their powers under the Public Health Act, 1936, in respect of the health conditions of offices. In view of the procedure laid down by the Act it would not be appropriate for the Minister to recommend minimum standards of working conditions, nor any system of systematic inspection of offices.

Hairdressers Registration Bill.—The Hairdressers (Registration) Bill, which was introduced by Lord STRABOLGI in the House of Lords and read the first time on July 2, provides in Clause 21 that nothing in the measure shall prevent the exercise of any right or function by a registered medical practitioner or a registered chemist which he is entitled to exercise under any other Act. The Bill was introduced in the House of Commons last year, and since then there have been several changes in its provisions. The definition of hairdressing has been extended and the saving for doctors and chemists is a new clause. The date for the second reading debate has not been fixed.

Physical Standard of Recruits.—Replying to Sir Arnold Wilson on July 2 Mr. HORE-BELISHA said the physical standard required of recruits for line regiments was still equivalent to, if not higher than, that for a first-class life insurance policy.

Nursing Homes Registration.—Answering Mr. Rostron Duckworth on July 5 Sir KINGSLEY WOOD said by-laws under the Nursing Homes Registration Act, 1927, had been made by eighty-eight local supervising authorities in England and Wales and by forty-two district councils to which the necessary powers had been delegated. The information available was not sufficient to enable him to state the number of authorities which had not made by-laws. The few complaints received in his Department were normally referred to the local authorities responsible for the registration and inspection of nursing homes, and to which such complaints should properly be addressed.

Health of Mercantile Marines.—On July 6 Mr. CREECH JONES asked the President of the Board of Trade what arrangements existed in his Department for the study and prevention of unhealthy conditions of the mercantile marine; whether any medical officers in his Department were charged with this special responsibility; and to what extent consultation with the Ministry of Health on these matters was a practice of the mercantile marine section of his office. Mr. OLIVER STANLEY replied that there were three medical officers attached to the survey staff and close contact was maintained with the Ministry of Health and the port sanitary authorities. Questions relating to the general health of the mercantile marine were dealt with by an interdepartmental committee of the Board of Trade and Ministry of Health representatives. The plans of ships built in this country were examined, and any necessary steps were taken to ensure that the crew's accommodation conformed to the present standards of hygiene and comfort. Provisions for the maintenance of the accommodation were included in the instructions to surveyors on this subject, which had recently been revised and would shortly be issued. In addition, Board of Trade surveyors took every opportunity to inspect the crew's accommodation on ships in service.

Medical Treatment of "Deutschland" Casualties.—On July 6 Mr. MAGNAY asked the Secretary of State for War whether any charge would be raised against the German Government in connexion with the reception and medical treatment of casualties from the German battleship *Deutschland* in the military hospital, Gibraltar. Mr. HORE-BELISHA replied that no charge would be raised against the German Government in respect of a humane service which would always be readily rendered in such circumstances. The cost would be borne on Army funds.

Cost of Dental Benefit.—Sir KINGSLEY WOOD told Mr. D. J. B. Joel on July 8 that the cost of providing dental benefit as a statutory benefit could not be estimated with precision in the absence of reliable data regarding the number of insured persons who would apply for treatment. Such information as was available indicated that about 10 per cent. would apply for treatment each year at an average cost of about £4 per case. On this basis the cost would be approximately £7,000,000 a year. Dental benefit was provided as an additional benefit by 5,000 approved societies and branches in England and Wales with a total membership of 11,800,000, representing 75 per cent. of the insured population. The expenditure on this benefit in 1936 was about £1,750,000.

Shortage of Trained Nurses and Probationers.—Sir ROBERT RANKIN, on July 8, asked whether the attention of the Minister of Health had been called to the increasing shortage of trained nurses and probationers, and whether, in view of the great expansion of the hospital system and public health services of the country in the last ten years, he could state what steps were being taken to ensure an adequate supply of nurses during future years. Sir KINGSLEY WOOD said he had been informed that there was a shortage of nurses relatively to the increased demands for their services. The matter was receiving his close attention, and the associations representing local authorities were in communication with the General Nursing Council regarding certain measures for meeting the situation. Miss WILKINSON asked if the Minister had called the attention of the voluntary hospitals to the necessity for reducing the hours and increasing the wages of their nurses if they wished to get a sufficient number. Sir KINGSLEY WOOD said many hospitals were doing what they could about this important matter.

Midwifery Schemes in Wales.—Sir KINGSLEY WOOD told Mr. Temple Morris on July 8 that proposals under Section 1 of the Midwives Act, 1936, for a service of salaried midwives had been submitted by all the local supervising authorities in Wales, numbering nineteen. The Minister's formal sanction was not required to these proposals, but in three cases he had informed the authorities that in his opinion their proposals were satisfactory. In these and other cases the authorities were proceeding to put the proposals into operation. In some cases he was still in communication with the authorities.

Housing in Glasgow.—Dr. ELLIOT, replying to Mr. Buchanan on July 13, said that the number of houses in the Gorbals Division being dealt with under the Housing Acts as unfit for human habitation or at present on the Corporation's list awaiting such action was 1,773, and that the corresponding number a year ago was 1,799. The latest available information with regard to the number of over-crowded houses in the division was obtained as a result of the overcrowding survey at the end of 1935, when the number was 7,619. It was not possible to show separately the numbers of houses being built for slum clearance and for the relief of overcrowding, as the Corporation was dealing with these problems together, and the purpose for which particular houses were to be used was not determined till the houses were completed. On June 30, 1936, 2,437 houses were under construction, with State assistance, for slum clearance and the relief of overcrowding, while 1,318 had been contracted for but not begun. On June 30, 1937, 2,637 houses were under construction and 2,080 had been contracted for but not begun. On June 30 last year 250 houses were under construction and 98 had been contracted for, without State assistance, while on June 30, 1937, 202 such houses were under construction.

Mortality of Disabled Pensioners.—Mr. H. RAMSBOTHAM told Mr. W. Thorne on July 14 that the number of ex-service disability pensioners who died in the eight years ended March, 1937, was 56,468. The annual mortality rate was about 15.7 per 1,000 pensioners. Comparative figures were not available for the year ended March, 1930, but during the next seven years the average mortality rate of disability pensioners was 16 per 1,000, whereas that of the general male population of corresponding ages in England and Wales during the same period was approximately 10 per 1,000.

Supervision of Nursing Homes.—Miss RATHBONE asked, on July 15, what report had been made by the local authorities to the circular letter of September 30 last, in which attention was called to the importance of the adequate supervision of nursing homes. Sir KINGSLEY WOOD, in reply, said he had not called for a special report from local authorities on this subject. The circular requested the local supervising authorities to satisfy themselves that their arrangements for the inspection of nursing homes sufficed to ensure that the requirements of the Nursing Homes Registration Act were in all cases fully observed. Sir FRANCIS FREMANTLE: As the right hon. gentleman issues a circular every year advising the medical officers on what they should deal with in their annual reports, will he ask them to pay special attention to this matter, which has hitherto been very considerably neglected in many large areas?

Silicosis Claims.—In response to a request by Mr. James Griffiths on July 15, Sir SAMUEL HOARE furnished the following table:

Applications to the Silicosis Medical Board in the six months ended June 30, 1937, for Certificates under the Various Industries (Silicosis) Schemes

	Applications Received	Granted	Refused or Negative	Awaiting Decision
Death	48	32	14	2
Disablement or suspension	327	130	162	35
Separate particulars for anthracite miners for same period.				
Death	23	14	7	2
Disablement	114	56	45	13

Hours of Work in Ministry of Pensions Institutions.—Mr. KIRBY asked the Minister of Pensions the number of hours a week normally worked by the indoor and outdoor staffs respectively of those hospitals and institutions controlled by his department. Mr. RAMSBOTHAM said that the hours worked weekly by hospital staffs varied with different grades. Nurses' duties varied from fifty-seven to sixty-one hours a week for day duty and seventy-eight hours for night duty, both inclusive of meal times. Massage staff and x-ray assistants attended for thirty-six and thirty-five hours respectively, exclusive in both cases of meal times. Stewards, clerks, and orderlies were employed from forty-four to forty-eight hours, and domestics from forty-eight to seventy-two. The only staff on outdoor duties were orderlies employed as gardeners, ambulance drivers, etc., who were subject to a forty-eight-hour week.

Medico-Legal

DERMATITIS FROM HAIR TREATMENT

A Manchester lady, at the suggestion of her hairdresser, consented to try a preparation called "oloxo" instead of henna. After preliminary treatment "oloxo" was applied to her head, and the next morning she felt a burning sensation which grew worse. Her hairdresser unsuccessfully treated the dermatitis which developed, and then informed the proprietors, Oloxo, Ltd. A representative of the firm expressed great regret and advised the patient to see a doctor. The disease ran a very painful course; her head suppurated and her face became so swollen that she could not see for three days; her hearing was affected, she could not sleep, and a rash extended all over her body. Under treatment by a dermatologist the condition gradually improved. The patient brought an action against the hairdresser and Oloxo, Ltd., claiming damages for negligence, and the hairdresser sued Oloxo, Ltd., for an indemnity.

At the time of the action, which was tried by Mr. Justice Hilbery at Manchester Assizes at the beginning of July,[1] the patient gave evidence that she was still under treatment, could not do her housework, and was nervous and afraid to go out alone. She could not tolerate heat. She said she had paid the hairdresser half a guinea for the treatment and had only undergone it on the express promise that oloxo was harmless and would not affect her. She had general poisoning, and could not recover for at least six months. She had no predisposition to skin disease. The hairdresser testified that she had attended a series of classes given by Oloxo, Ltd., and their representative had assured the pupils that Oloxo was perfectly safe and had offered to indemnify them against claims for damages. She had never been told to make a test. She had used on the patient the method she had been taught.

At the end of the case for the patient and the hairdresser all parties agreed to continue the trial before the judge alone, and the jury was released. Counsel for Oloxo, Ltd., stated that the firm merely marketed oloxo, which was made in the United States. They dealt only with wholesalers and not with hairdressers, though they sometimes held local lectures to stimulate trade. The managing director admitted in evidence that there was always a possibility of danger to abnormal skins. The firm's booklet now advised that each customer should be tested, but at the time of the present accident it had contained no such instructions. The packets now bore a notice saying that the preparation might cause serious inflammation on the skin of certain persons and should be used only in accordance with expert advice. The notice had not been on the package at the time of the accident, but had been put on after consultation with the Home Office about the Poisons Rules. He admitted that he had distributed a preparation which he regarded as dangerous without a test, but had not said that a test should be made in every case. He believed that the hairdresser had been warned to make a test. The lecturer stated that he had always told students to make a test and had never represented oloxo as perfectly safe and harmless.

The learned judge found as a fact that the traveller of Oloxo, Ltd., had told the hairdresser the preparation was safe and that without this assurance she would not have ordered any. He had no doubt that she and the patient had intended that the assurance should be a warranty and an essential term of the contract for the application of oloxo. He came to the conclusion that oloxo was not safe for the purpose for which it was sold and that the company had known it was not safe. The damage to the patient was in the direct line of consequence from the breach of duty committed by Oloxo, Ltd. Nobody could tell without a test whether a customer would suffer or not. As they sold it for application to all heads and gave no warning that it was dangerous without a test, they must be held to be selling an article dangerous in itself. He was satisfied that the representative of Oloxo, Ltd., had assured hairdressers at lectures that the firm would indemnify them against any claim. The firm had gone back on this indemnity and it had not been made at a time when it could be part of the contract with the hairdresser; nevertheless, nearly all the hairdresser's costs had been caused by their repudiating it. He gave judgement for £520 damages for the patient against the hairdresser, and for the hairdresser against the firm.

[1] *Manchester Guardian*, June 30, July 1 and 2.

The Archbishop of Canterbury, speaking at the Mansion House at a festival dinner of the Princess Elizabeth of York Hospital for Children, said that following a gift of £10,000 by Mr. E. W. Meyerstein and an offer by Mr. S. Garton of his family home at Banstead, the new hospital was being built among the Surrey woods. The cost would be about £200,000, of which £70,000 was already available, but £130,000 had still to be raised in the next twelve months unless the work was to stop. Brigadier-General Sir Hill Child, chairman of the hospital, announced donations at the dinner totalling £5,701. The out-patients' department, emergency beds, and the old hospital buildings at Shadwell will be maintained and used as a clearing station. Patients will be transferred by ambulance to the new hospital.

Medical News

By an Order of the Committee of Privy Council, made after consultation with the Medical Research Council and with the President of the Royal Society, L. J. Witts, M.D., F.R.C.P., Professor of Medicine in the University of London and Physician to St. Bartholomew's Hospital, and G. E. Gask, C.M.G., D.S.O., F.R.C.S., Emeritus Professor of Surgery in the University of London, are appointed members of the Medical Research Council, in succession to Sir Thomas Lewis, C.B.E., M.D., F.R.C.P., F.R.S., and Sir David P. D. Wilkie, O.B.E., F.R.C.S., who retire in rotation on September 30.

The third congress of the International Society of Geographical Pathology will be held at Stockholm from August 5 to 7, when various aspects of anaemia will be discussed. Further information can be obtained from Professor F. Henschen, Caroline Institute, Stockholm.

The third International Congress for Medical Postgraduate Instruction will be held in Berlin from August 21 to 24. The meetings will be held in the Langenbeck-Virchow House, Luisenstrasse 58–59. Further information can be obtained from the general secretary, Professor Adam, Kaiserin Friedrich Haus, Robert Koch Platz 7, Berlin, N.W.7.

The King has approved the grant to the Institute of Hygiene of a supplemental Royal Charter giving it power to amalgamate with the Royal Institute of Public Health. The amalgamated bodies will be known as the Royal Institute of Public Health and Hygiene.

The Minister of Health, speaking at the Health Congress of the Royal Sanitary Institute at Birmingham last week, announced that the Prime Minister would inaugurate a National Health Campaign in October in London for the purpose of making the health services better known and getting them better used. The Prime Minister would be supported by leading men in all the parties. The slogan of the campaign would be "Use Your Health Services." There would also subsequently be meetings in large and small towns addressed by prominent men and women, and it was hoped to enlist the press, the wireless, and the films.

Dr. F. Murgatroyd, of the Liverpool School of Tropical Medicine, who is at present engaged on research work on sleeping sickness in West Africa, has recently been appointed assistant physician to the London Hospital for Tropical Diseases.

Dr. G. Jessel has been elected president of the North Western Tuberculosis Society after 18 years' service as hon. secretary. Dr. A. Fleming (11, Woodvale Road, Knutsford, Cheshire) has been appointed hon. secretary in succession to Dr. Jessel.

At the July meeting of the Central Midwives Board for England and Wales appointment as examiner was granted to Dr. Charles Henry Walsh; and Wellhouse Hospital, Barnet, and Park Hospital, Davyhulme, Manchester, were approved as institutions for providing instruction in the essentials of obstetric analgesia and in the use of a recognized apparatus.

The May issue of the *Bulletin de l'Office International d'Hygiène Publique* contains articles on malaria in Southern Serbia, sanitary and medical investigations in the Liberian Republic in 1935 and 1936, determination of blood groups, the campaign against contagious abortion in cattle in Norway, destruction of grasshoppers, and arsenical poisoning in workers.

By Wednesday afternoon 1,150 members had registered their attendance at the Annual Meeting of the British Medical Association in Belfast this week.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Finance Department.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are
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The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone 62550 Dublin).

QUERIES AND ANSWERS

Health Services in Holland

Dr. CHRISTOPHER ROLLESTON (Ketton, Stamford) writes: I have been looking at the statistics of the League of Nations and find that Holland is apparently the healthiest country in the world. The infant mortality rate is 34 per 1,000; pulmonary tuberculosis mortality 0.4, and so on. Is this well known to the profession in this country? If so, how is it explained? I have known for some time that their child-bearing figures are good, and I understand that their medical curriculum is longer than ours. What I am anxious to know is whether the health services in Holland have been developed extensively.

Agranulocytosis and Rheumatism

Mr. L. A. RIDDELL, F.R.C.S. (Redruth) writes: I should like to ask a question relevant to the paper by Dr. C. J. Young on "Agranulocytosis and Para-amino-benzene Sulphonamide" (*Journal*, July 17, p. 105). Has any connexion been noticed between rheumatic conditions and agranulocytosis or relative polymorphonuclear leucopenia, irrespective of the treatment given?

Income Tax

Liability to U.K. Tax

"D. B." lives most of his time in Ireland, but since July, 1936, following a postgraduate course, he has done locumtenent work in the United Kingdom. He intends to live either in Ireland or England according to the location of a suitable appointment. Is he liable to pay the United Kingdom tax or to be taxed by the Irish Free State?

*** He is liable to account for tax on his earnings here to the authorities in the Irish Free State until such time as he becomes resident—as distinct from occasionally resident in the United Kingdom—when he will become liable to tax in this country.

Commencing Employment

"ASSISTANT" had a hospital appointment from May, 1936, at £175 per annum "all found." He held it until August 13, 1936, earning (cash) £42, and then began as an indoor general assistant at £350 per annum, car and expenses provided. That terminated at May 8, 1937, and after a week's interval he took another appointment at £350 (indoor) plus an allowance of £50 for car expenses. What is his liability?

*** For the financial year ended April 5, 1937, he earned £42 + £225 = £267, and that is the gross amount of income for which he is assessable for 1936-7. As regards 1937-8 he will be assessable on the amount of his earnings for that year, and the declaration of income can be deferred until after April 5, 1938. In calculating his earnings from his

present employment he can either ignore the £50 car allowance or include it, and then deduct the running costs and depreciation of the car, but not instalments of purchase price, as they are capital outlay. As the assessments for each year will presumably be made after the financial year is over, the whole tax for that year will become due a few weeks after the assessment is made.

Gratuity on Leaving R.A.F.

"A. C. C." will be entitled to a gratuity of £1,000. Will this be subject to income tax if used to purchase a practice?

*** Payments made by way of gratuity to civil servants on retirement are not taxable, and we see no reason why similar treatment should not apply to an R.A.F. gratuity payable after only five years' service. "A. C. C.," however, might put the point to the assessing officer of the R.A.F. so that he would have an authoritative statement for future reference. The use to which the gratuity is put should not affect the question of taxability.

General Expenses—Rent, Rates, etc.

"A. C." refers to a table of expenses given in Professor A. L. Bowley's memorandum with regard to the Court of Inquiry's investigation into the capitation fee, and points out that two-thirds is included in the table for rent, rates, fuel, and light, whereas he has claimed only one-third for income tax purposes.

*** "A. C." has apparently misunderstood the nature of the expenses in the table—they refer to private, not professional, expenses. Consequently the two-thirds shown in the cost-of-living statement is consistent with the one-third which he has treated as a professional expense.

Payment for Guaranteeing a Loan

"R. D." refers to a previous reply on the above question—presumably one in our issue of December 8, 1934—and encloses a letter from his inspector of taxes which admits that the point is not covered by case law, but argues against allowing the deduction.

*** The statement of facts in the case of Ryall *v.* Hoare supports the view that when that case was taken to the High Court the Revenue had allowed the borrower to deduct the guarantee payment as an expense. But that fact was not relevant to the decision and the case has accordingly no validity as authority for the allowance. The chief difficulty is that the payments arise out of the financial position of the practitioner and not out of the circumstances of the practice, and this lends some support to the view that they are "capital" expenses and not incurred in carrying on the practice. In the absence of judicial direction the point is in doubt, and on its merits we are not prepared to advise "R. D." to take it to formal appeal.

Production of Balance Sheet

"E. S." has a sale practice and the inspector of taxes is "demanding" production of a balance sheet for the practice. Is this in order?

*** In our experience such requests are rare in the case of professional practices (where the amount of assets used in the work is usually relatively small) and is certainly not made where the assessments have been on the cash receipt basis. We suggest that our correspondent might point this out to the inspector and inquire for what special reason a balance sheet is required in his particular case.

Allowance for Bank Interest

"X. Y. Z." was unable to claim the special allowance for bank interest paid by him in the years ending April, 1931, 1932, and 1934 as his "profits were not large enough to be assessable." Can any allowance now be claimed for 1936–7 and 1937–8?

*** Only in respect of interest paid in those years. It has to be remembered that each financial year stands by itself, and relief for interest paid in any one year is due only against tax payable for the same year. (Where the interest can be treated as an "expense" it affects the following year, but in the long run the result is normally the same.)

LETTERS, NOTES, ETC.

Rheumatism and Influenza

Dr. F. E. GRAHAM-BONNALIE, the director of the Brighton Rheumatism Clinic, writes: With reference to the correspondence which has been appearing in your columns (*Journal*, June 26, p. 1352) regarding the incidence of influenza, during the last winter, among patients being treated with the Warren Crowe rheumatic vaccine, the following figures may be of interest to your readers. Of 138 people who have been interrogated this week and who had been receiving the vaccine treatment, twenty-four had influenza and 114 remained free. In the case of the 114 who remained free, there were twenty cases of influenza in their homes. Whether these figures afford any evidence of immunity conferred upon these patients would appear to depend upon the influenza incidence among the general population.

Droitwich Spa

Medical men who wish to advise special treatment for their patients do not always have ready at hand details about the facilities, social and medicinal, of the various spas in this country. We have recently received a well-illustrated pamphlet entitled *Droitwich Spa and the Treatment of Rheumatism*, in which full information is given of the therapeutic equipment available at Droitwich, an analysis of the water, and other information of use to the prospective patient and to his practitioner. It can be obtained by medical men free of charge on application to the Spa Director, Droitwich, Worcestershire.

Medical Golf

The Scottish Medical Golfing Society held its summer week-end meeting at Princes' Golf Club, Sandwich, on July 10 and 11. The results of the competitions were as follows. Singles *v.* Bogey: 1, Dr. Bruce Williamson (12) 3 down; Sir Lancelot Barrington-Ward, Drs. Bertram Shires, Keith Forbes, Desmond Curran, and Walter Maclay tied for second place with 4 down. Four Ball *v.* Bogey: 1, Drs. Bartleman and Curran, 5 up; 2, Drs. Maclay and Gordon, and Drs. Bruce Williamson and Keith Forbes tied at 3 up. The Medal Round was won by Dr. Curran (7), 73; Dr. Donald Paterson (18) was second with 75, and Mr. Rupert Scott (9) third with 76. The Silver Haggis for the best eclectic score was won by Dr. W. A. Low with 68 (86 less 18). In addition to the above there were various hidden prizes.

Digest of Treatment

In the *Journal* of July 10 (p. 73) we announced the appearance of a monthly review of therapeutics entitled *Digest of Treatment*. This is published by J. B. Lippincott Company, Washington Square, Philadelphia, but in this country the annual subscription of 25s. and any inquiries may be addressed to J. B. Lippincott Company, 16, John Street, Adelphi, London, W.C.2.

Corrigendum: One-eyed Pilots

Mr. J. MYLES BICKERTON'S letter on page 138 of our issue for July 17 contains an error which renders the table useless. The second column, group 3, should have read "6/6 or 100 per cent., *with* glasses." The table is here reprinted in its correct form:

Standards for One-eyed A Licence Pilots

Group	Good Eye	Other Eye
(1)	6/6 vision or 100 per cent., without glasses Normal field of vision Not colour blind	Blind Standard (Group 1 or Group 2 or Group 3)
(2)	6/9 or 90 per cent., without glasses Normal field Not colour blind	6/60 to 6/24 (with or without glasses) Field good
(3)	6/6 or 100 per cent., with glasses Normal field Normal colour vision	6/24 with correction Field good Binocular vision

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

62 Vitamin C in Haemoptysis

F. CAPELLI (*Riv. Patol. Clin. Tuberc.*, May 31, 1937, p. 317) has found ten daily intravenous injections of 50 milligrammes of ascorbic acid useful in certain haemoptyses due to pulmonary tuberculosis in a small series of patients. The method failed in two cases of haemorrhage accompanying a new extension of the tuberculous process proved radiologically, but it appeared strikingly successful in the prevention of regularly recurring haemorrhages in cases of long-standing fibrosis with cavitation, and it seemed effective when other treatments failed in cases of frequent small haemoptyses in those having minimal pulmonary foci of infection. In phthisis there is little alteration of the blood coagulation rate, and the haemostatic action of vitamin C would appear to be attributable to a regulatory effect on adreno-cortical and anterior pituitary hormones, combined possibly with a catalytic action on clotting ferments.

63 Zinc Fever

H. NATVIG (*Tidsskr. norske Laegeforen.*, May 1, 1937, p. 457) has investigated, under the auspices of the University Hygiene Institute in Oslo, the conditions in which zinc fever arises. It is due to the inhalation of particles of zinc oxide by workers in factories where zinc-containing metallic compounds are made. The author had no difficulty in finding more than 100 workers with a characteristic history of symptoms which overtook them only after they had left work and had reached home, and which consisted of headache, lassitude, shivering, an unpleasantly sweet taste, hoarseness, a sore throat, smarting in the eyes, and a sense of oppression in the chest followed in a short time by a rigor, with a temperature of 104° or more. After about two hours the patient would feel a pleasant sense of warmth followed by profuse sweating. As many as thirty-six patients had had one or more such attacks every week, some for several years. In every brass foundry inspected by the author in the course of two and a half years he has observed cases of zinc fever. In some works various precautions had been taken, including the installation of fans and the wearing of masks, but none had proved effective. Natvig concludes that the only successful method of prevention is to remove from the air breathed by the workers the particles of zinc oxide as soon as they are generated by the contact of vaporized zinc with the oxygen in the air. He has devised a movable funnel with a fan, which aspirates the zinc oxide as soon as it is produced.

64 Chronic Fibrous Adhesive Pericarditis

H. C. A. LASSEN (*Ugeskr. Laeg.*, May 27, 1937, p. 567) has compared the clinical records with the findings at necropsy on fifty-seven cases of chronic fibrous pericarditis observed in a Danish hospital between 1922 and 1934. During this time 1,601 medical cases came to necropsy, and the fact that from 2 to 3 per cent. of them showed adhesive pericarditis suggests that this condition is by no means rare. Thirty-two of the patients were men and there were only ten under the age of 40; as many as thirty-one were over 60. There was a record of rheumatic fever in twenty cases, and in only three had pericarditis been diagnosed before death. In seven cases tuberculosis of the lungs found post mortem had not extended to the pericardium, but there was one case of tuberculous mediastino-pericarditis without involvement of the lungs. In as many as forty-nine cases no tuberculosis could be found. Nine patients suffered from syphilis, and in forty-four cases the Wassermann reaction had been negative. Thirty-six of these patients were under weight. In twenty-nine cases some cardiac murmur had been detected, and in only seven cases had there been no signs or symptoms before death of heart disease. The author has come to the conclusion that in not one of these cases could operative treatment have achieved any success considering the extent and severity of the lesions found at necropsy.

65 Reinfection in Scarlet Fever

V. D. ALLISON and W. A. BROWN (*J. Hyg.*, Camb., April, 1937, p. 153) define the term reinfection as the secondary infection while in hospital of a scarlet fever patient with *Streptococcus pyogenes* of a serologically different type from that producing the first infection. Of forty-seven scarlet fever patients nursed in a multiple-bed ward and swabbed twice weekly, thirty-three (70.2 per cent.) became reinfected. In fifteen of these the reinfection gave rise to no clinical signs, while in the remaining eighteen it was accompanied by clinical signs or complications. Patients in cubicles or in wards containing cases of a single serological type did not show either reinfection or such complications. Most of the complications were due to reinfection, which occurred in the third week when patients were convalescent. Most commonly reinfection was by the direct contact of patient with patient. The writers suggest that scarlet fever patients should be nursed in separate cubicles, or at least by the bed-isolation method in multiple-bed wards.

66 Diphtheria Carriers

M. MITMAN (*J. prev. Med.*, May, 1937, p. 249) states that a large number of individuals carry diphtheria bacilli temporarily; they are no danger to others and are developing their own immunity. He therefore deprecates the unsystematic hunting out of carriers by indiscriminate swabbing, and regards it as more practical to make local conditions the sole criterion for such investigations. He urges that in every carrier and in every doubtful case of diphtheria virulence tests and Schick tests should be performed for the purpose of classifying and of separating all carriers.

Surgery

67 Endocrine Treatment of Breast Conditions

DESMAREST and CAPITAIN (*Presse méd.*, May 26, 1937, p. 777) point out that recently efforts have been made to trace a connexion between ovarian dysfunction and the various diseases of the mammary glands. Lesions of the breast range in severity from simple congestion, which often precedes menstruation, to lesions of the connective and epithelial tissues. Massive glandular hypertrophy and the development of chronic mastitis are benign lesions, but it is not known to what extent they contribute to the later development of malignant disease. Opinion differs as to the treatment of these breast lesions, but the authors consider that, while an unnecessarily mutilating operation should be avoided, some limited form of operative treatment is perhaps advisable in cases of large and painful cysts. Generally, however, surgical excision has now largely given place to treatment by intramuscular injections of acetate of testosterone, a male hormone which has been isolated from the testicles of bulls. Particulars are given of seventeen cases which included instances of congestion, hypertrophy, nodular glands, and cystic degeneration. These patients were all treated by injections of testosterone, and there was only one failure which occurred in a woman of 47 years who had suffered for

a long time from bilateral Reclus's disease. It is suggested that testosterone acetate may be of value in the relief of pre-menstrual congestion, in preventing the development of chronic mastitis, in bringing about the diminution and disappearance of adenomatous nodules, and in relieving pre-cystic disease of the breast. In cases in which the cyst is large puncture should precede injection, and the authors believe that this procedure will eventually take the place of mutilating operations in the treatment of cysts occurring in young women.

68 Osteoporosis Circumscripta

H. H. KASABACH and A. B. GUTMAN (*Amer. J. Roentgen.*, May, 1937, p. 577) review forty-seven cases of osteoporosis circumscripta of the skull and discuss its relationship to Paget's disease of bone. The affection usually begins with the appearance of small rounded circumscribed areas of osteoporosis, often in the frontal region near the base, sometimes in the occipital region, and occasionally elsewhere. These areas expand over a period of years until the major portion of the calvarium or the entire calvarium is involved. Often several foci appear independently in both the frontal and occipital regions, and as the process extends they become confluent. Since the initial foci originate near the base the last remnant of normal bone is most likely to be in the parietal region posterior to the vertex, producing a characteristic design in the lateral radiograph of the skull. In thirty-two out of the forty-seven cases osteoporosis circumscripta of the skull was associated with Paget's osteitis deformans affecting bones other than those of the skull. In eighteen cases the skull was the site of both osteoporosis circumscripta and the "cotton-wool" shadows characteristic of Paget's disease. In the majority of cases there were no clinical symptoms, but in some cases there was headache, vertigo, migraine, and epileptiform attacks. In seventeen out of eighteen cases in which chemical analyses of the blood were carried out the serum calcium and inorganic phosphorus were within normal limits. Pathological examination of the affected bone revealed a condition identical with that described by Schmorl under the name of "haemorrhagic infarction of the calvarium." In seven cases the osteoporosis circumscripta of the skull was associated with tumours of the maxillary bone, and in all these cases the adjacent frontal bone was the site of the osteoporosis.

69 Deep Infection of the Neck

L. C. BOEMER (*Arch. Oto-laryng.*, Chicago, April, 1937, p. 465) reviews seventy-five cases of deep infection of the neck, twenty-six in adults and forty-nine in children. There were two deaths in the series, both among the adults. One was a woman, aged 22, who had a peritonsillar abscess complicated by jugular bulb thrombosis and osteomyelitis of the sphenoid bone, and who died from basal meningitis. The other fatality was due to complications following a neglected chronic purulent mastoiditis. At necropsy thrombophlebitis of the lateral sinus and of the internal jugular vein were present, and there was also extensive erosion of the wall of the internal carotid artery without actual rupture. An extension of infection from the lower third molar accounted for the condition in one-third of the adult cases. Suppuration of the retropharyngeal glands or of the deep cervical glands accounted for it in the forty-nine children, and they all recovered. The great danger is an infection of the pharyngomaxillary and parapharyngeal spaces with involvement of the great vessels of the neck. Early adequate drainage by external incision is necessary, and the author recommends thorough exploration through a T-shaped incision, the main surgical landmarks being the greater horn of the hyoid bone and the tip of the styloid process. The great vessels must often be followed upwards to the base of the skull and downwards along the whole extent of the carotid sheath.

Therapeutics

70 Ammonium Mandelate in Urinary Infections

C. L. DE JONGH (*Nederl. Tijdschr. Geneesk.*, June 12, 1937, p. 2721) records his observations on twenty patients, fourteen of whom were suffering from simple pyelitis and six from pyelocystitis, treated by ammonium mandelate in doses of 12 grammes daily. The best results were obtained in the cases of chronic relapsing *B. coli* pyelitis in which the temperature was below 102.2° F. The drug is contraindicated when the renal function is defective, and the results were unsatisfactory in the presence of retention of urine.

71 Intravenous Caffeine

R. MARTINETTI and A. FORCONI (*Policlinico*, Sez. Med., June 1, 1937, p. 286) record their observations on the effects of the intravenous injection of caffeine sodium benzoate in twenty-six patients. There were fourteen cases of hypertension, one of diabetes mellitus, and one of diabetes insipidus, while ten were normal from the renal, circulatory, and metabolic points of view. The doses ranged from 0.24 to 0.48 gramme, and the results were as follows: (1) There was a rise of the systolic blood pressure, most marked in cases of hypertension, immediately after the injection, with a rapid return to the original level; (2) there was immediate but transient tachycardia, most pronounced in the cases with hypertension; (3) in the cases with hypertension a slight degree of hyperglycaemia was frequent; and (4) there was an increase of diuresis with a greater elimination of urea and chlorides than usual.

72 Acetyl-beta-methylcholine

A. MYERSON, P. G. SCHUBE, and M. RITVO (*Radiology*, May, 1937, p. 552) have studied the effect of acetyl-beta-methylcholine (mecholyl) on the tone and motility of the colon. Tone and motility were both definitely increased in every case, though the effects were rapidly abolished by atropine. The authors suggest the possibility of using mecholyl in the treatment of atony of the colon.

Dermatology

73 Lupus in Brazil

J. RAMOS E SILVA (*O Hospital*, Rio de Janeiro, May, 1937, p. 569), who records a personal case, states that lupus vulgaris is excessively rare in Brazil. According to H. Portugal only eight examples were found among 3,183 dermatological cases selected for their rarity. Although it is rare to meet with cases of lupus in sanatoria and dispensaries for tuberculosis, the proportion of cases with concomitant pulmonary tuberculosis is fairly considerable—namely, 30 per cent. (Bruusgaard), 21.5 per cent. (Martenstein), and 42 per cent. (Volk). According to the recent investigations of Funk, which confirm previous researches, lupus is caused by bacilli of the human type in 78.4 per cent. and by those of the bovine type in 21.6 per cent. Before the age of 20 the proportion of the bovine type is higher—44.4 per cent.—and this is attributable to milk-borne infection. Up to the age of 16 Griffith found the bovine type in 52.9 per cent. Cases due to the avian type of tubercle bacillus are extremely rare, one having been recorded by Saenz and another by Nicolau and Blumenthal. The number of tubercle bacilli in the lesions is always small, and they are difficult to detect. Inoculation of guinea-pigs is occasionally unsuccessful. The highest proportion of successful results is obtained by Lowenstein's medium. The nasal mucous membrane appears to be the most accessible portal of entry of infection, which accounts for the high proportion of localizations in the centre of the face. In 59 per cent.

of Funk's cases the initial lesion was found in the nose. Silva's case was that of a youth, aged 19, who was the subject of congenital syphilis, with lupus of the nose and face of the ulcero-vegetative type.

74 Dermographism

E. DICKER (*Brux. méd.*, June 13, 1937, p. 1212) points out that dermographism following external stimulation is due to a triple response of the cutaneous capillaries—namely, vasoconstriction, vasodilatation, and the appearance of oedema. Clinically several types are recognized occurring alone or in combination with one another. Dermographism may occur in the form of red or white wheals, erythematous zones, or large elevated areas. All the types have in common a latent period between the stimulation and the reaction, and none of them are pathognomonic of any condition. Dicker believes that dermographism is the result of a non-nervous reflex, and he argues that after a nervous reflex the latent period would be short and always of the same length. In this condition, however, the latent period is relatively prolonged and varies in each individual or in the same person at different times. Further, the latent period lasts longer in individuals with dysfunction of the endocrine glands, such as hyperthyroidism, than in normal persons. The author admits that, although dermographism may occur in areas to which the nerve supply has been cut off, the nervous system may help to produce it, for in hemiplegics the latent period is prolonged on the affected side. It has been shown experimentally that body cells at rest are in a state of electrical equilibrium, but that stimulation of them brings about a change of the potential, and also in the permeability of the cells, and it allows substances normally retained by them to pass through. According to Dicker it is this fact which accounts for the presence of oedema in dermographism and for the dilatation of the capillaries due to a substance similar to histamine called "H." He points out that the effect of stimulation on the cells resulting in a change of electrical equilibrium and permeability must be considered as a general process governing the formation of all inflammatory exudates, and possibly as explaining the occurrence of albuminuria.

75 Dermatomyositis

T. M. GREENAWAY and C. G. LAMBIE (*Brit. J. Derm. Syph.*, May, 1937, p. 209) report two cases of dermatomyositis observed at the Royal Prince Alfred Hospital, Sydney, both of which showed a remarkable similarity of symptoms and died within two years of the onset of the disease. All kinds of treatment were tried without avail. A striking feature in both cases was the heliotrope discoloration of the upper lids. The patients presented oedema of the face and limbs, and weakness, tenderness, and finally wasting and contracture, chiefly of the limb flexors. All the lesions were remarkably symmetrical. The rash was of the erythematous type with extensive scaling. The authors have been unable to discover the cause of the affection, and all available tests showed that the disease had no nutritional or allergic basis. No micro-organism could be found in the blood or affected tissue, and an attempt to discover a virus by animal inoculations proved fruitless.

76 Cutaneous Tuberculosis

H. A. MANIAR (*Med. Bull.*, May 15, 1937, p. 296), who reviews tuberculous conditions of the skin, finds that miliary tuberculosis is rare and particularly affects children. It occurs as a papulo-vesicular rash with scale or crust formation, and biopsy proves its nature; the prognosis is bad. Tuberculosis cutis orificialis occurs as an acute ulcer in patients with visceral disease. The ulcers, which are painless and do not tend to heal, are shallow with thin undermined edges, circular in outline and with enlarged neighbouring glands. Radiotherapy is valuable in this condition. Verruca necrogenica is due to direct inoculation of the tubercle bacillus. Creosote and 33 per cent. salicylic acid plasters or *x*-ray exposures, followed by radiotherapy, are useful. Scrofulodermia is treated surgically, the infected glands and skin being widely removed. Skin grafts may be required when primary union is impossible. In the treatment of chronic tuberculous ulcers the part should be kept at rest and antiseptic dressings applied. Small repeated doses of *x* rays aid healing. In the treatment of lupus vulgaris Maniar advocates Gerson's diet, which is poor in common salt and rich in vitamins and minerals. He believes that ultra-violet-ray therapy over the whole body as well as directly to the lesions offers the best hope of cure. Radium and *x*-ray exposures, freezing with carbon dioxide snow, creosote and salicylic plasters, and painting the lesions with caustics are possible measures. Chemotherapy and surgical intervention are now out of date. In all cases of tuberculosis of the skin general treatment of the condition must never be neglected.

77 X-Ray Carcinogenesis

S. LABORDE (*Rev. Physiothér.*, March–April, 1937, p. 89) points out that although the occurrence of cancer in radiologists has long been known, cases of cancer formation following the therapeutic administration of *x* rays are infrequent owing to the fact that patients are rarely subjected to graduated applications over a sufficiently long period. He reports four such cases occurring eleven, fifteen, eighteen, and twenty-one years after treatment, and in all of which histological examination showed a spino-medullary epithelioma. The first case had had numerous applications over a period of four years for eczema of the hands, the second several applications for hair on the face, the third *x*-ray administration to the spinal column for paraplegia, and the fourth fifteen applications over two years for facial angioma. The first patient was cured by amputation, the second by three applications of radium, the third is becoming worse in spite of radium therapy, and the fourth died. Laborde points out (1) that chronic radio-dermatitis produced by whatever type or quality of irradiation is a precancerous lesion; (2) that although the causal factor after a long latent period was in each case *x*-ray administration, nothing is known of the nature of the phenomenon which suddenly produces malignant growth in tissues, modified in structure and physiology after so many years; (3) that cicatrization and cure may follow the application of radium provided that the cancer is surrounded by sufficient healthy tissue, for the radio-sensitivity of cancers depends on the action of the rays on the neoplastic cells and on the medium in which they develop.

78 Eczema from Trees and Shrubs

V. GENNER and P. BONNEVIE (*Nord. med. Tidskr.*, May 29, 1937, p. 847) consider that when epicutaneous tests are carried out in a search for the cause of any obscure case of eczema the leaves of certain trees and bushes should be examined. They record in detail certain cases in support of this suggestion. One of their patients was a night watchman, aged 35, on whose face and hands eczema had recurred for some years every summer, disappearing again in the winter. At the hospital he attended his condition was regarded as the effect of sunlight, and it was not until epicutaneous tests with the leaves of various trees, bushes, and plants were carried out that he was found to be sensitive only to elm leaves, and it was then learnt that during his night rounds he had to brush through a tangle of elm boughs. The authors have tested sixty-seven patients, most of whom suffered from various forms of eczema, with elm leaves, and they found as many as seventeen who gave a positive epicutaneous reaction, usually within forty-eight hours. The reaction varied in severity, and consisted in some cases only of redness. In others papules appeared or there was slight infiltration. In another of the authors' patients eczema was traced to magnolia leaves.

Obstetrics and Gynaecology

79 Spontaneous Symphysiolysis

G. SCHAAP (*Nederl. Tijdschr. Geneesk.*, May 29, 1937, p. 2510), who records an illustrative case, states that spontaneous symphysiolysis is a very rare occurrence. Wishne and Mayer quote three series of statistics according to which it was seen only once in 30,000 deliveries, four times in 80,000, and three times in 94,000. During pregnancy, owing to the increased blood supply in the pelvis, the ligaments of the different joints become loose, so that an increased mobility of the symphysis and sacral joints develops, and the symphysis can be moved 5 mm. in a horizontal and vertical direction. The symptoms are as follows: (1) There is pain in the symphysis and lower part of the back, sometimes radiating down the thighs; (2) the patient is unable to lift or move the legs, and (3) she has a waddling gait. These symptoms are so characteristic that the diagnosis can be made without *x*-ray examination. Treatment should always be conservative, consisting of absolute rest in bed for four to six weeks according to the severity of the case. Schaap's patient, in whom spontaneous symphysiolysis occurred during delivery, was a woman, aged 25, in whom spontaneous necrosis had occurred in the mesial sesamoid bone of the left hallux a year previously.

80 Genital Malformations

H. HUBER (*Zbl. Gynäk.*, May 22, 1937, p. 1229) draws attention to the combination of genital malformations with malformations of the uropoietic system. In every instance of genital malformation, therefore, the kidneys and ureters should be investigated. The author describes the case of a woman of 23 in which a laparotomy revealed the absence of half the uterus, the corresponding tube, the ovary, and the broad and round ligament. Further investigation revealed the absence of one kidney and of its ureter. The correlation of these anomalies is of importance in view of a possible renal insufficiency in case of pregnancy.

81 Perforation of the Uterus

M. MOLNÁR (*Zbl. Chir.*, May 29, 1937, p. 1270) describes two cases of perforation of the uterus; one which was the result of an attempted criminal abortion, while the other was due to the use of a ball forceps for emptying the uterus following an abortion provoked by quinine. In both cases the perforation was covered up by a loop of the small intestine. In the first instance symptoms of perforation with peritonitis appeared five days after the rupture, and in the second ileus developed three days afterwards.

Pathology

82 Vitamin Toxicology

K. SCHÜBEL (*Med. Welt*, May 22, 1937, p. 705) draws attention to the fact that certain of the known vitamins are very toxic and give rise to hypervitaminosis when given in large doses. Hypervitaminosis A has not yet been reported in human beings because the therapeutic range of vitamin A preparations is great. It has been produced in rats and guinea-pigs, however, giving rise to lowered metabolism, haemorrhagic rhinitis, conjunctivitis, diarrhoea, and cramp The daily administration of yeast, 0.5 to 1 gramme, hinders the loss of weight; vitamin C inhibits hypervitaminosis A, and thyroxine causes the symptoms to disappear. Hypervitaminosis B, while not occurring in humans, has been noted in experimental animals, giving rise to such mild symptoms as anorexia, increase of the *p*H of the urine, and a certain minor nervous phenomena. Hypervitaminosis C does not exist, for this vitamin is rapidly eliminated through the kidneys even when large doses are administered. Vitamin D is definitely toxic when given in large doses, and Schübel points out that the therapeutic dose is very little less than the toxic dose. In experimental animals anorexia, loss of weight, diarrhoea, hypercalcaemia with coexisting demineralization and finally death occurred after the administration of toxic doses. Post mortem extensive calcification of the blood vessels, the heart muscle, the kidneys, and the stomach was found, and atrophy of the liver and thymus was noted. The animals were usually sterile, but in some hypervitaminosis was hereditary and the offspring malformed and dwarfed. In those with hypervitaminosis D there appeared to be an increased tendency to malignant tumour formation. Several cases of hypervitaminosis D in children have been reported, though children suffering from rickets are apparently the most immune. The administration of large doses of vitamin B compensates for toxic doses of vitamins A and D. Loss of weight following the administration of vitamin D may be prevented by the administration of vitamins B and C. Vitamin A prevents the occurrence of hypervitaminosis D. Vitamin D is eliminated through the bowel, but not the kidney. Damage to the blood vessels through hypervitaminosis D is progressive even when the doses are discontinued and other attempts are made to overcome the toxic symptoms. In view of this fact and of the widespread use of vitamin D products the author advocates the greatest care in its administration.

83 Bone Marrow Sampling

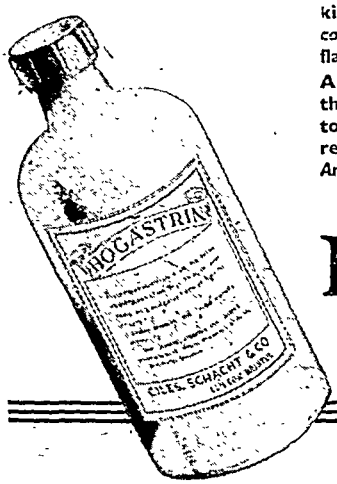
G. L. WELLER (*J. Lab. clin Med.*, April, 1937, p. 752) describes a method of sampling the sternal bone-marrow by means of a No. 18 gauge spinal needle, which has the advantages over trephining in that it is easy, requires little healing, and can be repeated as desired, and over aspiration in that it avoids admixture with blood. The skin and periosteum over the lower sternum are anaesthetized and the spinal needle with the stylet in place is inserted into the manubrium. When the marrow cavity is entered the stylet is withdrawn and the needle pushed in for about 0.5 to 1 cm. further, after which the needle is withdrawn. Following withdrawal the sample of marrow is pushed to the point of the needle by means of the stylet, and smear films are prepared on glass slides for fixing, staining, and examination. Alternatively the sample can be fixed and sectioned.

84 Serum Cholesterol in Peptic Ulcer

F. M. OFFENKRANTZ and F. FERARU (*J. Lab. clin. Med.*, May, 1937, p. 780) have studied the total and free cholesterol content of the serum in fifty-nine cases of peptic ulcer, of which seven were gastric and fifty-two duodenal, in forty-five male and fourteen female patients whose ages ranged from 22 to 71 years, forty-six of them being between 30 and 50. All the cases examined radiographically showed either deformity of the mucosa or an ulcer crater. Blood samples were collected after a minimum of ten hours' fasting and the serum cholesterol value determined by a modification of the method of Schoenheimer and Sperry. The authors found a mean serum total cholesterol content of 160.8 $\pm$ 38.7 mg. per 100 c.cm. with a range of 98.1 to 300 mg. per 100 c.cm., compared with Sperry's values for normals of a mean of 209.8 $\pm$ 48.6 and a range of 131.5 to 392 mg. Tested statistically, the values for the serum total cholesterol content in cases of peptic ulcer were significantly lower than the normal. There was also a higher proportion of free cholesterol, showing that the fall in the total value was due in greater measure to the decrease in ester cholesterol than to the fall in uncombined cholesterol. The authors were unable to find factors in individual cases that would consistently account for the values obtained therein, but they inferred that the lowering of the cholesterol values in the cases studied was related to the occurrence of ulceration.

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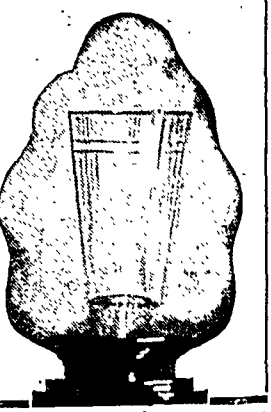
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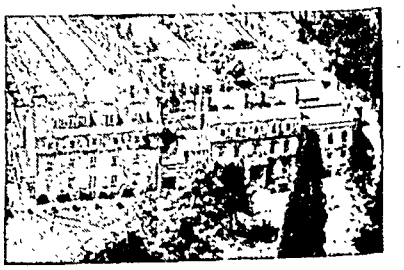
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BEHNKE METHOD.—Estab. 1880. Cases non-resident, treated at 39, Earl's Court Sq., S.W.5, and in residence, in the Summer holidays at MISS BEHNKE'S house on the Chilterns. "Pre-eminent success in education and treatment of stammering and other speech defects."—"Times." "Thoroughly physiological principles."—"Lancet." "The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."

Stammering, Cleft Palate Speech, Lisping, 3/9 of MISS BEHNKE, 39, Earl's Court Sq., S.W.5.

DIPLOMA IN ANAESTHETICS—D.A.
DIPLOMA IN CHILD HEALTH—D.C.H.

Courses of Postal and Oral preparation for these examinations may now be commenced.

For full details write to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

ADVICE ON THE CHOICE OF SUITABLE SCHOOLS AND TUTORS

for BOYS and GIRLS with prospectuses of recommended establishments will be given free of charge to parents stating age of pupil, district preferred, range of fees and type of school required

J. & J. PATON
143, Cannon Street, London, E.C.4.
Publishers of
Paton's List of Schools & Tutors. Post free 5/6.

EXPERIENCED COACHING IN PHYSIOLOGY, Pathology, and Medicine, by M.D. Lond. (Hons.), M.R.C.P.Lond., B.Sc., Physiology, Lond. All exams. Classes held.—Address, No. 7502, B.M.A. House, Tavistock Square, W.C.1.

UNIVERSITY OF BIRMINGHAM. FACULTY OF MEDICINE.

(Associated with the General, Queen's and Special Hospitals for Clinical Teaching.)

THE NEXT SESSION OPENS ON OCTOBER 4th, 1937.

The University grants Degrees in Medicine, Surgery and State Medicine, and a Diploma in Public Health: also Degrees and a Diploma in Dental Surgery.

The Courses of instruction are also adapted to meet the requirements of other Universities and Licensing Bodies.

HOSPITAL APPOINTMENTS.

A large number of Resident Hospital appointments in Birmingham and District are open to qualified students of the School.

SCHOLARSHIPS, EXHIBITIONS AND PRIZES.

Entrance and other Scholarships and Exhibitions and various Prizes and Medals are awarded annually in the Faculty of Medicine, full details of which are in the Faculty syllabus.

SCHOOL OF DENTISTRY.

(University of Birmingham and Birmingham Dental Hospital).

The School of Dentistry, in conjunction with the General and Queen's Hospitals, affords a complete curriculum for the Dental Diplomas and Dental Degrees of the University and all other Licensing Bodies. A Dental Scholarship of the value of £46.17 6, tenable for one year, is offered annually.

PRE-REGISTRATION MEDICAL AND DENTAL EXAMINATIONS.

The necessary courses of Instruction in Chemistry, Physics and Biology may be attended in the University

For syllabus and further information apply to the Registrar

STANLEY BARNES, M.D., D.Sc., F.R.C.P.,
Dean of the Faculty of Medicine.

UNIVERSITY OF BRISTOL

Provided that sufficient applications are received a

POST-GRADUATE COURSE

on the

MODERN TREATMENT OF FRACTURES

will be held at the BRISTOL ROYAL INFIRMARY on AUGUST 16th-20th. Demonstrations and Lectures will be given by Professor E. W. Hey Groves, Mr. K. H. Pridie and Mr. F. W. Willway. Opportunity will be given for the reduction of fractures under supervision. The fee for the course will be £3 3s. 0d., payable in advance. The number attending the course will be limited to twenty. Applications should be made to The Director of Post-Graduate Studies, University of Bristol, Canynge Hall, Whatley Road, Bristol, 8, from whom further particulars may be obtained.

NORTH-EAST LONDON POST-GRADUATE COLLEGE.

PRINCE OF WALES'S GENERAL HOSPITAL, N.15

The Practice of the Hospital is limited to Medical Practitioners. Particulars from J. BROWNING ALEXANDER, M.D., Dean

DIPLOMA IN CHILD HEALTH

CLASSES and INDIVIDUAL TUITION for October Examination by Registrar, London Children's Hospital. Coaching also for Paediatric sections of M.M. and M.R.C.P.(Edin.). Address No. 5342, B.M.A. House, Tavistock Square, W.C.1.

UNIVERSITY OF GLASGOW.

LECTURESHIP IN HUMAN EMBRYOLOGY AND HISTOLOGY.

The University Court invite applications for the vacant Lectureship in Human Embryology and Histology in the Department of Anatomy. Initial salary £500 to £600 per annum (subject to superannuation provision) according to experience and qualifications. Applications (five copies), which should give particulars of training and experience and the names of referees acquainted with the candidate's work, should reach the undersigned not later than August 6th, 1937. Further particulars will be sent on request

J. S. MUIRHEAD,
July, 1937. Secretary of University Court

COUNTY OF KINCARDINE.

The County Council invite applications for the post of DEPUTY MEDICAL OFFICER OF HEALTH from medical men of not less than five years' standing and not over 40 years of age, with experience of maternity and child welfare, school and tuberculosis services. Salary from £600 to a maximum of £750, with placing according to experience, and increments of £25 per annum. Conditions of appointment and forms of application may be obtained from the COUNTY CLERK, Stonehaven

BRITISH EMPIRE CANCER CAMPAIGN.

A STUDENTSHIP is offered to a young graduate in medicine or science desiring experience in the experimental study of malignant growths from the biological, and particularly from the virus aspect, with a view to undertaking independent investigations later in this field.

Consideration will be given to any special interest or experience submitted by candidates—e.g., previous training in histopathological or immunological methods, or in pathological and physiological chemistry.

The selected candidate will be attached to the Lister Institute of Preventive Medicine. The Studentship will be tenable for three years, but subject to annual renewal on report of satisfactory progress. The value of the Studentship will be £300 for the first, £350 for the second, and £450 for the third year if the selected candidate is medically qualified, and £250, £300 and £350 if the candidate holds a degree in science.

Applications, with full particulars of academic and postgraduate career, together with names of two referees familiar with the candidate's career and work, to be sent to the General Secretary, British Empire Cancer Campaign, 11, Grosvenor Crescent, London, S.W.1, before September 7th.

UNIVERSITY OF WALES.

THE WELSH NATIONAL SCHOOL OF MEDICINE.

JUNIOR ASSISTANT IN THE SURGICAL UNIT.

Applications are invited for the full-time post of Junior Assistant in the Surgical Unit in The Welsh National School of Medicine, Cardiff. The appointment is for a period of two years at a salary of £450 per annum, but may be extended in certain circumstances. The Person appointed will be required to commence duties on OCTOBER 1st, 1937.

Further particulars may be obtained from the undersigned, by whom six copies of application, accompanied by copies of not more than four testimonials, must be received by AUGUST 14th, 1937.

Selected candidates will be required to attend for interview on TUESDAY, AUGUST 17th, 1937.

S. C. EDWARDS,
Secretary.

The Welsh National School of Medicine,
The Parade, Cardiff. July, 1937.

UNIVERSITY OF LONDON.

The Senate invite applications for the UNIVERSITY READERSHIP IN BACTERIOLOGY, tenable at the British Postgraduate Medical School. Initial salary £800 a year. Applications (12 copies) must be received not later than first post on September 15th, 1937, by the Academic Registrar, University of London, W.C.1, from whom further particulars should be obtained.

LANCASHIRE COUNTY COUNCIL.

BIDDULPH GRANGE ORTHOPAEDIC HOSPITAL.

Applications are invited from duly qualified and registered medical practitioners (unmarried) for the post of SENIOR HOUSE SURGEON at the above Hospital, which contains 88 beds. Salary is at the rate of £250 per annum, together with board, residence and laundry.

Candidates must have had experience in a General Hospital, and preference will be given to candidates who have had orthopaedic experience.

The appointment will be for a period of six months in the first instance and for a further six months at the option of the Council, but will not be renewable after that time.

Applications, with copies of two recent testimonials, should be sent not later than August 2nd, 1937, to Dr. F. Hall, School Medical and Child Welfare Department, County Offices, Preston.

Duties to commence October 1st, 1937.

GEORGE ETHERTON,
Clerk of the County Council

CITY OF BIRMINGHAM.

Public Health Department.

Little Bromwich Hospital for Infectious Diseases.

JUNIOR RESIDENT MEDICAL OFFICERS (male).

TWO JUNIOR RESIDENT MEDICAL OFFICERS (male) required. Candidates must be unmarried and must have held previous resident posts in General or Children's Hospitals.

Salary at the rate of £300 per annum, together with board, etc., valued at £150 per annum. These appointments are limited to twelve months.

The officers appointed will be required to pay to the Council all fees, allowances, and emoluments (other than the foregoing) received by them.

It is not feasible to attend classes for the D.P.H. in conjunction with these appointments.

Forms of application may be obtained from the Medical Superintendent, Dr. J. McGarrity, Little Bromwich Hospital, Birmingham, 9, and should be returned to him on or before July 31st.

The Council House, F. H. C. WILTSHIRE.
Birmingham. Town Clerk.

CITY OF PORT-OF-SPAIN.

APPOINTMENT OF A MEDICAL OFFICER OF HEALTH.

The Port-of-Spain City Council invite applications for the post of Medical Officer of Health for the City of Port-of-Spain.

The duties of the office are as set forth in the bye-laws made by the Central Board of Health and published in the Trinidad Royal Gazette of October 25th, 1917, page 1975-77.

Every applicant must be, or entitled to be, a member of the Medical Board of Trinidad and shall be the possessor of a Diploma of Public Health, Sanitary Science or State Medicine, registered or entitled to be registered in Great Britain and Ireland.

The office is a whole time one and pensionable under the provisions of the Municipal Corporations (Pensions) Ordinance, No. 29 of 1936. The salary attached to the post is £800 per annum, rising by equal annual increments of £25 to £1,000, with a travelling allowance of £75 a year.

The person appointed will be required to furnish a bond in the sum of £100 for the due performance of his duties.

Applications, stating age, qualifications and experience, should reach the undersigned at the Town Hall, Port-of-Spain, Trinidad, B.W.I., not later than July 31st, 1937.

The Town Hall, E. PRADA,
Port-of-Spain, Town Clerk.
April 29th, 1937.
Trinidad, B.W.I.

CITY OF PORTSMOUTH.

ASSISTANT MEDICAL OFFICER OF HEALTH (Male).

Applications are invited from unmarried Medical Practitioners possessing the Diploma in Public Health for the following appointment:—

Assistant Medical Officer of Health and Second Resident Medical Assistant. Salary £500-£700, rising by annual increments of £25

The gentleman appointed will be required to devote his whole time to the office, which will comprise duties in connection with Infectious Diseases, Tuberculosis, Maternity and Child Welfare, and any other duties assigned to him by the Medical Officer of Health. He will be required to reside at the Infectious Diseases Hospital.

There will be a deduction of £125 per annum in respect of the usual residential emoluments.

The position is designated as an established post under the Local Government and Other Officers' Superannuation Act, 1922, and the total salary will be subject to the statutory deduction of 5 per cent. under that Act.

Forms of application, together with conditions of appointment, may be obtained from the Medical Officer of Health, The Guildhall, Portsmouth.

Applications on the prescribed form, endorsed "Assistant Medical Officer of Health," together with copies of not more than three recent testimonials, must be delivered to the undersigned on or before Thursday, July 29th, 1937.

Canvassing, either directly or indirectly, will be deemed a disqualification.

The Guildhall, F. J. SPARKS,
Portsmouth. Town Clerk.
July 12th, 1937.

COUNTY BOROUGH OF BOLTON.

PUBLIC ASSISTANCE AND PUBLIC HEALTH COMMITTEE. TOWNLEYS HOSPITAL.

Wanted for the Townleys Hospital, Farnworth, near Bolton, an ASSISTANT MEDICAL OFFICER (male) for a period of one year.

The salary will be at the rate of £250 per annum, with rations, furnished apartments, attendance, etc.

Application forms, with conditions of appointment, may be obtained from the Public Health Department, Howell Croft, North, Bolton, and must be returned to reach the undersigned not later than Saturday, August 10th, 1937.

R. M. GALLOWAY, M.D.,
Medical Officer of Health

Public Health Department, Bolton.
July 16th, 1937.

THE KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered medical practitioners for the post of ASSISTANT RESIDENT MEDICAL OFFICER at the North Wales Sanatorium (247 beds for female pulmonary and male, female and children non-pulmonary cases), Denbigh, North Wales.

Salary £200 per annum, plus maintenance. The appointment is limited to a period of one year

Applications, stating age, qualifications, experience, etc., together with copies of three recent testimonials, should reach the undersigned not later than Thursday, August 5th, 1937.

Memorial Offices, D. A. POWELL,
Westgate Street Principal Medical Officer.
Cardiff.

ROYAL NAVAL MEDICAL SERVICE.

Vacancies exist for Medical Officers in the Royal Navy, and applications are invited for entry in October, 1937.

Candidates below the age of 28 years are preferred, and they must be registered under the Medical Acts. No examination in professional subjects will be held, but candidates will be required to attend for interview by a Selection Board.

Selected candidates will be entered for Service for a period of three years in the first instance, which may be extended to five years at the discretion of the Admiralty.

At the end of three years' service officers may retire with a gratuity of £400, but those who serve for five years will receive £1,000.

At the end of five years' Short Service permanent commissions will be given to selected officers who wish to make the Naval Medical Service their permanent career. Officers transferred to the permanent list will receive a gratuity of £1,000 (less Income Tax).

Opportunities are available for officers on the permanent list to specialise, and ample provision is made for Post-Graduate study.

Copies of the regulations for entry and conditions of service, including rates of pay and allowances, may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1, and from the Deans of all Medical Schools.

Applications for entry from intending candidates must be received not later than August 31st, 1937.

HIS MAJESTY'S COLONIAL SERVICE

COLONIAL MEDICAL SERVICE

The Secretary of State for the Colonies proposes to select within the next few months not less than five Medical Officers to fill vacancies, the majority of which will occur in Tropical Africa or in Malaya.

QUALIFICATIONS. Candidates must be British subjects of European parentage, under 35 years of age, and must possess a medical qualification registrable in the United Kingdom. Preference will be given to candidates who have held Hospital or Public Health appointments or who have special knowledge of anaesthetics, radiology, surgery, medicine, ophthalmology, gynaecology and midwifery, diseases of the ear, nose and throat, venereal diseases, etc.

SALARY. Initial salaries vary from £600 to £700 and rise by increments to a maximum of between £1000 and £1200.

PRIVATE PRACTICE. Private practice is not allowed as of right, but in the case of some appointments it is permitted on certain conditions.

QUARTERS. In Tropical Africa, free quarters, or an allowance in lieu, are provided. In Malaya, quarters are provided at an annual rental not exceeding 6% of the officer's salary.

PASSAGES. Free first-class passages are provided, on first appointment and when proceeding on and returning from leave. Assistance is also given towards family passages.

TERMS OF APPOINTMENT. The appointments are pensionable, subject to a probationary period which varies from two to three years.

COURSES OF INSTRUCTION IN TROPICAL MEDICINE AND HYGIENE. Selected candidates will normally be required to attend a course of instruction leading to the Diploma in Tropical Medicine and Hygiene before proceeding overseas.

DUTIES. Although Medical Officers are appointed in the first instance for general service, there are opportunities for work in special branches of medicine and surgery, in public health and in medical research.

Further particulars and forms of application may be obtained from the Director of Recruitment (Colonial Service), 2, Richmond Terrace, Whitehall, London, S.W. 1.

CITY OF CARLISLE.

Appointment of ASSISTANT MEDICAL OFFICER for MATERNITY and CHILD WELFARE.

Applications are invited from medical women to take charge of the Corporation Maternity Home (12 beds), Ante natal, Post natal, and Infant Clinics. The duties will also include School Medical Inspection, Supervision of Midwives, and such other Public Health duties as may from time to time be prescribed The duties of the respective offices will be carried out under the direction of the Medical Officer of Health.

Applicants must have had at least two years' experience as Maternity and Child Welfare Medical Officer, and should be in possession of the Diploma in Public Health, and preference will be given to candidates who have a special qualification in Midwifery.

The commencing salary will be at the rate of £600 per annum, rising by annual increments of £25 to a maximum of £700 per annum, and the lady appointed will be expected to commence duty at about the beginning of November.

The appointment is subject to the Local Government and Other Officers' Superannuation Act, 1922. Applications, endorsed "Medical Officer for Maternity and Child Welfare," and accompanied by copies of three recent testimonials, should be submitted to the Medical Officer of Health, 22, Fisher Street Carlisle, on or before August 18th, 1937.

By Order,
FREDK. G. WEBSTER,
Town Clerk.

Town Clerk's Office, Carlisle.
July 13th, 1937.

ROYAL BOROUGH OF KINGSTON-UPON-THAMES.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

Applications are invited from duly qualified and registered medical practitioners who are also registered in the *Medical Register* as the holder of a Diploma in Sanitary Science, Public Health, or State Medicine, for the post of Medical Officer of Health and School Medical Officer for the Royal Borough of Kingston-upon-Thames. The appointment is subject to the provisions of the Local Government Act, 1933, the Sanitary Officers (Outside London) Regulations, 1935, and the Local Government and Other Officers' Superannuation Act, 1922.

Terms and conditions of the appointment and form of application will be supplied on application to the undersigned.

The salary scale is—minimum, £950 per annum, maximum, £1,100 per annum; commencing salary to be determined as indicated in the conditions of appointment.

Applications on the prescribed form, and endorsed "Appointment of Medical Officer of Health and School Medical Officer," must be delivered to the undersigned on or before September 4th, 1937.

Town Clerk's Office, Guildhall, Kingston-upon-Thames
A. W. FORSDIKE,
Town Clerk.
July 15th, 1937

WEST SUFFOLK COUNTY COUNCIL.

ASSISTANT COUNTY MEDICAL OFFICER AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for the above whole-time appointment (men or women), which includes duties in School Medical Inspection, Maternity and Child Welfare, Tuberculosis, Venereal Diseases, etc., work. Applicants must be registered Medical Practitioners and not exceed 35 years of age, holding the Diploma in Public Health Salary £500 per annum, rising by annual increments of £25 to a maximum of £700, plus travelling allowance. Particulars of appointment and forms of application may be obtained from the undersigned, by whom applications, accompanied by copies of not more than three recent testimonials, must be received not later than August 9th, 1937 Canvassing in any form, direct or indirect, will disqualify. L G H. MUNSEY, Clerk of the County Council, Shire Hall, Bury St. Edmund's July 19th 1937.

SURREY COUNTY COUNCIL

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER

JUNIOR ASSISTANT MEDICAL OFFICER (either sex) required at County Sanatorium (300 beds), Milford, near Godalming Resident experience in general hospital essential Appointment is for six months, renewable for further six months. Salary £350 per annum less a deduction of £100 per annum in respect of board lodging and laundry. Appointment subject to the Staffing Regulations of the County Council Forms of application from County Medical Officer, County Hall Kingston-upon-Thames, to whom forms should be returned, with copies of three recent testimonials, by Saturday July 31st, 1937.

CITY OF BIRMINGHAM.

SELLY OAK HOSPITAL (520 Beds).

RESIDENT EAR, NOSE AND THROAT SURGEON (male).

Applications are invited for the above whole-time appointment from fully qualified registered Medical Practitioners, who are Fellows of the Royal College of Surgeons (England).

Candidates must have had good experience in Ear, Nose and Throat surgery and be prepared, if called on, to undertake work also at Dudley Road Hospital.

Furnished quarters, rations, laundry and attendance will be provided or alternatively a cash allowance will be paid if the officer appointed should be non-resident.

The appointment will be for a period of one year, terminable within that period by one month's notice on either side. Salary will be at the rate of £700 per annum, together with the emoluments stated above. The officer appointed will be required to refund to the Council all fees and allowances received in connexion with his duties.

Applications, stating age, experience and qualifications, accompanied by copies of recent testimonials and endorsed "Ear, Nose and Throat Surgeon," should be sent to the Medical Superintendent not later than Saturday, August 14th, 1937

The Council House, Birmingham. June, 1937.
F. H. C. WILTSHIRE, Town Clerk.

CITY OF LIVERPOOL.

PORT SANITARY AND HOSPITALS COMMITTEE.

RESIDENT ASSISTANT MEDICAL OFFICERS—(one male, one female).
ALDER HEY HOSPITAL FOR CHILDREN.
(952 Beds.)

Applications are invited for the above appointments, which fall vacant on October 1st, 1937.

The male appointment is for the Orthopaedic Wards, which compromise 180 beds and include open-air wards for surgical tuberculosis. There is also a large amount of fracture and other orthopaedic work of an acute nature. Previous experience in othopaedic work is desirable and the Hospital affords ample opportunity for gaining experience in this work.

The female appointment is for the general medical and surgical wards of the Hospital.

Both the appointments are for a period of one year at a salary of £200 per annum, together with usual residential allowances.

Canvassing will be deemed a disqualification.

Applications to be made on forms obtainable from the Medical Officer of Health, Municipal Annexe, Dale Street, Liverpool, 2, to be endorsed "Resident Assistant Medical Officer," and returned to the undersigned not later that July 31st, 1937.

W. H. BAINES,
Town Clerk

Municipal Buildings, Dale Street, Liverpool, 2.
July, 1937.

COUNTY BOROUGH OF DERBY.

DERBY CITY HOSPITAL,

ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Assistant Resident Medical Officer (male) at the above hospital of 300 beds. This hospital provides treatment for acute medical and surgical cases, tuberculosis, obstetrics, and children's diseases, etc.

Candidates must be registered in Medicine and Surgery.

The appointment is for a period of six months; two months' notice of termination of duties may be given on either side. The successful applicant will be required to commence duties at the end of August or in early September.

Salary at the rate of £200 per annum, with board and residence.

Applications, stating age, experience, and accompanied by three recent testimonials, should be sent to the undersigned as soon as possible.

Public Health Department, 1, Derwent Street, Derby.
GORDON LILICO, Medical Officer of Health.

ANCOATS HOSPITAL, MANCHESTER.

CASUALTY OFFICER required, twelve months' appointment. Salary £250 per annum, with luncheon and tea provided. Applicants who have passed their Primary Fellowship Examination will be given preference. The person appointed will be required to do duty for the Resident Surgical Officer at alternate week-ends and other scheduled times.

Applications, stating age, experience and qualifications, to be forwarded to the undersigned immediately, together with copies of three recent testimonials

By Order of the Board,
HERBERT J DAFFORNE,
General Superintendent and Secretary.

COUNTY BOROUGH OF BIRKENHEAD.

DEPARTMENT OF THE MEDICAL OFFICER OF HEALTH.

BIRKENHEAD MUNICIPAL HOSPITAL.
(547 Beds.)

RESIDENT MEDICAL OFFICERS
(2 vacancies).
RESIDENT SURGICAL OFFICER
(1 vacancy).

Applications are invited for the above posts, which will fall vacant on October 1st, 1937. The appointments are for twelve months.

Candidates must be male, unmarried, and fully qualified registered medical practitioners.

The duties attached to two of the above posts are mainly medical, and to the third mainly surgical. Preference will be given to candidates who have had previous post-graduate medical experience, and to candidates who have had previous post-graduate surgical and obstetrical experience (including operative surgery), either in a Municipal or Voluntary General Hospital.

Salary £300 per annum, with board, residence and laundry.

Applications must be made on forms to be obtained from Dr. D. Morley Mathieson, Medical Officer of Health, 9, Hamilton Square, Birkenhead.

Applications, endorsed "Resident Medical Officer," to be received by the undersigned not later than August 7th 1937.

Town Hall, Birkenhead.
E. W. TAME, Town Clerk.
July 19th, 1937.

COUNTY BOROUGH OF ROCHDALE.

PUBLIC HEALTH DEPARTMENT.

The Health Committee invite applications from fully qualified registered Medical Practitioners (unmarried) for the appointment of JUNIOR RESIDENT MEDICAL OFFICER (male) at the BIRCH HILL HOSPITAL (475 beds—Medical, Surgical, Children, and Maternity).

The appointment includes certain services at the adjoining Public Assistance Institution, and will be for a period of six months in the first instance and for a further period of six months at the option of the Town Council, but will not be renewable thereafter.

Salary at the rate of £225 per annum, together with board, residence, and laundry.

Applications must be made on the prescribed form, which may be obtained on application to the Medical Officer of Health, and returned addressed to him at the Public Health Offices, Baillie Street, Rochdale, not later than Monday, August 9th, 1937.

Town Hall, Rochdale.
HARRY BANN, Town Clerk.
July 19th, 1937.

THE WEST RIDING OF YORKSHIRE MENTAL HOSPITALS BOARD.

WADSLEY MENTAL HOSPITAL, NEAR SHEFFIELD.

APPOINTMENT OF THIRD ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment of THIRD ASSISTANT MEDICAL OFFICER in the Board's service at the above Mental Hospital at a commencing salary of £525 per annum, rising by annual increments of £25 to a maximum of £600 per annum, together with emoluments, either in cash or in kind, valued for superannuation purposes at £120 per annum. A house is provided, for which an inclusive rent of £72 per annum is charged.

Applicants must possess the Diploma in Psychological Medicine.

The appointment is subject to the provisions of the Asylums Officers' Superannuation Act, 1909, Class I.

Applications, with copies of not more than two recent testimonials, stating age and experience, to be addressed to the MEDICAL SUPERINTENDENT, West Riding Mental Hospital, Wadsley, Sheffield, 6, not later than Wednesday, August 4th, 1937.

There is no printed form of application.

Board Offices, Victoria Chambers, Wood Street, Wakefield.
G. L. BANNER, Clerk to the Board.
July, 1937.

DISTRICT INFIRMARY, ASHTON-UNDER-LYNE. (200 Beds.)

A HOUSE SURGEON is required immediately. Six months' appointment, which may be renewed. The Staff comprises a Resident Surgical Officer, a Casualty Officer and two House Surgeons

Salary at the rate of £150 per annum, with board, residence and laundry.

Applications, with testimonials, to be sent at once to the undersigned.

FRANK OLIVER.
General Superintendent and Secretary
July 12th, 1937.

CITY OF MANCHESTER. WITHINGTON HOSPITAL. (1293 Beds)
(Recognised under the regulations for the F.R.C.S.)

The Public Health Committee invites applications from registered Medical Practitioners for two posts of RESIDENT ASSISTANT MEDICAL OFFICER at the above-named Hospital.

The salary for such appointment is £200 per annum, with board, residence and laundry in addition, subject to the Manchester Corporation conditions of service.

Each appointment will be made in the first instance for a period of six months, renewable for a further six months, but not renewable thereafter.

Full information and forms of application may be obtained from the Medical Officer of Health, Sunlight House, Quay Street, Manchester, 3, and applications for the posts must be received by him not later than August 4th, 1937.

F. E. WARBRECK HOWELL,
Town Clerk.

Town Hall, Manchester.
July 19th, 1937.

CITY OF BIRMINGHAM EDUCATION COMMITTEE.

APPOINTMENT OF SCHOOL MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners for the appointment of School Medical Officer. Salary £1,100 per annum, rising by biennial increments of £50 to a maximum of £1,400 per annum.

The appointment will be subject to the provisions of the Birmingham Superannuation Scheme, 1926 (Local Government and Other Officers' Superannuation Act, 1922).

Further particulars, with forms of application, may be obtained from the undersigned, to whom applications should be delivered not later than first post on the morning of Saturday, August 7th, 1937.

Canvassing disqualifies.

P. D. INNES,
Chief Education Officer.

Education Office, Margaret Street, Birmingham, 3.
June 26th, 1937.

THE ROYAL INFIRMARY, SHEFFIELD. (500 Beds.)

The Board of Management invite applications for the undermentioned posts:—

(1) CASUALTY OFFICER.

(2) HOUSE SURGEON to the ORTHOPAEDIC and FRACTURE SERVICE.

The salary attached to (1) is £150 per annum, and to (2) £80 per annum, increasing to £100 after six months' service, with board and residence in each case.

Appointment (1) is tenable for six months from July 1st, 1937, and (2) is tenable for the residue of the period of six months ending October 31st next.

Applications, with copies of testimonials, to be sent to the General Superintendent and Secretary.
June 20th, 1937.

ST. ANNE'S HOME, ALTRINCHAM, CHESHIRE.

Wanted, a RESIDENT SURGICAL OFFICER (male) for the above hospital (50 beds). Must be registered. Salary £200 per annum, with board, apartments, etc. This hospital is the Ear, Nose and Throat Department of the Manchester Hospital for Consumption and Diseases of the Ear, Nose, Throat and Chest, and duties include attendance on two mornings a week at the Out-Patient Dept., Manchester.

Applications, with copies of testimonials, to be sent not later than August 3rd, to W. HUNT, Secretary, 45, Hardman Street, Manchester 3.

ALL SAINT'S HOSPITAL (for Genito-Urinary Diseases), Austral Street, West Square, S.E.11.

RESIDENT HOUSE SURGEON (male) required on September 1st, 1937, for seven months, being two months as Junior House Surgeon, with a salary at £100 per annum, followed by five months as Senior House Surgeon, with salary of £150 per annum.

Applications, giving particulars of age, experience, qualifications, and enclosing copies of three recent testimonials, should reach me not later than August 12th.

D. H. EADE, Secretary.

LONGTON HOSPITAL, STOKE-ON-TRENT. (50 Beds)

HOUSE SURGEON (male or female) required. Commencing salary £160, with board, residence and laundry, plus certain fees.

Applications, with copies of recent testimonials, and stating nationality, to be sent immediately to the Chairman of Directors, Longton Hospital, Stoke-on-Trent.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.

GALTON LABORATORY.

APPOINTMENT OF ASSISTANT SEROLOGIST.

Applications are invited from duly registered medical men for the post of whole-time research worker in the Department of Eugenics.

The gentleman appointed will be expected to devote himself, under Dr. G. L. Taylor, primarily to the serological investigation of human hereditary characters and diseases, but opportunity for work on other aspects of human genetics will be afforded.

Salary—£350—£50—£450 per annum. There is provision for participation in the Federated Superannuation System for Universities.

Applications, with the names of two referees, to be sent to Professor R. A. Fisher, F.R.S., Galton Laboratory, University College, London, W.C.1

COUNTY BOROUGH OF OLDHAM.

MUNICIPAL HOSPITAL.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from Registered Medical Practitioners for the post of Resident Assistant Medical Officer.

Salary £200 per annum, with board, residence, and laundry.

Candidates should be unmarried.

The appointment will, in the first instant, be for a period of six months. The successful applicant, however, will be eligible for re-appointment for a further period of six months.

The Hospital comprises 375 beds with facilities for gaining experience in medicine, surgery, midwifery, and diseases of children.

Application forms may be obtained from the Medical Officer of Health, Town Hall, Oldham, and should be returned, endorsed "Resident Assistant Medical Officer," as soon as possible, but not later than Monday, August 9th, 1937.

Town Hall, JOSEPH J. WILLIAMS, LL.D.,
Oldham. Town Clerk.
July 16th, 1937.

PRESTON AND COUNTY OF LANCASTER ROYAL INFIRMARY.
(General Hospital. 405 Beds.)

HOUSE SURGEON, EYE, EAR, NOSE AND THROAT DEPARTMENT.

Applications are invited from unmarried gentlemen, doubly qualified and registered, for the above post.

Hospital Resident Staff—seven. Six months' appointment.

Salary £150 per annum, with board, residence and laundry.

Applications, stating age, qualifications and experience, together with copies of recent testimonials, to be forwarded as soon as possible to Mr. John Gibson, Superintendent, Royal Infirmary, Preston.

June 26th, 1937.

NORWICH INFIRMARY.

Applications are invited for the post of RESIDENT ASSISTANT MEDICAL OFFICER (male).

Salary £350 per annum, rising by annual increments of £25 to £450 per annum.

Particulars of the appointment may be obtained from the Senior Medical Officer, Norwich Infirmary, Bowthorpe Road, to whom applications, stating age, qualifications and experience, should be forwarded by not later than July 30th, 1937

The envelopes should be endorsed "Resident Assistant Medical Officer."

GREAT YARMOUTH GENERAL HOSPITAL. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two appointments). Duties to commence August 23rd.

Applicant must be male and unmarried. Salary at the rate of £140 per annum, with board, residence and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FREDK. L. GATFIELD.
Secretary

PRESTWICH MENTAL HOSPITAL, MANCHESTER.

Required immediately, LOCUM TENENT MALE MEDICAL OFFICER. Local facilities for D.P.M. Salary, seven guineas per week and all found. Candidates must be unmarried and registered under the Medical Act.

Appointment terminable by one week's notice on either side—Apply, stating age, hospital and other experience, qualifications, and full particulars, to the Medical Superintendent as above

ROYAL NORTHERN HOSPITAL, Holloway, N.7.

Applications are invited for the following appointments:—

HOUSE PHYSICIAN, vacant September 1st. The appointment is for nine months (three months as Out-Patient Medical Officer and Anaesthetist and six months as House Physician). Salary at the rate of £70 per annum, with board, residence and laundry.

OBSTETRIC HOUSE SURGEON, vacant September 15th. The appointment is for nine months (six months as Obstetric House Surgeon and three months as Casualty Officer). Salary at the rate of £70 per annum, with board, residence and laundry.

Applications, with copies of testimonials, should be sent by August 6th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER,
Secretary.

THE PRINCE OF WALES'S HOSPITAL, Greenbank Road, Plymouth.
(Formerly South Devon and East Cornwall Hospital.)
(264 Beds)

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry.

Appointment is tenable for six months and is subject to renewal. Duties to commence immediately.

The Hospital is officially recognized for the surgical practice required before admission to the Final Fellowship Examinations of the Royal College of Surgeons of England.

Applicants must be registered under the Medical Acts. Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned forthwith.

ARTHUR R. CASH,
Gen. Supt. and Secretary.

PRINCESS LOUISE KENSINGTON HOSPITAL FOR CHILDREN, St. Quintin Avenue, W.10. (81 Beds.)

HOUSE SURGEON (either sex) required immediately for six months. Salary at the rate of £120 p.a. for the first three months and £150 p.a. for the second three months, with board, residence and laundry.

Applications, with copies of three recent testimonials, should be sent to the undersigned not later than Thursday, July 29th, 1937.

H. J. ELEY,
Secretary.

KING EDWARD MEMORIAL HOSPITAL, EALING. (131 Beds.)

CASUALTY OFFICER and DEPUTY RESIDENT MEDICAL OFFICER (male) required. Six months' appointment, with possibility of re-election for a further period. Salary £225 per annum, with usual residential allowances.

Applications, stating age, experience and qualifications, together with copies of two recent testimonials, to be sent to the undersigned immediately.

R. A. MICKELWRIGHT,
House Governor.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.10.

ANAESTHETIST.

Applications are invited for the post of Anaesthetist from those who are specially engaged in the practice of anaesthetics. Honorarium at the rate of 52 guineas per annum for one attendance a week. For any further attendance a fee of one guinea will be paid.

Applications, together with copies of not more than three recent testimonials, to be sent to the Secretary.

July 19th, 1937

CHARING CROSS HOSPITAL.

Applications are invited for the post of HOUSE PHYSICIAN to the Radiological Department for a period of six months from August 15th, 1937. Salary £50 per annum, with board, laundry, etc.

Applications, with copies of three recent testimonials, must be sent to the undersigned not later than first post July 28th, 1937.

GEORGE J. JONES,
Secretary.

ST. JOHN'S HOSPITAL, LEWISHAM, S.E.13.

Applications are invited for the Resident appointment of HOUSE PHYSICIAN (male) tenable for six months from September 1st. Salary £100 p.a. Applications, with copies of testimonials, should reach the undersigned by August 9th.

J. C. GILBERT,
Secretary-Superintendent.

NUNEATON GENERAL HOSPITAL.
(100 Beds.)

HOUSE SURGEON required immediately. Salary at the rate of £150 per annum, with board, residence, laundry, and certain other emoluments. The appointment is for six months in the first instance, and is one specially suitable to a medical woman.

Applications should be sent to the Hon. Secretary of the Medical Board, Nuneaton General Hospital, and may be accompanied by copies of two testimonials.

A TEMPORARY HOUSE SURGEON until September 30th next is also required under similar conditions to the post advertised above.

RESIDENT SURGICAL OFFICER.

The Medical Board will shortly be considering the appointment of a RESIDENT SURGICAL OFFICER as from October 1st next. The appointment would be for twelve months, renewable for two further periods. Salary £275 per annum, with board, residence, laundry, etc. Candidates should have had two or three years' hospital experience and should be capable of performing the simpler major operations of surgery and gynaecology.

Applications, accompanied by three copies of recent testimonials, should be sent to the Secretary of the Medical Board at the Hospital before July 28th.

NORTHAMPTON GENERAL HOSPITAL.
(293 Beds.)

There is an immediate vacancy for a CASUALTY OFFICER, whose duties will also include the administration of Anaesthetics. The appointment will be made to September 30th, and the successful candidate will be eligible for re-election for a further period of six months.

The salary will be at the rate of £150 per annum, with board, residence and laundry.

Candidates, who must be duly qualified and registered, must be males and of British nationality.

Applications, stating age, qualifications, etc., with copies of three recent testimonials, must reach the undersigned not later than the first post on Wednesday, August 4th

S. C. W. DISNEY,
July 14th, 1937. Secretary-Superintendent.

NOTTINGHAM CITY ISOLATION HOSPITAL.

A TEMPORARY RESIDENT MEDICAL OFFICER is urgently required for a period of several months to take charge of the Hospital of 200 beds under the supervision of the Medical Officer of Health. Fever experience is desirable.

Facilities will be provided for the officer to gain experience of other branches of Public Health work, if desired

Salary at the rate of £350 per annum, with board and lodging. Subject to two weeks' notice on either side.

Apply forthwith to the undersigned

Guildhall, J. E. RICHARDS,
Nottingham. Town Clerk
July 12th, 1937.

MANSFIELD AND DISTRICT GENERAL HOSPITAL. (140 Beds.)

HOUSE SURGEON (Male) required Duties to commence as soon as possible Salary at the rate of £150 p.a., with residence, board and laundry. The appointment is for six months and is renewable The staff consists of a Resident Surgical Officer and two House Surgeons Applications, stating age, qualifications and nationality accompanied by not more than three recent testimonials, to be sent to the undersigned as soon as possible

C. J. ADAMS,
Secretary

WEST NORFOLK AND KING'S LYNN GENERAL HOSPITAL.

RESIDENT SURGICAL OFFICER.

Applications are invited for the above post, which will become vacant on August 28th, 1937. Salary £300 per annum.

The duties include much operative work, and preference will be given to a candidate holding the F R C S Eng degree

Applications, with copies of recent testimonials, should be sent to the undersigned as early as possible and in any case not later than August 9th

JOSEPH E. SEARJEANT, F.C.C.S.,
House Governor and Secretary.

MERTHYR GENERAL HOSPITAL.
(118 Beds.)

RESIDENT HOUSE SURGEON required for a period of six months.

Salary at the rate of £150 per annum, with board and laundry. Applications, stating age, nationality, qualifications, and accompanied by three (copies only) recent testimonials, should be addressed to the Secretary of the Merthyr General Hospital immediately

THE CHILDREN'S HOSPITAL,
King Edward VII Memorial, Birmingham, 16.

RESIDENT SURGICAL OFFICER.
HOUSE PHYSICIAN No. 2.
HOUSE SURGEON No. 2.

Applications are invited for the above posts. Candidates for the post of Resident Surgical Officer must be qualified and registered and have held a responsible Resident appointment at a teaching Hospital. The salary attaching to the post is at the rate of £175 per annum, with board, residence and laundry. The appointment is tenable for one year as from October 1st, 1937.

Candidates for the posts of House Physician and House Surgeon must be qualified and registered. The salary is at the rate of £75 per annum, with board, residence and laundry, but if candidates have held satisfactory appointments at approved Hospitals the salary will be at the rate of £100 per annum. The appointments are tenable for six months as from October 1st, 1937.

Candidates should forward their applications, with proof of registration, and any credentials which they may desire to offer, to the undersigned on or before July 24th, 1937.

HAROLD F. SHRIMPTON,
July, 1937. House Governor.

ROYAL BERKSHIRE HOSPITAL, READING.
(338 Beds.)

Applications are invited for the post of RESIDENT ANAESTHETIST (male), which falls vacant on August 13th, 1937.

Candidates must be fully qualified and registered and have had considerable experience in the administration of Anaesthetics.

The appointment will be for a period of not less than six months.

The salary of £250 per annum, with board, residence and laundry, will be paid to the candidate possessing suitable qualifications for the post.

Applications, stating age and experience, with copies of not more than three recent testimonials, to be sent to the undersigned as soon as possible.

H. E. RYAN,
Secretary and House Governor.

ROYAL BERKSHIRE HOSPITAL, READING.
(338 Beds.)

Applications are invited for the following Resident appointment:

One CASUALTY OFFICER (male).

The appointment is for six months, and candidates must be fully qualified and registered.

Remuneration at the rate of £150 per annum, with board, residence and laundry.

Applications, stating age and experience with copies of testimonials, to be sent to the undersigned as soon as possible.

H. L. RYAN,
Secretary and House Governor.

ROYAL MANCHESTER CHILDREN'S HOSPITAL,
PENDLEBURY, NEAR MANCHESTER.
(230 Beds.)

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer. Salary £150 per annum. The appointment is for a period of six months, commencing August 1st, 1937. Candidates must be unmarried and duly registered. Previous Hospital experience essential.

Applications, stating age, and accompanied by copies of not more than three recent testimonials, to be sent to the undersigned immediately. Canvassing, directly or indirectly, may disqualify.

By Order,
H. HEARDMAN,
Secretary.

ROYAL MANCHESTER CHILDREN'S HOSPITAL,
PENDLEBURY, NEAR MANCHESTER.
(230 Beds.)

RESIDENT HOUSE SURGEON.

Applications are invited for the post of Resident House Surgeon for a period of six months, commencing August 1st, 1937. Salary £100 per annum. Candidates having previous experience in the administration of anaesthetics will be given preference.

Applications, stating qualifications and past experience, together with testimonials, to be sent to the undersigned immediately. Canvassing, directly or indirectly, may disqualify.

By Order,
H. HEARDMAN,
Secretary.

MONTAGU HOSPITAL, MEXBOROUGH
(113 Beds)

RESIDENT HOUSE SURGEON (Lady) required Commencing salary £120 per annum, with board residence, laundry, and excellent experience.

Applications, stating age, qualifications, when at liberty and accompanied by copy testimonials, to:—

JOHN N. DRAKE,
Secretary-Superintendent

BRISTOL ROYAL INFIRMARY.

Applications are invited for the following Resident Medical appointments for the six months commencing September 1st, 1937.

3 HOUSE PHYSICIANS (one of whom also acts as House Physician to the Cancer Dept.).

4 HOUSE SURGEONS and 1 ASSISTANT HOUSE SURGEON.

2 HOUSE SURGEONS to the Casualty Department (one of whom also acts as House Surgeon to the Fracture Clinic and Skin Department).

1 HOUSE SURGEON to the Ear, Nose, and Throat Department.

1 SENIOR OBSTETRIC HOUSE SURGEON.

1 JUNIOR OBSTETRIC HOUSE SURGEON.

Salaries at the rate of £80 per annum, except in the case of the Senior Obstetric House Surgeon, who will receive a salary at the rate of £100 per annum, and the Senior Casualty House Surgeon, who will receive a salary at the rate of £150 per annum.

Candidates, who must be duly qualified, to send in their applications on forms to be obtained from the undersigned, which must be returned on or before July 30th, together with copies of not more than three testimonials.

The elected candidates must become members of the Medical Defence Union before taking up their appointments.

ELLIS C. SMITH, F.C.I.S.,
Secretary and House Governor.

THE QUEEN'S HOSPITAL FOR CHILDREN,
Hackney Road, London, E.2.

RESIDENT MEDICAL OFFICER required on September 1st, 1937. The appointment is made for six months, and may be extended for further periods of six months, but cannot be held for more than two years.

The Resident Medical Staff consists of the Resident Medical Officer as above, two Casualty Officers, two House Physicians, one E.N. and T. House Surgeon, and one House Surgeon.

Salary £200 per annum, with board, residence and laundry. Candidates must have held a responsible resident appointment at a recognised hospital.

Forms of application may be obtained from the undersigned, and must be completed and returned on or before August 7th, 1937.

CHARLES H. BESSELL, Secretary.
July 12th, 1937.

THE QUEEN'S HOSPITAL FOR CHILDREN,
Hackney Road, London, E.2.

CASUALTY OFFICER required September 1st, 1937. Some ophthalmic work additional.

Six months' appointments. Salary at the rate of £100 per year, with board, lodging and laundry in each case.

Applications must be made on forms to be obtained from the undersigned, and must be sent in, with copies of not more than four testimonials, on or before August 7th, 1937.

CHARLES H. BESSELL, Secretary.
July 12th, 1937.

MINEHEAD AND WEST SOMERSET HOSPITAL, MINEHEAD, SOMERSET.

Applications are invited for the post of RESIDENT HOUSE SURGEON (male or female).

Duty to commence on September 1st, 1937. Appointment for a period of six months Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than July 30th, 1937.

W. H. P. RODDA,
Secretary.

BURSLEM HAYWOOD AND TUNSTALL WAR MEMORIAL HOSPITAL.
Tunstall, Stoke-on-Trent.

Applications are invited for the post of RESIDENT HOUSE SURGEON, salary £175 per annum, with board, residence and laundry. The appointment is for six months in the first instance; reappointment may be applied for.

Applications, stating age and experience, with copies of three recent testimonials, to be sent to the undersigned immediately.

C. E. LOWNDES,
Secretary.

DONCASTER ROYAL INFIRMARY.
(185 Beds.)

Applications are invited for the post of HONORARY ANAESTHETIST to the above Institution.

Full particulars of the appointment may be had from the undersigned, to whom all applications must be forwarded not later than August 7th, 1937

The present locum is an applicant for the appointment.

R. LANCASTER,
Secretary Superintendent

ABERDEEN ROYAL INFIRMARY.

The Board of Directors invite applications for the post of GYNAECOLOGICAL REGISTRAR. The successful candidate will also be a part-time Assistant in the Department of Midwifery of the University of Aberdeen.

Applications, with recent testimonials (six copies of each) must be lodged not later than 10 a.m. on August 4th, 1937, with the undersigned, from whom particulars as to salary and terms of appointment may be obtained.

JOHN A. McCONACHIE,
Clerk and Treasurer.

230, Union Street, Aberdeen.
July 16th, 1937.

ASHFORD HOSPITAL, ASHFORD, KENT.
(90 Beds.)

RESIDENT MEDICAL OFFICER required. Male, British nationality, unmarried and under 35 years of age. Salary £150 per annum. Duties to commence August 1st, 1937. Applications, stating experience and qualifications, with three recent testimonials, to be sent to the Hon. Secretary.

BRISTOL GENERAL HOSPITAL.

The Committee invites applications for the appointment of a HOUSE SURGEON. The appointment will be for six months, dating from August 1st, at a salary at the rate of £80 per annum, with board, residence, etc., provided in the Hospital.

Candidates must be registered under the Medical Acts and produce testimonials of good personal character and ability, and must have recent experience in the administration of Anaesthetics.

Forms of application, to be obtained from the Secretary, must be returned completed as soon as possible, with copies of testimonials, addressed to the undersigned, from whom further particulars may be obtained.

THOMAS W. GREGG, F.C.C.S.
Secretary.

BEDFORD COUNTY HOSPITAL.
(120 Beds.)

Wanted, HOUSE SURGEON, for a term of not less than six months. Salary £150 per annum. He must be fully qualified, male, unmarried. Board, lodging and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee.

CHESHIRE JOINT SANATORIUM, MARKET DRAYTON.

Resident HOUSE PHYSICIAN (male) required for a period of twelve months. Salary £250 per annum.

Forms of application from the Medical Superintendent.

CAMERON HOSPITAL, WEST HARTLEPOOL.
(76 Beds.)

HOUSE SURGEON (male or female) required to commence duties on August 16th. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, and experience, together with copies of testimonials, should be sent to the Secretary as soon as possible.

DARLINGTON MEMORIAL HOSPITAL.
(200 Beds.)

Applications are invited for the post of HOUSE SURGEON *for the Out-Patient, Casualty and Orthopaedic Dept.* Male, British fully qualified. Salary £150 per annum, with board, residence and laundry. Applications, stating age, full particulars of qualifications and experience, together with copies of three recent testimonials, to be addressed to the undersigned.

ARTHUR RIDDLE, A.C.I.S.,
Secretary-Superintendent

LIVERPOOL ROYAL INFIRMARY.
(Medical School. 336 Beds.)

Applications are invited for the whole-time appointment of SURGICAL TUTOR AND REGISTRAR as from October 1st, 1937.

Salary £200 per annum.

Applications, giving details of academic qualifications and experience, should be sent to the undersigned.

WM. RUTTER,
General Superintendent and Secretary.

LIVERPOOL AND DISTRICT HOSPITAL FOR DISEASES OF THE HEART.
34, Oxford Street, Liverpool.

HOUSE PHYSICIAN (male or female) required for October 1st.

Facilities for writing Thesis. Salary £100 per annum, with board, residence and laundry.

Applications to Miss Lewis, Secretary.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL,
Woodchurch Road, Birkenhead.

HOUSE SURGEON. The Board invite applications for the post of Senior House Surgeon for a period of six months from October 1st, 1937. Honorarium at the rate of £175 p.a., with board, residence and laundry. Previous experience essential.

SECOND HOUSE SURGEON. The Board invite applications for the post of Second House Surgeon for a period of six months from *October 1st, 1937. Honorarium at the rate of* £90 p.a., with board, residence and laundry.

The Hospital is a recognised Training School for Sick Children's Nurses.

Applications, together with copies of testimonials, to be addressed to the Hon. Secretary, at the Hospital, not later than August 2nd, 1937.

EAR AND THROAT HOSPITAL, BIRMINGHAM, 3.

THIRD HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Salary at the rate of £150 per annum, with lunch on six week-days, and an allowance of £50 per annum in lieu of board and lodging.

Appointment for six months to commence as soon as possible. Candidates are eligible for election to Senior posts. Facilities for training for D.L.O.

Applications and testimonials to be forwarded to the undersigned immediately.

W. H. LOMAS, Secretary.

KENT AND CANTERBURY HOSPITAL.
(Three Resident Medical Officers.)
CANTERBURY.

HOUSE SURGEON (male, unmarried). Six months' appointment, commencing July 31st, 1937. Salary £125 per annum, with residence and laundry.

The successful candidate will commence duties at the present Hospital, but will be transferred to the new Hospital (181 beds), which is to be ready for occupation about September 1st.

The Hospital is recognised for Fellowship study.

Applications, together with copies of testimonials, should be sent as soon as possible to:

S. I. WARD,
Secretary.

SOUTH EASTERN HOSPITAL FOR CHILDREN, SYDENHAM, S.E.26.
(100 Beds.)

Recognised by the Examining Board for post-graduate study for the Diploma of Child Health.

Applications are invited for the post of RESIDENT MEDICAL OFFICER, male or female. The appointment will be for six months, commencing shortly. Honorarium £100 per annum, with board, residence and laundry

Applications, by letter only, stating age, qualifications and experience, with copies of three testimonials, should be received by the Hon. Secretary at the Hospital by Wednesday, July 28th.

SUSSEX MATERNITY AND WOMEN'S HOSPITAL, BRIGHTON.
(50 Beds)

RESIDENT HOUSE SURGEON (male) required. Salary at the rate of £130 per annum, board and washing found, and £40 allowed for travelling expenses. Good experience in midwifery and gynaecology afforded. No canvassing allowed. *The successful candidate will be required to enter* on his duties at the beginning of September.

Applications in writing, accompanied by testimonials, should be sent to PERCY F. SPOONER, Secretary, at the Hospital, Buckingham Road, Brighton.

July 15th, 1937

ST BARTHOLOMEW'S HOSPITAL, Rochester.

(126 Beds) Four Residents.

The House and Finance Committee invite applications for the post of HOUSE PHYSICIAN, which is now vacant.

Candidates must be fully qualified and registered The appointment is for six months. Salary at the rate of £150 per annum.

Applications, stating age, qualifications, experience, etc., accompanied by copies of two recent testimonials or one from the Dean of the candidate's Medical School, should be addressed at once to the Superintendent-Secretary.

CITY MENTAL HOSPITAL, CANTERBURY

LOCUM TENENS ASSISTANT MEDICAL OFICER required August 9th to 23rd. Must have had previous Mental Hospital experience. Fees £7 7s per week. Applications to be sent to the Medical Superintendent.

CEFN COED HOSPITAL, SWANSEA.
(Swansea County Borough Mental Hospital.)

Applications are invited for the post of ASSISTANT MEDICAL OFFICER.

Candidates must be under 30 years of age. Commencing salary £400, rising by annual increments of £25 to £500, with emoluments consisting of board, lodging, laundry, and attendance, valued at £100 per annum.

The successful candidate will be expected to obtain the diploma in Psychological Medicine, upon obtaining which he will receive an addition of £50 per annum Preference will be given to those candidates who have experience as House Surgeon or House Physician in a General Hospital.

The appointment is subject to the provisions of the Asylums Officers' Superannuation Act, 1909, and to certain conditions, a copy of which may be obtained from the Medical Superintendent, to whom applications, giving full particulars, with copies of testimonials, should be sent not later than August 18th, 1937.

H. L. LANG-COATH,
Clerk to the Visiting Committee.

ROYAL SUSSEX COUNTY HOSPITAL, BRIGHTON 7.

Applications are invited for the office of HONORARY CLINICAL ASSISTANT to the Early Nervous Disorders Department from ladies and gentlemen who are Fellows, Members or Licentiates of the Royal College of Physicians of London, Edinburgh, or Dublin, or Graduates in Medicine of one of the Universities of the British Empire, and who are duly registered under the Medical Acts.

Further particulars of terms of appointment and duties may be obtained from the undersigned, and applications must reach the undersigned at the Hospital before 12 noon on August 21st, 1937.

L. L. W. LANCASTER-GAYE,
Secretary-Superintendent.

THE PRINCE OF WALES'S HOSPITAL, Devonport, Plymouth.
(Formerly Royal Albert Hospital, Devonport.)

Applications are invited for the post of JUNIOR HOUSE SURGEON Salary £120 per annum, with board, residence, and laundry.

Duties to commence immediately.

Appointment is tenable for six months and is subject to renewal or promotion to the senior position when this post becomes vacant.

Applicants must be registered under the Medical Acts.

Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned forthwith.

FRANK ROWE,
Secretary

WARNEFORD GENERAL HOSPITAL, LEAMINGTON SPA. (164 Beds.)

Required by August 12th, 1937, RESIDENT JUNIOR HOUSE SURGEON and CASUALTY OFFICER (combined post) Six months' appointment Salary £150 p.a., with board and laundry. Applications from qualified registered medical practitioners should be sent, together with three recent testimonials, to the undersigned by July 29th, 1937.

EDWARD L WIRGMAN,
House Governor and Secretary.

LEAF HOMOEOPATHIC HOSPITAL, Eastbourne.

Appointments of HONORARY CONSULTANTS for Eye, for Ear, Nose and Throat, and for Skin.

The Committee of Management invites applications for the appointment of Consultants in the above diseases.

Such application should be accompanied by full particulars of qualifications and should be addressed to the Honorary Secretary

NEW SUSSEX HOSPITAL FOR WOMEN, WINDLESHAM ROAD, BRIGHTON

Applications are invited from qualified medical women for the post of HOUSE SURGEON.

Salary at the rate of £100 per annum.

Duties to commence August 21st.

Applications in writing, accompanied by recent testimonials, to be sent not later than July 30th to PERCY F. SPOONER, Secretary.

July 19th, 1937.

ROTHERHAM HOSPITAL.

HOUSE SURGEON required for Ophthalmic and Ear, Nose and Throat Departments. Previous experience not essential. Salary £150 per annum, with board and laundry

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. Roberts, 8, Moorgate Street, Rotherham.

ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE.

WHOLE-TIME JUNIOR SURGICAL REGISTRAR.
(783 Beds.)

Applications are invited for the post of whole-time Junior Surgical Registrar. These appointments are intended for Graduates who desire to gain surgical experience, and who have already held a post as House Surgeon. The post offers opportunity for postgraduate study.

The appointment, which will commence on September 1st, 1937, will in no case extend beyond three years, and will be for one year in the first instance, renewable for two further periods.

The rate of remuneration is £150 per annum.

Applications, with copies of not more than three recent testimonials, must be received on or before Wednesday, August 18th, 1937, by the undersigned, from whom further particulars may be obtained.

S. DUNSTAN,
July 16th, 1937. House Governor and Secretary.

ROYAL SALOP INFIRMARY, SHREWSBURY.
(150 Beds.)

APPOINTMENT OF RESIDENT HOUSE PHYSICIAN.

Applications are invited from fully qualified unmarried gentlemen for the appointment of Resident House Physician, vacant immediately.

Salary £160 per annum, with board, residence, etc.

The appointment is for six months, subject to re-appointment.

Resident Staff comprises Resident Surgical Officer, Resident House Physician, and two Resident House Surgeons.

The Resident House Physician is Resident Officer to the Medical Wards of the Hospital under the direction of three Honorary Physicians.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three recent testimonials, to be sent to the undersigned forthwith.

Board Room. J. W. NOBLE,
July 7th, 1937. Secretary-Superintendent.

ROCHDALE INFIRMARY & DISPENSARY.
(110 Beds.) (Three Residents.)

The Board of Management invite applications from gentlemen for the appointment of SECOND HOUSE SURGEON.

The salary attached to the appointment is at the rate of £150 per annum, including board, residence and laundry.

Applications stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of the appointment may be had on application to the Secretary.

W. WYNNE,
Infirmary Office, Rochdale, Lancs. Secretary.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL (280 Beds).

Applications are invited for the following appointments:

ONE CASUALTY OFFICER;
ONE RESIDENT ANAESTHETIST AND HOUSE SURGEON TO THE EAR, NOSE AND THROAT DEPARTMENT:

commencing immediately until December 31st, 1937, at a salary of £150 per annum, with board, lodging and laundry. Candidates must be male and unmarried.

Applications, accompanied by not more than three recent testimonials, should be sent to the undersigned at once.

HY. TRUSSON,
House Governor and Secretary.

SWINDON AND NORTH WILTS VICTORIA HOSPITAL.

Wanted immediately, HOUSE SURGEON, male, British or Irish, unmarried. Salary £125 per annum. Appointment for six months, renewable. There are two residents. The hospital is fully equipped for general work and the specialities. Private beds: no obstetrics.

The post is suitable for a recently qualified man, and there is time for reading.

Apply, stating age and experience, with copies of recent testimonials, to:

K. N. KNAPP,
Secretary.

THE ROYAL PORTSMOUTH HOSPITAL, PORTSMOUTH
(Six Resident Medical Officers.)

Applications are invited for the post of HOUSE PHYSICIAN (male) qualified. Salary at the rate of £130 per annum, with board, etc. To commence duty on September 1st, 1937. Six months' appointment. Eligible on completion of term for extension or other Resident posts.

Applications, stating age, nationality, etc., and copies of three recent testimonials, to be sent to the undersigned as soon as possible, from whom all particulars can be obtained.

B. WAGSTAFF,
Secretary.

ROYAL UNITED HOSPITAL, BATH.

Applications are invited from gentlemen, unmarried, of British nationality, for the following appointments:—

HOUSE SURGEON, General Surgery and Ear, Nose and Throat.

HOUSE SURGEON, General Surgery and Fracture Service.

Salary for each appointment £150 per annum, with board, residence and laundry.

Applications, with copies of three testimonials, to be addressed to the undersigned at once, stating the appointment for which application is made.

J. LAWRENCE MEARS,
July 12th, 1937. Secretary-Superintendent.

ROYAL UNITED HOSPITAL, BATH.

HOUSE PHYSICIAN required immediately. Resident Staff of two House Physicians and three House Surgeons.

Duties include some Casualty. Salary £150 per annum, board, residence, and laundry.

The appointment is for six months, and candidates must be male, unmarried, and of British nationality.

Applications, with copies of three testimonials, to be addressed to the undersigned at once.

J. LAWRENCE MEARS,
May 31st, 1937. Secretary-Superintendent.

THE RADCLIFFE INFIRMARY, OXFORD.

Applications are invited from qualified women for the post of RESIDENT MEDICAL OFFICER to that section of the Hospital consisting of 52 beds and dealing with the diagnosis and treatment of pulmonary tuberculosis, known as The Osler Pavilion, Headington, Oxford, as from August 12th, 1937. Previous experience in a tuberculosis institution is not essential, but experience as a Resident in a General Hospital is desirable.

Appointment will be for six months in the first instance. Salary at the rate of £120 per annum.

Applications, with copies of testimonials, must be forwarded to the undersigned at the Radcliffe Infirmary not later than July 31st, 1937.

A. G. E. SANCTUARY,
July 17th, 1937. Administrator.

THE VICTORIA INFIRMARY OF GLASGOW.

APPOINTMENT OF SENIOR ASSISTANT GYNAECOLOGIST.

The Governors invite applications for the appointment of Senior Assistant Gynaecologist at the Infirmary and Bellahouston Dispensary. Honorarium £150 per annum. Particulars of the duties may be obtained from the Superintendent at the Infirmary. Twelve copies of application and testimonials to be lodged with the undersigned not later than August 21st.

JOHN W. ROBSON,
Secretary and Treasurer.
40, St. Vincent Place, Glasgow, C.1.
July 14th, 1937.

THE RADCLIFFE INFIRMARY, OXFORD.

Applications are invited for a Post as HOUSE SURGEON, which is now vacant.

The applicant appointed will have certain anaesthetic duties to perform, and will be responsible for Casualty with three other House Surgeons.

Appointment for six months, with salary at the rate of £120 per annum with board, etc.

Candidates must be male and qualified.

Applications, with four copies of three testimonials to be sent to the undersigned not later than Saturday, July 31st, 1937.

A. G. E. SANCTUARY,
Administrator.

TIVERTON AND DISTRICT HOSPITAL, Tiverton, Devon. (45 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. Six months' appointment. Duties to commence September 1st, 1937. Applications, stating age, nationality, qualifications, should be sent to the undersigned.

C. H. DEEKS,
Secretary.

THE BUCHANAN HOSPITAL, St Leonards-on-Sea. (103 Beds.)

JUNIOR HOUSE SURGEON (female) required to commence duties as soon as possible. Salary at the rate of £125 per annum. Candidates must be duly registered Medical Practitioners and applications should include three copies of recent testimonials.

FRANK HART,
Secretary.

THE KIDDERMINSTER AND DISTRICT GENERAL HOSPITAL.

JUNIOR HOUSE SURGEON (male) required. Salary £100 per annum, with residence, board and laundry. Applications, with not more than three testimonials to be sent to the Secretary, Miss Susan Smith, South Cliff, Kidderminster.

HOUNSLOW HOSPITAL, STAINES ROAD, HOUNSLOW, MIDDLESEX.

APPOINTMENT OF RESIDENT PHYSICIAN AND CASUALTY OFFICER.

Applications are invited from registered medical practitioners (male) for:

Junior House Physician and Casualty Officer, salary £100 per annum, with full board, etc., and extras.

Applications, stating age, nationality, qualifications and previous experience, together with copies of three recent testimonials, should be forwarded to the Secretary, endorsed "Appointment."

HERTFORD COUNTY HOSPITAL.
(169 Beds. Three Residents.)

Applications are invited for the post of HOUSE PHYSICIAN (male).

Salary £150 per annum, with board, residence and laundry. Duties to include Casualty. The appointment is for six months in the first instance. Applications, together with copies of three recent testimonials, should be forwarded to the undersigned.

PERCY G. BROOKS,
Secretary.

THE ROBERT JONES AND AGNES HUNT ORTHOPAEDIC HOSPITAL, OSWESTRY.
(Beds, adults, 210; children, 110.)

HOUSE SURGEON required early August, appointment for six months, with possibility of extension. Salary at the rate of £200 per annum, with board, residence and laundry. Two weeks' holiday for each six months' service. Applications, stating age, qualifications and experience, with copies of three recent testimonials, to be addressed to the Secretary-Superintendent, and to reach him not later than July 26th, 1937.

THE CHILDREN'S HOSPITAL, SHEFFIELD.
(140 Beds.)

HOUSE SURGEON required IMMEDIATELY. Salary £100 per annum, with board, residence, and laundry. Candidates (male and unmarried), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of three recent testimonials, to the undersigned.

I. H. G. GARTLAND,
Superintendent and Secretary.

WEST NORFOLK AND KING'S LYNN GENERAL HOSPITAL.

HOUSE PHYSICIAN.

Applications are invited for the above post which is now vacant. Salary £125 per annum.

To have charge of Medical and Ophthalmic beds, also to act as Casualty Officer and Resident Anaesthetist. The post, which is for six months in the first instance, offers valuable experience in both In-patient and Out-patient work.

Applications, with copies of recent testimonials, should be sent to the undersigned as early as possible.

JOSEPH E. SEARJEANT, F.C.C.S.,
House Governor and Secretary.

WESTON-S-MARE GENERAL HOSPITAL.
(80 Beds.)

HOUSE PHYSICIAN.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN at this Hospital. Salary at the rate of £150 per annum, with board, rooms and laundry. Duties commencing August 1st. Applications, stating age, qualifications, and enclosing copies of testimonials, should be addressed to the undersigned.

LESLIE J. FURSLAND,
The General Hospital. Secretary.
Boulevard,
Weston-super-Mare.

WEST HERTS HOSPITAL, HEMEL HEMPSTEAD
(114 Beds. 24 miles from Euston.)

SENIOR RESIDENT MEDICAL OFFICER required, to commence duties about August 1st. Male unmarried preferred. Salary £150, with rooms, board and laundry.

Applications, stating essential particulars and enclosing copies of three recent testimonials, to be sent at once to:

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

WOKING AND DISTRICT VICTORIA HOSPITAL (General). (50 Beds.)

REQUIRED: Male or Female RESIDENT MEDICAL OFFICER (unmarried) for August 1st, 1937. British born. Salary £120 per annum, with board, residence and laundry. Appointment for minimum period six months. Applications to reach Hon. Secretary by July 25th.

APPOINTMENTS—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District	Town or District	Town or District
CONTRACT PRACTICE	CONTRACT PRACTICE—*(contd.)*	CONTRACT PRACTICE—*(contd.)*
ABERTYSSWG MEDICAL AID SOCIETY. *(Medical Officer.)*	LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON *(Medical Officer for Medical Aid Association.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL. *(Medical Officer.)*	MID-RHONDDA MEDICAL AID SOCIETY *(Assistant Medical Officer.)*	OGMORE VALLEY, GLAMORGAN *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
GILFACH GOCH, GLAMORGAN *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT *(Medical Aid Association.)*	

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES *(All Friendly Society Appointments.)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney N.S.W.	**VICTORIA** *(All Institute or Medical Dispensaries.)*	The Honorary Secretary, Victorian Branch, British Medical Association, Medical Society Hall, Albert St., East Melbourne, Victoria.	**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon Sec., Western Australian Branch, British Medical Association, "Shell House," 205, St. George's Terrace, Perth, Western Australia.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17.				

July 21, 1937 By Order of the Council. G. C. ANDERSON, *Medical Secretary*

THE LIVERPOOL SANATORIUM, Delamere Forest, Frodsham, via Warrington. (175 Beds for the treatment of patients suffering from pulmonary tuberculosis.)

JUNIOR ASSISTANT to the Medical Superintendent. Applications are invited from male Medical Practitioners, with suitable qualifications, for the above named appointment. Candidates must be unmarried and preference will be given to applicants who have held resident medical appointments since qualification and have had practical institutional experience in the treatment of pulmonary tuberculosis.

Salary will be at the rate of £225 per annum, with board, quarters and laundry.

The appointment is normally tenable for 12 months but may be extended.

Particulars of duties and full information, together with forms of application, can be obtained from the Medical Superintendent

Forms completed, with copies of three recent testimonials, should be returned as early as possible to the Medical Superintendent, The Liverpool Sanatorium, Delamere Forest, Frodsham, via Warrington

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PRINCESS ALICE HOSPITAL, EASTBOURNE. (Voluntary General Hospital, 120 Beds; two House Surgeons.)

RESIDENT HOUSE SURGEON (male) required on August 8th, 1937. Salary at the rate of £150 per annum, with board and laundry. Applications from registered practitioners, accompanied by copies of three recent testimonials, should be delivered to the undersigned by the first post on Thursday, July 29th, 1937.

W. RUSSELL RUDALL, Secretary.

July 7th, 1937

BURY INFIRMARY (LANCS.) (127 Beds.)

APPOINTMENT OF CASUALTY OFFICER (MALE)

A vacancy as above arises on the Resident Medical Staff, and applications are invited for the post.

The Resident Staff consists of an R.S.O., a House Surgeon, and House Physician, and a Casualty Officer

In addition to his duties in the Casualty Department the Casualty Officer is also responsible for the In-patient and Out-patient work in connection with the Eye, and Ear, Nose and Throat Department

The appointment is for six months at a salary at the rate of £150 per annum, with board, residence and laundry, and the successful candidate will be expected to commence duties immediately

Applications, stating age, qualifications, and nationality, together with copies of three recent testimonials, are to be forwarded to the undersigned as soon as possible, endorsed "Casualty Officer"

Further particulars may be had on application

H. WILKINSON, Superintendent

MIDLAND HOSPITAL, Easy Row, BIRMINGHAM. (50 Beds.)

Applications are invited for the post of HOUSE SURGEON Duties to commence immediately. Salary £200 per annum, with board, residence, and laundry Applications, stating when at liberty, age, qualifications together with copies of recent testimonials, to be addressed to the undersigned.

OLIVE FURNEAUX, Secretary.

MANCHESTER ROYAL INFIRMARY.

RESIDENT SURGICAL OFFICER.

The Board of Management invite applications for the above appointment, which will become vacant on October 1st, 1937 Applicants must not be less than 25 years of age They must be registered and hold a Medical and Surgical qualification.

The appointment is for twelve months, renewable for a further period of one year, subject to the provision of the Bye-laws as to notice Salary £200 per annum, with allowance for laundry

Full information is obtainable from the undersigned, to whom applicants must send twelve copies of their application and testimonials by Wednesday, August 4th

By Order,

W. R. TINDALE, July 5, 1937. General Supt. and Secretary

THE LONDON CHEST HOSPITAL, Victoria Park, E.2, formerly City of London Hospital for Diseases of the Heart and Lungs. ('Bus, Tram and Rail, Cambridge Heath, L. & N. E. Railway.)

A vacancy for a HOUSE PHYSICIAN (male) will occur on September 1st. Six months' appointment. Salary at the rate of £160 per annum. Board, residence and laundry provided

Applications, with copies of three testimonials, should be sent to the undersigned on or before Wednesday, August 5th, 1937.

GEORGE WATTS, Secretary.

N.B.—Vacancies occur at an interval of two months.

(Advertisements continued on p. 47)

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British Medical Journal, B.M.A. House, Tavistock Sq., London, W.C.1

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CIGARS. (ENDCUT) ALL HAVANA TOBACCO. GOOD SMOKES at a low price: quality guaranteed Box of 50 for 25/-, post free.—Sole Manufacturers, J. J. FREEMAN & Co., LTD., 90, Piccadilly, London W.1 (GRO.: 1529.)

"BIZIM" CIGARETTES THESE luxurious, deliciously satisfying smokes, 50's or 100's at 6/3 per 100; 58/6 per 1,000, post free. Sole Manufacturers: J. J. FREEMAN & Co., LTD., 90, Piccadilly, London, W.1. (GRO.: 1529).

"SOLACE CIRCLES" TOBACCO THE finest combination ever discovered of Choice Natural Tobaccos. Every pipeful an indescribable pleasure 12/6 per ½ lb. tin, post free Sole Manufacturers: J. J. FREEMAN & Co, LTD., 90, Piccadilly, London, W.1. (GRO.: 1529)

WANTED FOR COLLECTION, BOOKS ON ANAESTHESIA or old anaesthetic apparatus Any date Reasonable price and postage will be paid.—Address, No 5554, B.M.A. House, Tavistock Square, W.C.1

CONVALESCENCE. EXPERIENCED LADY, with COMFORTABLE HOME, wishes care of one or two INVALIDS Excellent medical references available.—Apply, Mrs. Gilbert, "Ste Marie," Marlow Gardens, Prittlewell, Essex.

PROSPECTOR, TRAVELLER, RETURNING Africa to prospect virgin area. Secter personal knowledge. Every indication of vast deposits Would accept as COMPANION AND PARTNER (with financial interest) YOUTH or SEMI-INVALID (chest or asthma) requiring open-air life. Fullest personal details essential in reply to advertiser's Solicitor, Harold Shepherd, 24, Dover Street, London, W.1.

PRESTATYN, N. WALES, HOLIDAY; L.M.S.: Welshman's First Stop. Fine sands; golf. Small private House, accommodate 6 or 7; good cooking, good beds; Aug. 21st on.—"Casita," Grosvenor Road

TRAINED HOSPITAL SISTER (MARRIED) offers GOOD HOME, in Kent, in large, modern country house amid beautiful surroundings, to semi or chronic INVALIDS Special care to elderly people needing light nursing.—Mrs Agnes J. Walker, Hillhurst, Saltwood, Hythe, Kent.

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ASSISTANCIES

WANTED IMMEDIATELY, YOUNG, SINGLE, male, reliable ASSISTANT for large and interesting industrial practice within half an hour of Piccadilly Circus and ten minutes of the open country. Initial salary £312 per annum and all found, with an increase as soon as he proves his capabilities. Usual bond Dispenser kept.—Address, No. 4441, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY.—INDOOR AND OUTDOOR ASSISTANTS for town and country Practices, with and without view to partnership. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

WANTED TO COMMENCE AUGUST 1st Male ASSISTANT. Industrial Practice on Tyneside. Live indoor at branch surgery Salary, £350 all found. Car allowance.—Address, No. 5411, B.M.A. House, Tavistock Square, W.C.1.

WANTED, SEPTEMBER 1st, ASSISTANT Compact industrial Practice, ten miles from Birmingham Live at surgery. Prospects suitable man, £350, all found Must be British Particulars, photo.—Address, No. 5326, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY, YOUNG RECENTLY qualified Graduate to ASSIST general practitioner.—Address, No 5432, B.M.A. House, Tavistock Square, W.C.1.

WANTED ASSISTANT, MALE, FOR General Practice in large northern city Salary commencing £475. Own car Possibly prospects later. Nice house Please send full particulars to Address, No 5431, B.M.A House, Tavistock Square, W.C.1.

WANTED, ASSISTANT, MALE, OUTDOOR. Age about 30. Busy mixed Practice in Midland city Hospital and G.P. experience essential. View to partnership Salary £350. House and car allowance.—Address, No. 5407, B.M.A. House, Tavistock Square, W.C.1.

WANTED — ASSISTANT IN GOOD INDUSTRIAL practice, West Riding Yorkshire. Salary £300-£350 p.a. (according to experience), all found Car allowance. Good prospects Address, No 5412, B.M.A House, Tavistock Square, W.C.1.

WANTED, OUTDOOR MALE ASSISTANT. Mixed Practice. East Lancashire. Work light. £400 per annum Prospects to suitable man Reply stating age, religion, experience, photo Usual bond.—Address, No. 5418, B.M.A House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT, PROTESTANT, English or Scottish, in North of England Mixed Practice Salary £500 p.a. To maintain own car.—Address, No. 5434, B.M.A. House, Tavistock Square, W.C.1

WANTED, OUTDOOR MALE ASSISTANT, English, or Scotch, for large artisan practice South-west England. State age, qualifications, and experience. Salary according to experience.—Address, No. 5423, B.M.A. House, Tavistock Square, W.C.1.

WANTED, ASSISTANT IN INDUSTRIAL Practice in South Wales. Salary £360 p.a. indoor. Hospital and G.P. experience preferred.—Address, No. 5327, B.M.A. House, Tavistock Square, W.C.1.

WANTED, ASSISTANT, FEMALE, GENERAL Practice, North Midlands city. Salary £400, outdoor. Ability drive car essential. State age, qualifications, experience. Commence late September. References and photograph.—Address, No 5425, B.M.A. House, Tavistock Square, W.C.1.

WANTED, MALE INDOOR ASSISTANT, British, in pleasant semi-industrial district Glamorgan. Good prospects for suitable man Salary £300, all found.—Address, No. 5422, B.M.A House, Tavistock Square, W.C.1.

WANTED, INDOOR MALE ASSISTANT Native of British Isles. £300 p.a. Car found. Dispenser and second assistant. Apply, with photograph.—Address, No. 5420, B.M.A. House, Tavistock Square, W.C.1.

WANTED, ASSISTANTSHIP, WITH HOUSE available, by married graduate, age 28, ex-H.S., 3½ years' G.P. Own car. Good refs Free mid-August.—Address, No. 5552, B.M.A House, Tavistock Square, W.C.1.

WANTED, ASSISTANT (LADY) FOR PRIVATE and Panel Practice three partners, near Manchester Salary £250 all found, and £50 car allowance. Suit recently qualified. Work light.—Address, No 5318, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT (MALE) for large mixed Practice (with midwifery) in pleasant Lancs. town. £400 per annum, plus £50 car allowance and small unfurnished house.—Address, No. 5315, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT, pleasant country district, N. Wales. Small town with Hospital. Work very light. Car provided. Salary £400.—Address, No. 5311, B.M.A House, Tavistock Square, W.C.1.

WANTED, PART-TIME WORK, ASSIST elderly or overworked man, or run branch surgery, Hampstead or Highgate district; usually not invariably, engaged between 11 a.m. and 4 p.m. Conjoint, car, competent, married "Grosper" preferred.—Address, No. 5429, B.M.A. House Tavistock Square, W.C.1.

OUTDOOR ASSISTANT REQUIRED, MONMOUTHSHIRE. Married or single. Salary £450, to include car allowance. Furnished rooms provided. State age, nationality, and essential particulars. Usual bond.—Address, No. 5424, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT, WITH VIEW TO PARTNERship, required for old-established and expanding country town Practice in East Midlands. Recently qualified man preferred. Salary £400 and £50 car allowance. A share after 3 to 6 months by mutual agreement.—Apply, J. Camamile, A.C.A., 44, Silver Street, Lincoln.

DOCTOR (LADY) FREE AUGUST 17th, experienced hospital and general practice, wishes ASSISTANTSHIP with view, or locum work. Would travel with invalid. Not car owner, but drives.—Address, No. 5312, B.M.A. House, Tavistock Square, W.C.1.

D.M.R.E. ASSISTANT RADIOLOGIST wanted. Northern District. Experience diagnosis and therapy desirable. Hospital and private; £750 minimum guaranteed. Share later to suitable man.—Address, No. 5306, B.M.A. House, Tavistock Square, W.C.1.

OUTDOOR ASSISTANT WANTED. KEEN, reliable man interested in hospital work; preferably good anaesthetist; prospects good for right man. Industrial neighbourhood, Middlesex. —Address, No. 5433, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS

WANTED, DISPENSER-BOOKKEEPER FOR country Practice on Welsh border. Work light. State age, salary required, etc.—Address, No. 5427, B.M.A. House, Tavistock Square, W.C.1.

A LADY DISPENSER BOOKKEEPER supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Bayswater 0969), Secretary, 7, Westbourne Park Road, W.2.

A Course of Training in Dispensing and Pharmacy is given at GORDON HALL SCHOOL OF PHARMACY and Secretary-Dispensers can be supplied to Doctors. Sessions: January, April, and September.—Apply, Principals, School of Pharmacy, Drayton House, Gordon Street, W.C.1. 'Phone: Euston 3930.

D[illegible] ALIFIED Secretary-[illegible] are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSER'S BUREAU, 3, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

LADY DISPENSER (HALL), EXPERIENCED Bookkeeper, *highly recommended*, desires Post with Doctor.—Address, No. 5421, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL OFFICER—INDUSTRIAL COMPANY in London. Applicants to Box No. 4202, B.M.A., are advised that the appointment has now been made.

THE LONDON AND PROVINCIAL MEDICAL STAFF BUREAU (Licensed annually by the L.C.C.), 24b, Hereford Road, W.2, will supply qualified Dispensers, Secretaries, Receptionists, etc., without fee to Medical Practitioners.
'Phone: Bayswater 0823.

THE ROYAL ARMY MEDICAL CORPS ASSOCIATION, 85, Eccleston Square, S.W.1 (Telephone: Victoria 2722), supplies qualified Dispensers, Book-keepers, Laboratory Assistants, Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk Orderlies, Porters, Caretakers, etc., without charge to prospective employers.

THE BRITISH RED CROSS SOCIETY desires the services of a qualified MEDICAL WOMAN for their HOP-PICKING CAMP at Tudeley Hale, near Tonbridge, from September 1st, for about three weeks.
Board, lodging, laundry, camp life, and an Honorarium are offered in exchange for very light services.—Apply, British Red Cross Society, 9, Chesham Street, S.W.1.

THE "DISCOVERY" COMMITTEE HAVE A vacancy for SURGEON in the ROYAL RESEARCH SHIP, "Discovery II."
The salary offered is £475 a year, with free *messing and free uniform.*
The *appointment is temporary*, but a Provident Fund is maintained by 5 per cent. deductions from salary, to which is added a further 10 per cent. paid by the Committee.
The ship is expected to sail early in October for Antarctic waters, for a cruise of 20 months. The appointment will terminate on the ship's return. If *possible it would be desirable if the candidate* selected could begin duty about a month before the ship's departure.
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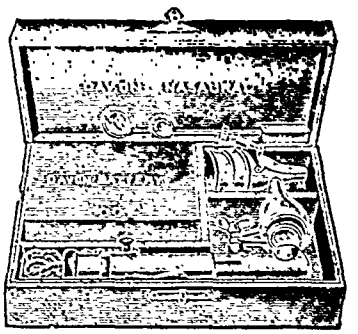
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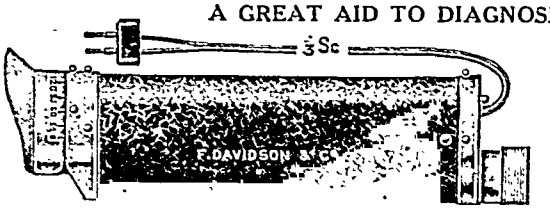
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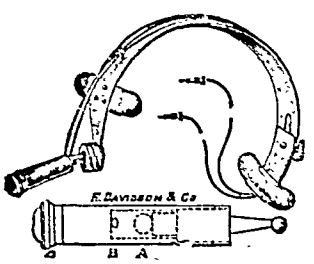
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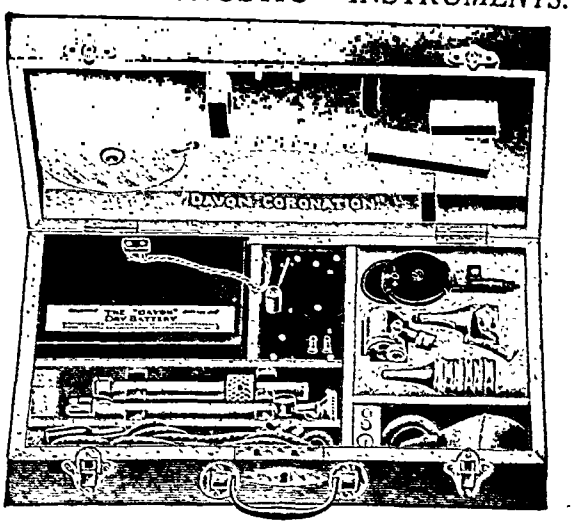
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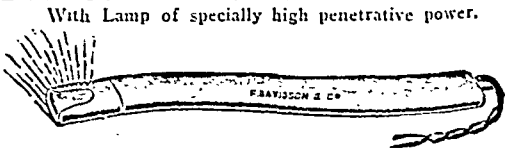
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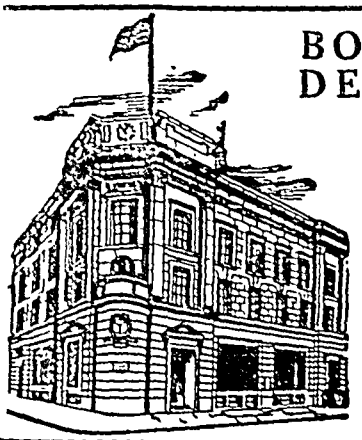
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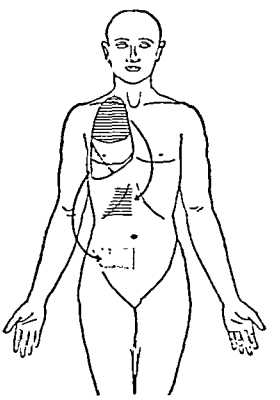
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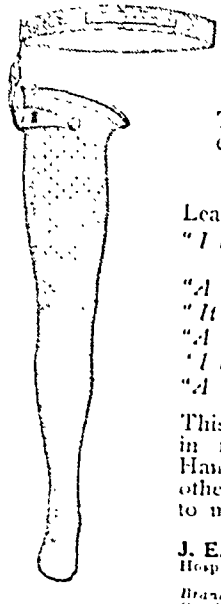
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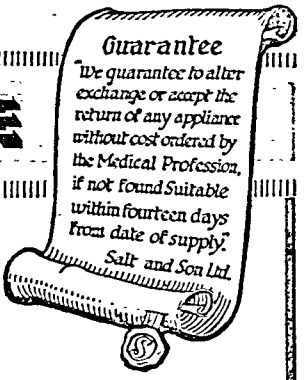
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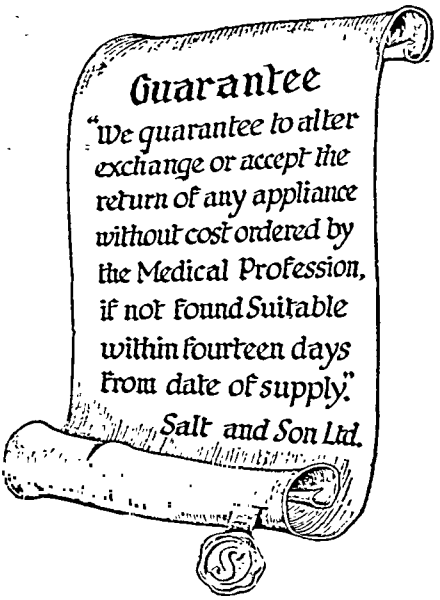
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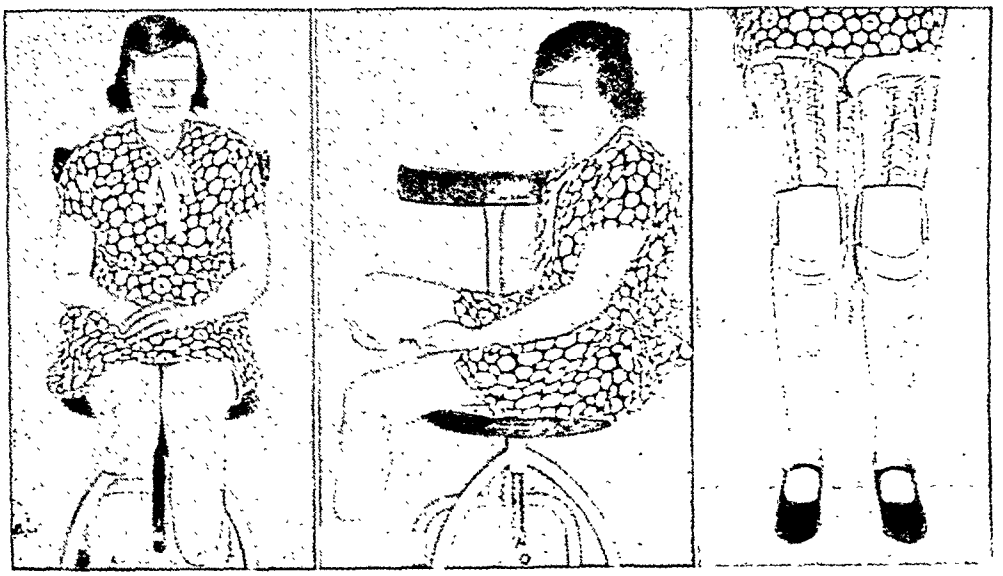
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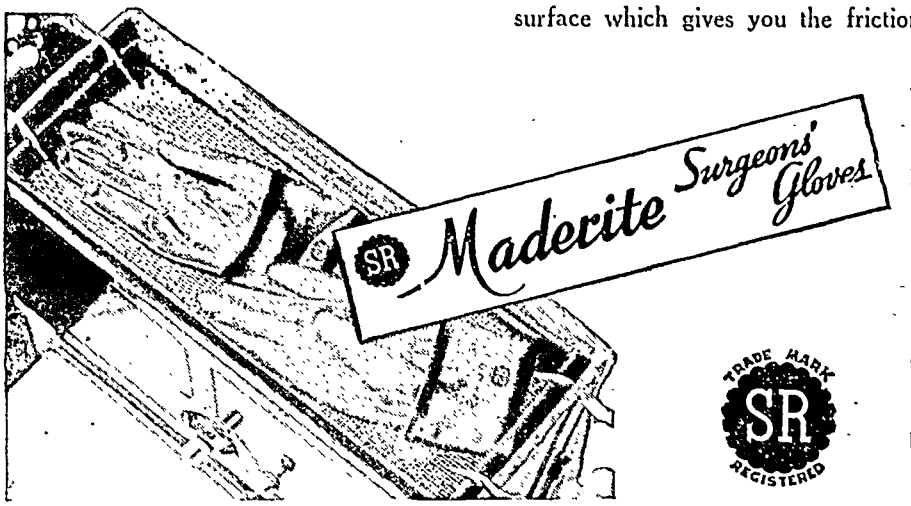
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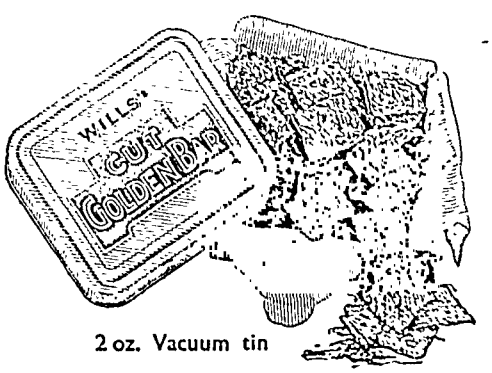
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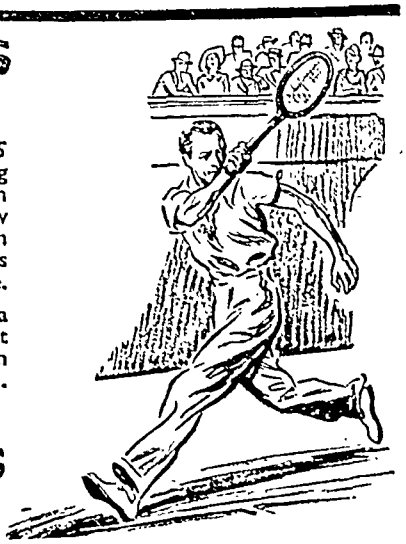
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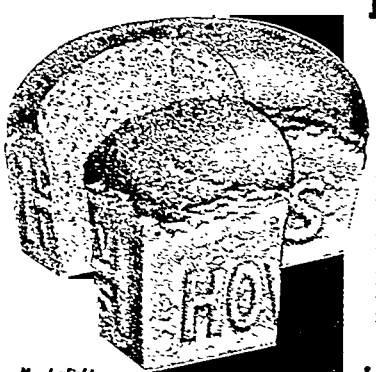
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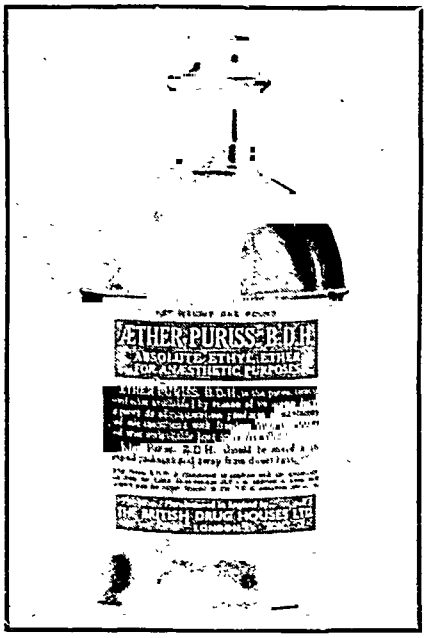
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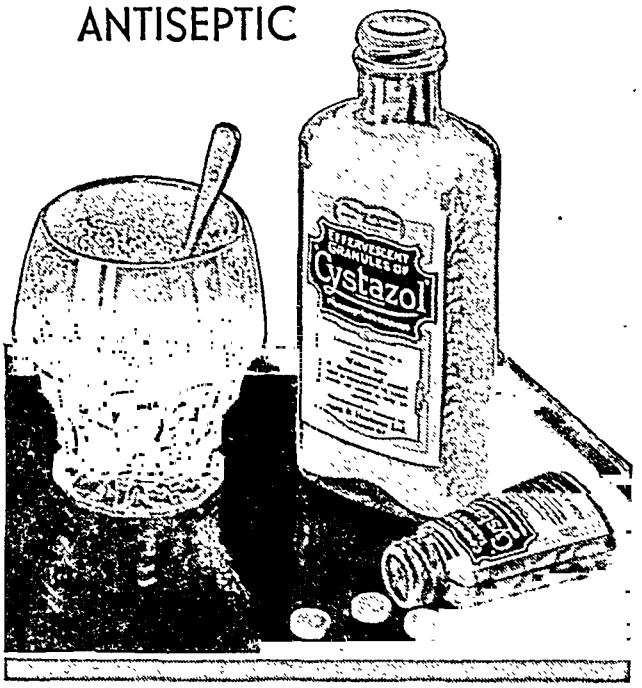
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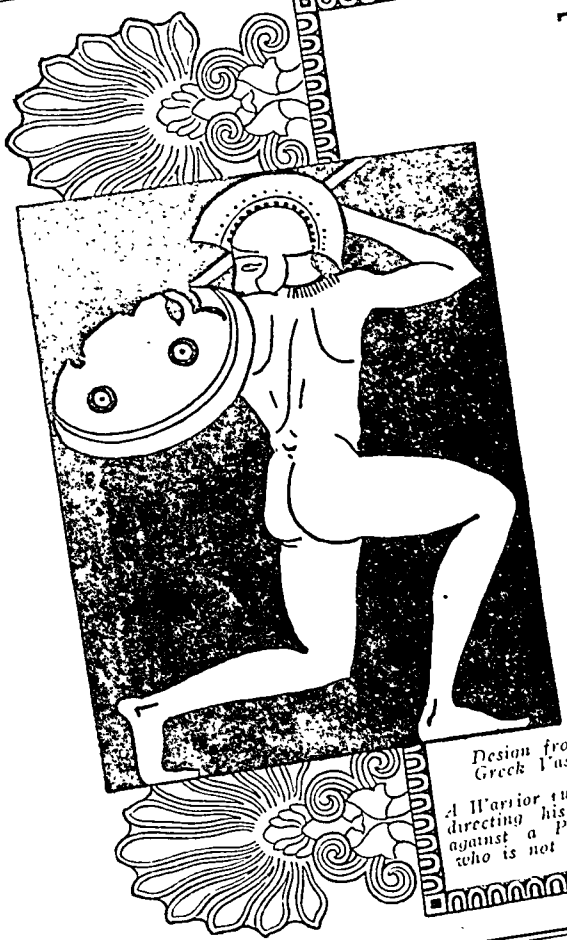
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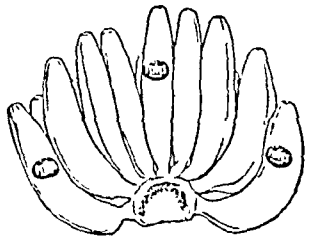
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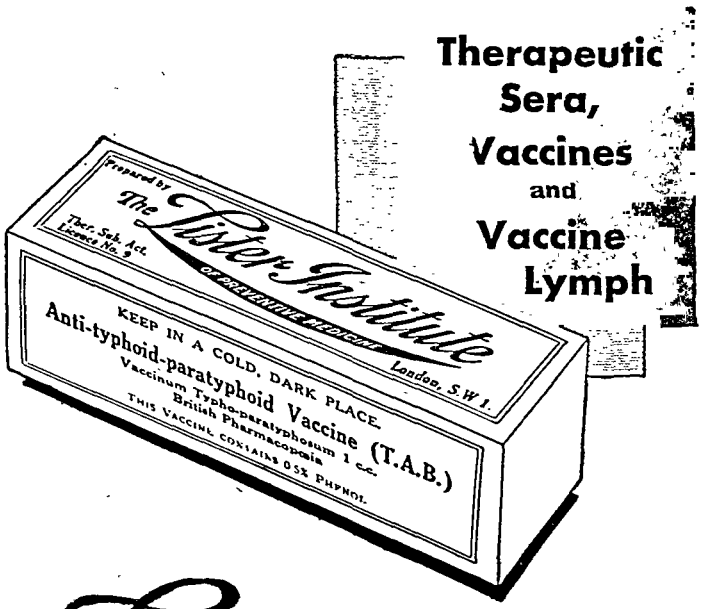
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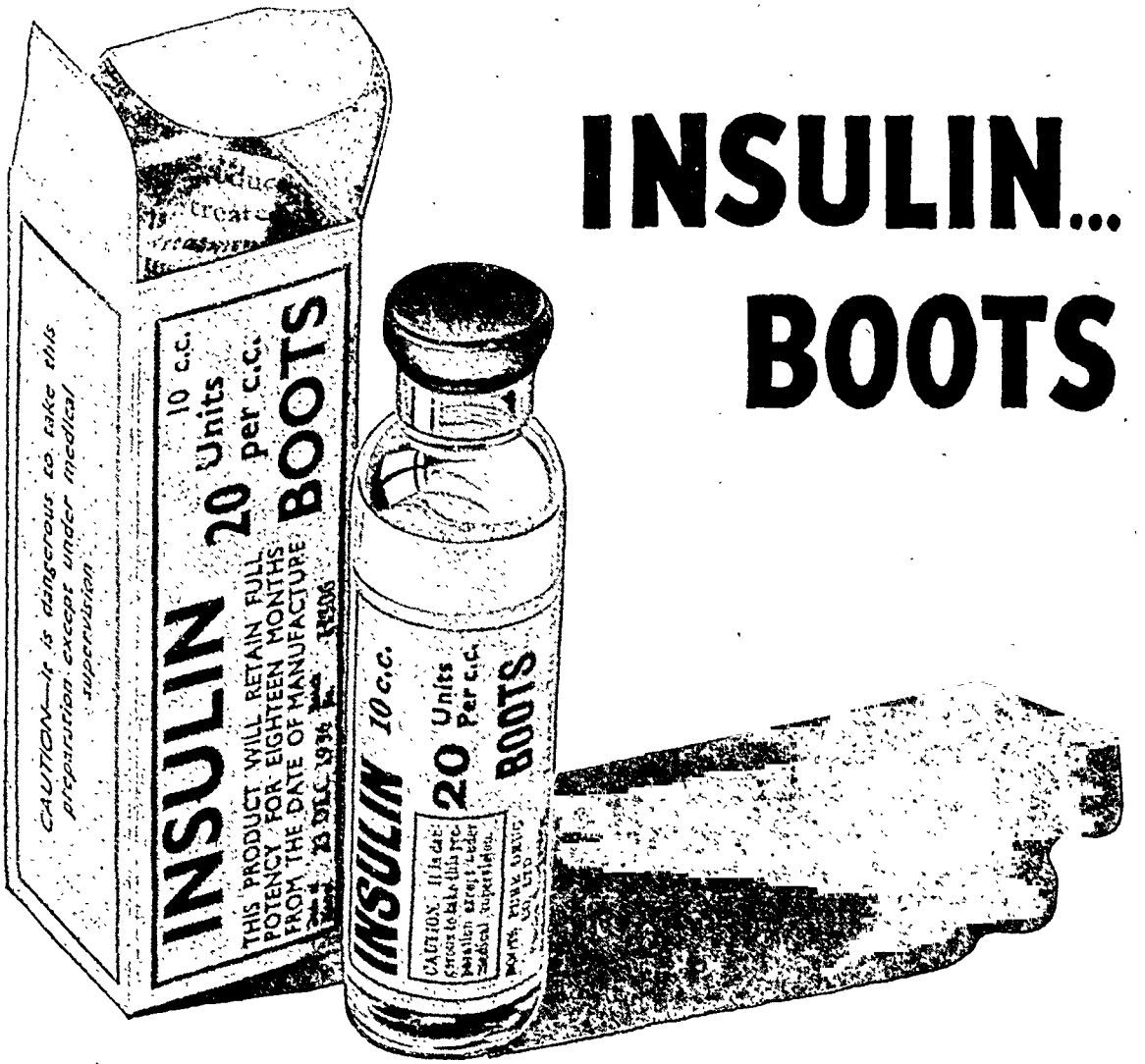
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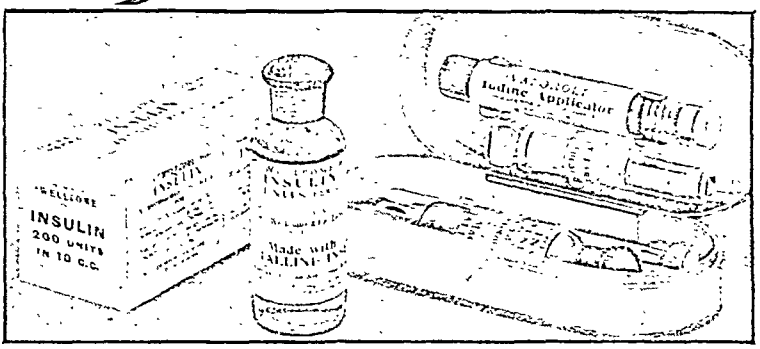
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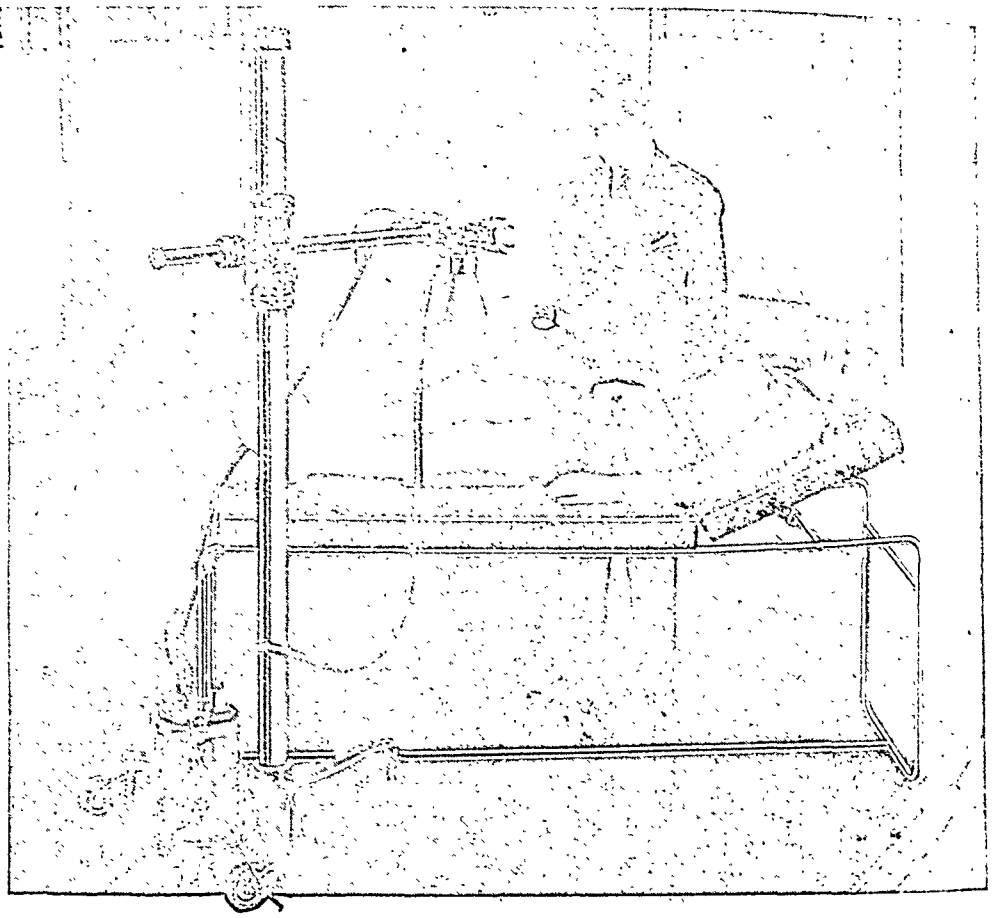
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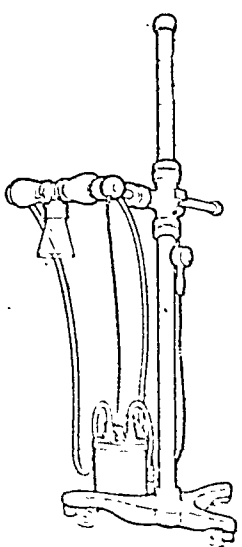
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BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 31 1937

REMOVAL OF RIGHT OR LEFT FRONTAL LOBES IN MAN*

BY

GEOFFREY JEFFERSON, M.S., F.R.C.S.

Neurological-Surgeon, Manchester Royal Infirmary; Surgeon, National Hospital, Queen Square, London

In the early days of the neurological renaissance that followed the discovery of localized function in the cerebral hemispheres the frontal lobes seemed to select themselves as the seats of the intelligence by a process of exclusion. Once the motor, the sensory, the visual, the auditory, and the olfactory areas had been roughed out upon the cortex and the tracts coming to and from them plotted with gradually increasing certainty (a task to this day uncompleted), it was but natural that speculation should be busy with those large areas still remaining which were unresponsive to stimulation and often, but not always, curiously "silent" to destructive or disease processes in man.

Those of us who "teethed" in study twenty-five years ago did so on the cortical maps of Flechsig, Elliot Smith, Campbell, Brodmann, and the Vogts, and learned that the grey matter consisted of numerous areas with different developmental histories and with different histological structures. This was true not only of the projection areas but also of the various association areas, and it was demonstrable that the frontal lobes, like other parts, had not one single homogeneous structure, but were subdivisible again into several cantonments, the most posterior of which formed the motor cortex. The work of Ferrier, of Horsley, and of Sherrington in particular, allotted definite functions to the different parts of that latter area, though our knowledge even of the apparently simple motor cortex is not yet complete (see, for example, the revival of interest excited by J. F. Fulton (1932), then by F. M. R. Walshe (1935), and more recently by D. E. Denny-Brown).

The Problem of Frontal Lobe Function

Since some areas of the whole patterned cortex were known from the early days of the newer knowledge to possess specific functions—functions evidently related to structure—it seemed to be only a question of time, and of opportunity of the right kind, before these would be allotted in a similar manner to the so far silent remainder. The deduction that distinctive histological structure portended distinctive and discoverable activities was, and still is, an irresistible one. But it remains to make these areas reveal their local secrets. We have become so deeply impressed with the importance of local areas, especially the motor, that we are almost certain to assume that function is equally local in the silent localities and that a small lesion of a frontal lobe will be likely to produce an equivalent paralysis, in this case of the intellect or in emotional control. But there is in such a conception something of the absurdity that we recognize so clearly in the earliest work on the localisms of cerebral function, that of the phrenologists Gall and Spurzheim. Clinical observation has not succeeded in solving the problem of frontal lobe function, for whilst recognizable alterations of the expected kind are quite commonly present they are in some cases lacking. Moreover, paradoxical cases are met with in which there is intellectual deficit and a lesion is discovered at operation or necropsy in quite another part of the brain. The most useful evidence of the functions of the frontal lobes (since electrical stimulation has so far failed to yield anything informative) and the solution to some of these problems ought to come from cases in which one or both were removed in man. I have no personal knowledge of a bilateral removal, but reference will be made later to the only two cases which have been carefully studied and published.

Eight Case Histories

It is the purpose of this paper to present some examples of unilateral lobectomies, both left and right, and to set down as fairly as possible what the effects have been. There are eight cases in which one or the other frontal lobe was successfully removed. Two of these patients died subsequently, one of an intercurrent disease. Six are still alive, and, since three happen to be left-lobe removals and three right, they make an interesting group for comparison. The cases are of necessity described very briefly, and a great deal of negative evidence which might be demanded for scientific accuracy has been suppressed. It is hoped that at a later date some of these cases may be made the subject of closer psychological analysis by more competent hands than mine.

It is not my intention to enter into a long discussion of the symptomatology of frontal lobe tumours, for this is well enough illustrated by the cases themselves. It will be observed that the syndrome may vary with the type of lesion and a recognizable deficit be absent, so that fits and failing vision may be the only features to call attention to disease. Something will have to be said later about the reasons for the differences—why one case should show signs and others none; and especially we shall have to discuss the results of the operations.

Case 1

A female aged 22 was referred by the late Dr. Core to the Manchester Royal Infirmary, February 19, 1932. When seen in consultation the following note was made:

The patient sits propped up in bed and seems very cheerful and comfortable. She was pleasant and co-operative, but often slow in answering, though by no means always. She did not realize the seriousness of her state, and said she was very well. She declared that she had no headache at the time nor had she suffered from it. (This was untrue—she had suffered severely from headache and had had some bad crises; a few

* Based on a paper read before a joint meeting of Rochdale, Heywood, and Oldham Divisions of the British Medical Association on April 9, 1937.

days previously she had been really very ill with it.) Questioned on the onset of her illness she was very vague, but she knew how long she had been in the hospital, her full name, and where she lived. Often a striking point was the hesitation before she answered, as if she had not heard the question at all. She was not deaf. When the question was repeated she answered, but maybe after a brief pause. She spoke rapidiy enough, and never made a mistake in the arrangement of her words or use of nouns or verbs. Another obtrusive feature was her lack of volition. She spoke without vivacity with very few movements, and in a long conversation scarcely changed her posture once. She volunteered no remarks. She was completely apathetic about food, never asked for it or showed any interest when meal-times came round. Her ideation was evidently limited, for she was unable, as it were, to weave any patterns on ideas suggested to her. She thought that she had only been ill since her admission to hospital, but in this she was inconsistent, for soon she dated her illness as far back as November. (The actual date of onset, so her mother informed me, was the previous spring, and she had had to give up work because of headache and failing vision in October. She had been treated for indigestion because of vomiting, and had seen an eye specialist, who gave her glasses.) Her headache was frontal and not lateralized. She had had several attacks of twitching in her left hand. Two very brief attacks while she was unconscious had been observed in hospital, both occurring when her headache was fierce. It was thought that her right arm was drawn up close to the body, unconvulsed, in these attacks, and that the left side was quite silent. She was incontinent the rest of the day after these attacks, although quite conscious. It was interesting to observe her lack of interest in her incontinence. She forgot about it between-whiles, and when it happened passed it off as none of her business, or another time said that she voided before she realized what was happening.

Clinical examination revealed high-grade choked disks, relative anosmia in the right nostril, slight hypertonia on the left side, but no loss of motor power, no grasp reflex, left abdominals easily exhausted, equivocal left plantar reflex, flexor right. There were no radiographic abnormalities. The diagnosis was: right frontal tumour, probably a glioma.

Operation (*March 2, 1932*).—A right frontal osteoplastic flap was turned down. On opening the dura the cortex was pale and the gyri flattened. A high posterior puncture was made to tap the anterior horn of the right lateral ventricle but struck a gliomatous cyst at a depth of three centimetres. The cannula was at once withdrawn and the cortex incised down to the cyst wall after underrunning the cortical vessels with silk. The cyst was deep, and near the midline there was an obvious neoplastic lining. It was thought that the best way of dealing with it would be to excise the frontal lobe with the tumour inside it. The slightness of the pyramidal signs denoted that the posterior end of the tumour lay definitely in front of the motor cortex. The frontal lobe was thereupon excised, but the line of section ran into gliomatous tissue, and it was seen that the tumour was too extensive for complete extirpation. The invaded area was very thoroughly diathermized. The line of section ran obliquely upwards and backwards from the lesser wing of the sphenoid, but a thin shell of the frontal lobe was left behind mesially and inferiorly.

The effects of this excision on the patient were remarkable. It might have been thought, since she was already slow and apathetic through harbouring a tumour in the frontal lobe, that frontal lobectomy would have made her worse by removing still more normal and functioning brain tissue. Exactly the opposite happened. Next day she was extremely well, and whereas she had never before spoken unless addressed, and not always then, she now spoke readily and at first rather excitedly but sensibly. She was worried about her personal appearance, for her right eye was closed by a temporary oedema. The incontinence of both urine and faeces which had been so troublesome a feature stopped within twenty-four hours of the operation. There was no trace of contralateral palsy. She professed herself at the end of a week to be entirely well; she was able to give details as to where she worked and when she stopped work, as well as points in her earlier clinical history upon which she had before been very hazy. She moved about more readily in bed, and seemed to have an interest in life that had been lacking. She took her food well, and behaved very much as did the other patients in the ward.

The histological diagnosis in this case was astrocytoma with areas of malignant change. Probably the tumour should be regarded as a glioblastoma multiforme.

The patient was put on deep *x*-ray therapy and returned home. She remained to all intents and purposes normal for eight months, when she had a return of her previous symptoms and died fourteen months after her operation. As far as the frontal lobe removal was concerned the experience was encouraging, for it demonstrated that the mental disturbance associated with a frontal tumour could be relieved by lobectomy and not made worse, a very important point and one of which little was then known. It remained to apply the operation to a patient with a tumour not so far advanced as to transgress the limits of possible extirpation. No further opportunity arose until April, 1935.

Case 2

The next case can be very briefly reported because the patient died of an intercurrent disease seven weeks after operation. The case is useful only as a piece of evidence that the frontal lobectomy did not, so far as could be seen, seriously affect his mentality.

C. B., aged 44, was transferred on March 25, 1935, to the Neuro-Surgical Service from the medical wards of the Manchester Royal Infirmary by Dr. Fergus Ferguson with the diagnosis of right frontal tumour, probably astrocytoma. He had been admitted on account of his fourth series of severe convulsions, the first having been in 1928. In each of these series his fits had amounted to status epilepticus, but after a few days he had recovered completely and returned to his duties as a clerk almost at once. After the last series he had had much more headache, and had seemed rather slow in speaking and more drowsy than he should have been. Bilateral papilloedema was discovered, and the radiographs showed a calcifying tumour in the right frontal lobe, well forward. He had performed his duties perfectly well until the last outbreak of epileptic seizures that brought him into hospital.

On April 2, 1935, the voluminous right frontal lobe containing the tumour was removed, leaving the anterior fossa empty, the olfactory nerve being clearly seen in its floor; the falx was left bare on its anterior seven centimetres. The pericallosal vessels were exposed running round the genu of the corpus callosum. The mesial surface of the opposite frontal lobe was visible. The large cavity was filled with Ringer's solution and the flap replaced. The duration of the operation was five and a quarter hours. Next day the patient was relatively well and said he wanted to smoke. On the fourth postoperative day a conversation with him was taken down verbatim in shorthand. It was designed to test his memory, and disclosed no defects. He talked about his work, his children, and his home without difficulty He lay rather quietly and did not move about the bed much, but he spoke rather loudly, and his manner was a little aggressive, though perfectly friendly and good-humoured. He complained of coldness of the feet, but made little effort to stir his limbs, though he could do so freely when requested. This lack of initiative was perhaps significant. On the other hand, he said that he would like to get up and sit in a chair as a change. His mouth and teeth, which had been very dirty, remained so, owing to keeping his tongue and lips very still. He was not incontinent. He smoked incessantly when allowed, but gradually he became more normal and quiet in manner, and was discharged to the convalescent hospital a month after operation. Two weeks later he contracted facial erysipelas and died of pneumonia in Monsall Fever Hospital.

At necropsy the operation wound was seen to be perfectly healed. There was no intracranial infection. The truncated anterior end of the right hemisphere was covered by dura firmly adherent to the cut surface. Histological diagnosis: astrocytoma.

This case is robbed of its full value by the short survival of the patient. During the first days after his operation his state was not entirely normal, although he was in possession of his faculties so far as they could be tested. After that he steadily improved, but unfortunately a really detailed inquiry into his later condition was postponed, and then was prevented by his unexpected death. I should have been left uncertain about frontal lobe function if this had been the only case in my experience, but Case 1 had already been observed, and those that follow leave no doubt at all. In the remaining six cases the patients are all alive still, and in three at least the removal of the lesion has been so complete that their continued survival is certain. The three right lobectomies will be taken first, then the three left, though that is not their chronological order. Since the technical steps involved in these operations are very similar in all cases they will be but briefly referred to.

Case 3

Right frontal oligodendroglioma. Removal of right frontal lobe. Recovery.

Mrs. L., aged 35, was referred by Dr. Carleton of Bristol on September 13, 1935. Twelve months previously she had commenced with intermittent attacks of headache and vomiting which were thought at first to be "bilious." In addition there were attacks of dizziness, during one of which she fell and hurt herself, and had to remain in bed for a week. Whilst recumbent she had another bad vertiginous episode. She vomited severely in all of these attacks. For the last few months she was no longer sick, but had headaches of great severity at intervals of about one month, commencing usually about 2 a.m. and lasting for one or two days. The pain was all over the head, but chiefly on the right side and at the back, with some stiffness of the neck. During these acute spasms of pain it seemed to relieve her if she could hold someone's hands and dig her nails into their palms; whilst doing this she stood with bent head, her face flushed, perspiring visibly, and breathing rapidly. On this account the case was for long regarded as one of migraine with a hysterical overlay. Latterly she had become touchy and irritable. Her memory was said to be bad, but very few useful illustrations of this were forthcoming. If she went to the cinema she could not remember when she got home what the film had been about (this struck her friends as remarkable). Vaguely, also, she felt that she could not concentrate. She consulted Dr. Carleton, who found bilateral papilloedema and an extensor left plantar response. She was referred to me. Acuity was normal and the fields were full; no other signs were elicited other than those recorded by Dr. Carleton: no anosmia, no hypertonus, no grasp reflexes. Stereoscopic radiographs by Dr. Twining brought to light scattered calcification low down in the right frontal lobe. Diagnosis: right frontal glioma, probably oligodendroglioma.

Her hypertensive attacks were peculiar and suggested a third ventricle tumour until the radiographs cleared the issue. She was bright and quite alert, except during or after her violent attacks of pain, but her husband was aware of an indefinable change in her. She was admitted to a nursing home, and on September 29, 1935, the right frontal lobe was removed. The line of section passed through the frontal horn of the lateral ventricle. The mesial surface of the left frontal lobe seemed to be superficially invaded by the tumour and the posterior line of section was not above suspicion. After a blood transfusion the wound was closed. She made an uninterrupted recovery. Forty-eight hours after the operation she was reading the newspaper and carried on a normal conversation with me. Her conversations were recorded verbatim, and they showed no defect whatever. She has been having deep x-ray therapy since, and has been seen from time to time.

Re-examined in March, 1937, eighteen months after operation, she says she is as well as ever in her life, and her husband privately agrees with this. Her memory, concentration, and demeanour are all normal. She does a great deal of housework, cooking and so forth, reads, sews, and listens to the wireless. All the frontal lobe signs which she had until her frontal lobe was removed have gone. I have interviewed the husband as well as the patient more than once, and have tried to get him to allow that something was amiss, but he will never admit to anything at all. She always had been a friendly sort of person, and he is sure she is not more so now; she was naturally good-tempered, but apt to lose her temper and regain it very quickly. These traits have not been modified. Histological diagnosis: oligodendroglioma.

Case 4

Mrs. E., aged 45, was admitted to the National Hospital, Queen Square, under Dr. Purdon Martin, on February 14, 1936.

Three years previously she had consulted an optician because her eyesight was failing. Four years ago she had begun to suffer from generalized headache, which sometimes wakened her in the night. Sudden jarring or sneezing greatly aggravated the headache, which was intermittent and, though not becoming more severe, was becoming more frequent. Eight months previously she discovered that her right eye was blind. Whilst in hospital in Southampton, a month before admission to the National Hospital, she had a convulsive seizure in the night about which she knew nothing. On examination there was primary atrophy of the right optic nerve, and two dioptres swelling of the left. Apart from diminution of the sense of smell in the right nostril there were no other neurological signs. Radiographs showed a localized hyperostosis over the right optic canal—an important point, the significance of which has been commented upon elsewhere (Jefferson, 1936). There were no mental and character changes, and she was perfectly orientated in time and place. She was operated upon by me on March 12, 1936. A right frontal osteoplastic flap was turned down and a large basal meningioma removed. The right frontal lobe had to be excised in order to get proper access. The operation was arduous, the duration being five and a half hours. Apart from pyrexia during the first week convalescence was smooth. Owing to this patient living at a distance contact has had to be maintained by letter. In March, 1936, she stated that she was better than she had been for years and had no disability, mental or physical, whatever, except for the blindness of her right eye. She works as a housekeeper.

The next case is too recent for any final assessment, but since it illustrates well the disappearance or at least amelioration of frontal lobe signs following removal of the lobe it is worthy of inclusion.

Case 5

Mrs. H., aged 49, was admitted to the National Hospital, Queen Square, under Dr. C. P. Symonds, on January 7, 1937. Her history as given by herself was unreliable and needed correction by her husband on many points.

Two or three years ago she began to suffer from occasional headaches and from peculiar fainting attacks in which she did not quite lose consciousness (minor epilepsy). Four months previously her husband returned home and found her in a peculiar dazed state. She was confused and unable to give any account of what had happened. She had vomited. She recovered in a few hours, and then had no recollection whatever of the incident. From that time her headache increased in severity, and was at times, especially during the night, almost unbearable for half an hour. She became very confused during the worst headaches. She tried to do her housework, but was incapable of either initiating or completing the simplest

task. She began to show definite forgetfulness and mental deterioration. She was well aware of the undependability of her memory, and would ask her friends not to tell her things, as she would be certain to forget them. On admission, questioned about an abdominal scar, she said she had had her appendix removed a good many years before. She did not know when or where. Pressed for an explanation, she said that she had not had an operation after all. She was a well-nourished healthy woman with a mild dementia. She could not remember the name of the present King. She resented physical examination in a playful, shallow way. There was bilatertal papilloedema and no pyramidal signs. Radiographs disclosed a linear calcification in the right frontal lobe. Diagnosis: right frontal astrocytoma.

On February 11, 1937, the right frontal lobe was removed, the line of section running upwards and backwards from the lesser wing of the sphenoid and cutting through the lateral ventricle. There was no great alteration in cortical pattern, but puncture disclosed a tumour at a depth of three centimetres. On taking several readings it was found to come closest to the lower surface. There was no sign of tumour breaking through the mesial surface, as is so common in apparently unilateral frontal tumours, so a complete excision was carried out. There was a suspicious area to the inner side of the ventricle, seen after it had been cut across. The duration of the operation was two and a quarter hours. A month later this patient was greatly improved. Prior to the operation she was an aimless sort of being. The ward sister reported that she would sit for hours with a plate of food and not finish it, or if she went to the bath would have sat in it all day if she had not been got out (suggesting Flourens's decerebrate chickens). After removal of her frontal lobe she gave a different impression, seeming to have a purpose—to know what to do and to get on with it. In conversation she seemed nearly normal, and lost her facetious manner. She was never incontinent after her operation, though previously she had occasionally been so. There was a slight left-sided facial weakness for a time afterwards, but no weakness in the arm or leg, and there was no grasp weakness.

I am unwilling to accept this patient as entirely free from signs at the time of writing. Her powers of memory are not yet all they should be, but her alteration for the better is striking. She was up and about the ward at the end of two weeks. Her husband has written to say that she is normal mentally, and in reply to a detailed questionary he reports her, on all points, as having no abnormalities. But in June she had a convulsion and lost ground afterwards. Her future is uncertain, not because of the lobectomy but because of the likelihood of recurrence.

Removal of Left Frontal Lobe

The remaining three cases had the left frontal lobe removed; they also are presented in chronological order.

Case 6

Mrs. W., aged 32, was admitted to the National Hospital, under Dr. C. P. Symonds, complaining of blindness in the left eye, failing vision in the right, anosmia, severe headache, and "fainting turns."

The diagnosis of left frontal basal meningioma was made and, since she did not desire to run the risks of tumour removal at that time, a right-sided subtemporal decompression was performed. She was readmitted on March 19, 1936, because her fainting attacks were becoming more frequent and for a month past her headaches had returned. She also thought the sight of the right eye was declining again. The decompression had meanwhile varied, sometimes tight, sometimes slack, but always bulging to some extent. Neurological signs were as before: left optic atrophy, blind left eye; right papilloedema, field normal save for enlargement of the blind spot. She had anosmia, and protein increased in the cerebro-spinal fluid to 200 mg. On April 30, 1936, a left frontal osteoplastic flap was turned down and a small meningioma was found growing from the falx. The superior longitudinal sinus and a section of the falx were removed, whereupon a second, much larger, meningioma was seen arising from the olfactory groove. The left frontal lobe was resected to give access to this tumour, which was removed in its entirety and its point of origin heavily endothermized. The duration of operation was five hours and forty minutes. One blood transfusion was given after four hours.

One hour after the close of the operation the patient spoke to the operator and said that she felt all right but was afraid of the ordeal which she thought she still had to undergo. Her convalescence was uneventful; at no time did she show any evidences of mental disturbance. She has been re-examined at intervals during the past eleven months, and was shown at the clinical meeting of the Neurological Section of the Royal Society of Medicine in February, 1937.

She does all the housework, shopping, and mending. She declares herself to be entirely normal in every way. She is never at a loss for a word; indeed, it was suggested that she was a trifle facile verbally. This patient has been in hospital for two long stretches, and great interest has been shown in her. She is naturally a friendly

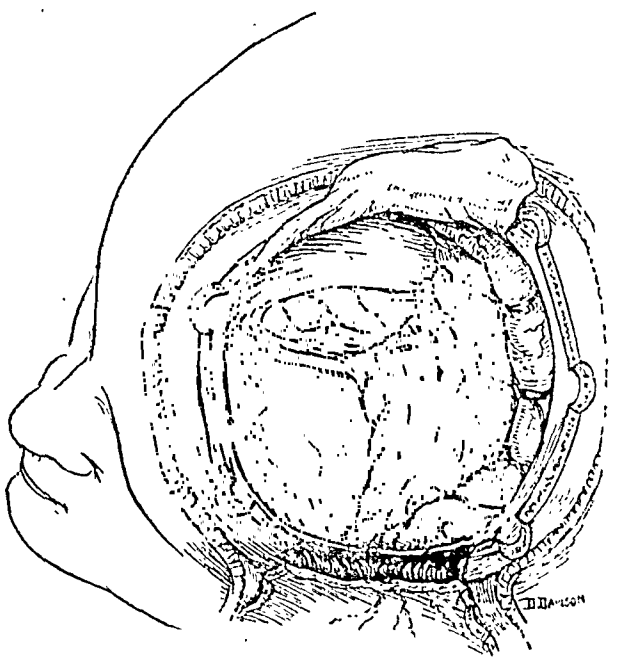


FIG. 1.—Left frontal lobe, subtotal removal.

person, and I am not convinced that her demeanour is different from that of any other individual who has had the same comparable experience in a special environment. Her pursuits at home are those normal to her social class: she reads the papers, goes to the cinema, listens to the wireless, and so forth. She has no difficulty in writing. She does not need to make shopping lists because she remembers all she wants. She has no difficulty with prices or money, and easily knows what change should be given her after her purchases. She is neither especially good-tempered nor especially bad-tempered. Possibly she is a little lacking in reserve, but, if so, this is scarcely noticeable. Views on that point will differ with the amount of deference that the observer expects, but patients of course are very variable in that respect.

Case 7

Mrs. B., aged 39, was referred on October 9, 1936, to the Neuro-Surgical Service of the Manchester Royal Infirmary by Dr. Leslie Cunningham of Liverpool with the diagnosis of left frontal tumour.

She had had headaches for over four years, usually left frontal. Two years ago she had an epileptic seizure, and she had had three since. They were severe, generalized, with unconsciousness for two or three hours. Nine months prior to admission she found that she was blind in the left eye, and for six months she had had anosmia. During the last year her memory had seemed to go, so that she found it very difficult to give a proper account of her illness. She thought that she did not always understand what was said to her, that she failed to catch the meaning, so that sometimes she did not do things asked of her or reply in a sensible manner. She had good insight into this failure on her part (as was so in Case 5), and it worried her. She was co-operative, but was inclined to facetiousness. She was not taking a gloomy view of her condition, but when this was mentioned to her she replied that she found little to be cheerful about. She knew that at times she was extremely irritable and difficult. She was much less active than formerly, and was inclined to sit about, but this she attributed to her bad eyesight and her headaches. On examination no grasp reflex was present and she was blind in the left eye. Bilateral consecutive optic atrophy was present with papilloedema. This and the anosmia were the only positive signs. Diagnosis had already been arrived at by Dr. Cunningham by means of thorotrast ventriculograms, which showed the anterior horns of the ventricles displaced to the right. Radiographs of the skull showed a normal sella and a large abnormal diploic vein on the left side in the parietal area which could not be directly related to the tumour. The pre-operative diagnosis was an olfactory groove, at least an anterior fossa basal, meningioma. Perhaps sufficient weight had not been given to the fact that she had only noticed her anosmia recently, quite three years after the onset of her troubles. On October 24, 1936, a left frontal flap was turned down. On opening the dura a dark, reddish-blue, voluminous glioma was seen occupying the left frontal lobe. It was adherent to the dura anteriorly and to the falx mesially. The superior longitudinal sinus and falx were resected for a distance of six centimetres in order to allow of block removal of the frontal lobe with its contained tumour.

The operation proved to be long and tedious; 600 c.cm. of blood followed by 500 c.cm. of glucose-gum solution were given at the end of two and a half hours, and at the close, an hour later, a further 600 c.cm. of blood. The tumour-infiltrated lobe was soft, very vascular, and difficult to handle, its adhesion to the dura being exceptionally dense. The right hemisphere was not invaded. Such areas of dura as were not easily removable and showed evidences of invasion were heavily coagulated with the endothermy unit. The line of section was clear except deep in and mesially, where the tumour changed colour and became pale. Perhaps this region represented an area of astrocytic reaction.

The patient's recovery was smooth. Except for extreme thirst she said she felt well enough. On the tenth day she became very excited and noisy, declaring that her children were outside the ward and were being prevented from seeing her. She was at that time quite out of contact and would not listen to reassurances or react to persuasion. She quieted with chloral and bromide, and next day was better. Three days later she apologized for the trouble she had given. She remembered the incident perfectly, and said that she had been mistaken in the date, believing it to have been the regular midweek visiting day. Her memory was better, and with the disappearance of her headache and slight improvement of her vision she became very much more normal. The tumour was found to be an oligodendroglioma.

The patient was re-examined on April 17, 1937, six months after the operation. She said that her memory was now remarkably good, and she gave a lot of details about her earlier history that she could not give before. For example, she told of an unreasonable outburst that she had shown seven years ago, which makes the history much longer than she had led us to believe. Except for a slight freedom of manner which was in no way unpleasant she appeared to be quite normal.

Case 8

Mr. L., aged 42, was admitted to the National Hospital, Queen Square, under Dr. Purdon Martin.

For five years he had suffered from attacks of minor epilepsy which he found difficult to describe; these were of short duration. Three years ago he had a major fit and was unconscious for half an hour. Two years ago he began to suffer from a frequent dull pain in the left forehead and around the left eye. For eighteen months his memory had been somewhat impaired for some recent things, whilst remaining good for older events. He is a cabinet-maker in his father's firm, and sometimes made mistakes in his measurements and forgot names. For nine months he had had visual impairment, the print going blurred on reading. On examination he was found to be a well-looking spare man, very slow in his reactions but well-mannered and very co-operative. There was anosmia on the right, none on the left (a paradox as it turned out). There was early papilloedema on the left, the right fundus being normal; fields were normal. There were no other positive neurological signs. Radiographs of the skull disclosed a series of confluent calcified rings low on the left frontal lobe, the inner edge just crossing the midline, no doubt below the falx. No such picture had been seen before, and it was suggested they might be calcified hydatid cysts. Whatever the lesion, it was clearly well delimited and benign, whilst it was equally certain that it was the cause of his complaints over the last five years or even longer (two undiagnosed illnesses in which he was unconscious for a varying number of days at long intervals, the first thirty-five years ago, have been omitted). The cerebrospinal fluid protein was 75 mg.

On December 23, 1936, the left frontal lobe was removed after the calcified mass had been enucleated from its interior. When the dura was opened there was seen to be marked atrophy of the anterior frontal convolutions, which were stained a dirty yellow colour. The convolutions felt very firm, and on puncture the calcified tumour could be reached at a depth of 1.5 cm. The main mass was mesial in position, so the veins entering the superior longitudinal sinus were coagulated to allow of inspection of the inner surface of the hemisphere. The tumour was then seen, and was shelled out of the left frontal lobe by dissection with wet pledgets of lintine. It had to be followed across the midline and the inferior longitudinal sinus and free edge of the falx divided to allow of its delivery from the opposite side. The anterior cerebral artery was closely adherent to the tumour and had to be cut; it gave some trouble before it was secured with silver clips. After removal of the tumour mass the shell of the left lobe which remained was seen to be so blue that it was thought wise to resect it. The operator already had had experience of two left-lobe removals to encourage him to do this. Moreover, the left anterior cerebral artery had been clipped near its origin, so that the lobe would be not only useless functionally but a likely source of trouble during convalescence. The left olfactory nerve was seen lying in the floor of the anterior fossa untouched by the tumour. The duration of the operation was two hours and twenty-five minutes.

The patient spoke at the end of an hour after the operation and gave his full name correctly. However, next day he was moderately aphasic, and during the next three days became disorientated, though his speech was better. He was incontinent. A week after the operation his incontinence had disappeared, his speech had returned to normal, and he was much clearer mentally. He made a steady recovery.

Two months after the operation he travelled down from Northampton by himself and went on to Bournemouth to a convalescent home. There he played cards with the other patients and took part in the ordinary routine. He was shown at the clinical meeting of the Neurological Section of the Royal Society of Medicine, February, 1937. He declared then that he was quite himself again; indeed, better and clearer-headed than he had been for some years. He was still slow in his manner and diffident, but he is that sort of person. A word should be added on the subject of his aphasia. He

was the only one of three cases of left lobectomy to show aphasia post-operatively, though it was of very short duration. The posterior end of the cyst-agglomerate extended well backwards behind the level of the lesser wing of the sphenoid and must have compressed the subcortical pathways well back. The disturbance was purely of "nervous shock" or diaschisis from oedema, for he recovered his speech in four days. This patient wrote to the hospital in April specially to thank everyone concerned, because he felt better than he had ever done before.

Amount of Cerebral Tissue Removed

The anatomical frontal lobe is the largest of all. It extends from the frontal pole to the fissure of Rolando, and includes the pre-frontal, frontal, and motor areas. No surgeon would remove the whole lobe, and in the cases described the frontal association "area" rather than the frontal "lobe" has been extirpated (see Figs. 2 and 3).

The lines of section have always had the same starting-point below, immediately anterior to the Sylvian point and the lesser wing of the sphenoid in order to avoid the middle cerebral artery and the insula. The incision has been carried from there up to the midline either straight or curving a little backwards. The areas of brain removed correspond to Brodmann's areas 8, 9, 10, 11, 45, 46, and 47. Area 8 has probably not been entirely removed in any of them (see Fig. 4). None of the cases had purely anterior polar removals. Of course it may be that with neoplasms the normal brain tissue has been pushed backwards to some extent so that the line of section is actually further forward than it seems to be. The surgeon can only record the state as he sees it at the time. More functioning cortex is removed with the gliomas than when the compressed brain tissue over a meningioma is taken away, so that the amount extirpated was probably least in Cases 4, 6, and 8. As for the actual technique, a lobectomy is by no means a difficult operation, and is often a preliminary to much more difficult procedures. The times taken over the various operations have been recorded, but they are only of passing interest. Some of the operations might well have been more expeditiously performed at the present time, though three were so difficult technically that saving time by cutting corners would have led to disaster.

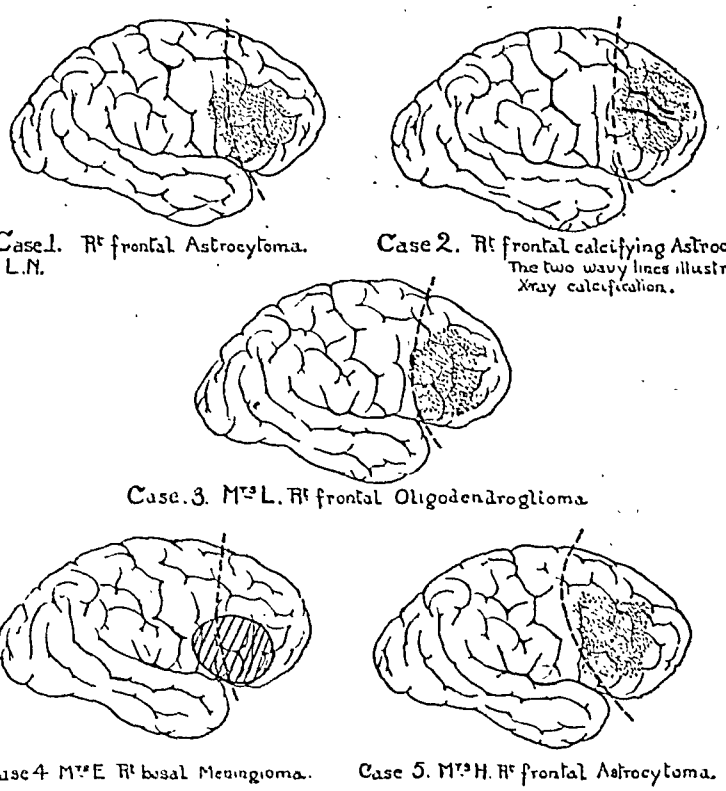


FIG. 2.—(Five cases).

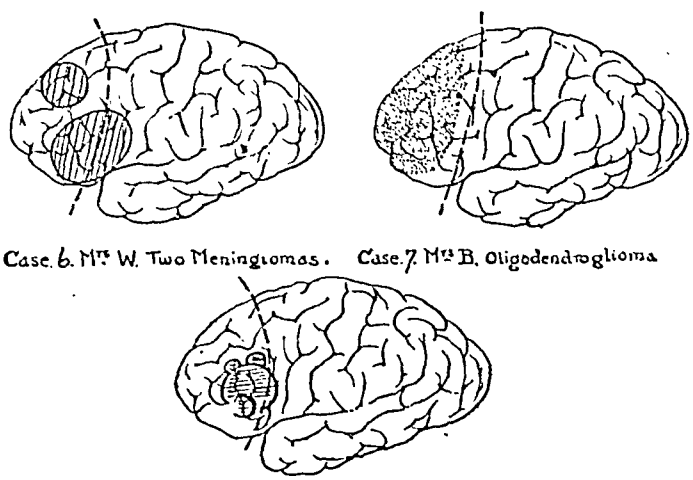


FIG. 3.—(Three cases).

Previously Recorded Cases

One of the earliest cases to focus attention on frontal lobe function was the famous "American crow-bar case" in 1848, which concerned a New England farm labourer, Phineas Gage by name. He was a popular hard-working man until his accident, in which a crow-bar 1¼ inches thick was driven by a gunpowder explosion completely through his head to fall on the rock near him. He was not unconscious, and walked away with assistance from the scene of the accident. After a severe infection which must have increased the cerebral injury he recovered so far as to be able to work at different places for twelve years, dying then in convulsions. Meanwhile he had had the foresight to sell his skull to several universities. It lies now in the Warren Museum at Harvard. Phineas Gage was converted into a "childish kind of crook (as Harvey Cushing has expressed it), was profane, obstinate, and given to outbursts of temper.

In view of the much more benign results of the frontal extirpations in the present series I have been at some pains to review this case. The crow-bar passed through the rostral end of the left temporal lobe, the left frontal lobe, the falx and superior longitudinal sinus, and the mesial surface of the right frontal lobe (see both Harlow's (1869) and Bigelow's (1850) descriptions and the skull itself). Such an extensive lesion is more in keeping with what follows and what has gone before than a sharply localized unilateral lesion would have been. However,

evidence drawn purely from traumatic material is apt to be fallacious, as we see next in Phelps's assertion (1897) that mental changes nearly always follow an injury of the left frontal lobe, rarely one of the right. In more recent times frontal lobe function has been studied by many writers. Grainger Stewart (1906) from his clinical observations denied the dominance of the left frontal lobe, and stated that mental changes were much commoner with bilateral frontal, and especially callosal, lesions than with those of one lobe alone. The present series

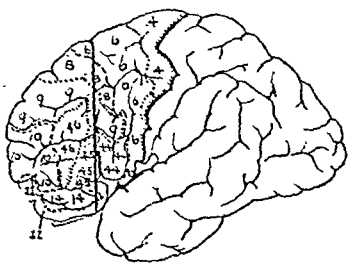


FIG. 4.—Diagram of frontal areas, Brodmann.

confirms that view. Animal experiments from the days of Goltz (1879) to Bianchi (1922), and on to Lashley, Franz, and Fulton and Jacobsen, have all pointed in varying degree in one direction—that unilateral removal of areas corresponding to those removed in my own cases led to no discoverable loss, whilst bilateral ablations did so (Fulton and Jacobsen, 1935). These two authors' ability to produce an "experimental hysteria" in anthropoids by giving them problems that were increasingly difficult to solve, and their inability to produce it after both frontal association areas had been removed because the animals were too easy-going to bother themselves when they failed, was an interesting side-light on the part played by these zones. It seems to be quite certain in experimental field work that anthropoids which have been largely trained beforehand are still quite able, after a single (either) frontal lobe has been taken out, to resume and solve the problems that they have learned, and even to add new ones to their repertory. Section of the corpus callosum on anthropoids has little or no untoward effect (Kennard and Walter, 1934), but clean section is quite another matter from callosal gliomas, which damage the lobes on the two sides.

Turning now to observations on removal of these frontal association areas in man, Dandy in 1922 described the operation of unilateral frontal lobectomy, and reaffirmed it in 1928 as a harmless procedure. He has not published analyses of the mental status of his cases, and detailed reports from whatever source are rare in the literature. In 1935 Penfield and Evans recorded three cases in detail, a fourth very briefly. One was of great validity, because the operator had known the patient intimately for forty years. All these patients showed surprisingly little deficiency after the operation; one was bad at mental arithmetic (but it may be doubted how far this can be widely applied as a psychological test), and one patient, the best-known case, was a little lacking in initiative, though able to do her housework and look after her family. In this patient, however, some growing tumour had been perforce left behind at operation, and she died subsequently of recurrence. German and Fox (1934) reported three cases with results much the same as Penfield's. Glen Spurling (1934) removed the right frontal lobe in the attack on an olfactory groove meningioma which crossed the midline, operating twice from the right side. Not only was the right frontal lobe removed, but the left was reduced to a fringe by the compression of the tumour. The actual degree of left-lobe destruction cannot be accurately estimated (see comment above on brain compression by non-invasive tumours). Spurling's patient made an excellent recovery, and psychometric tests by S. Ackerly (1935) showed her to be eventually near normal.

So much for unilateral and partial bilateral extirpations. One case only is on record in which both left and right frontal lobes have been excised in man—Brickner's case (1936). This is unique in the completeness of the post-operative analysis, only made possible by special circumstances. The record, though most instructive and exceedingly important, makes depressing reading, and no one surely will remove both frontal lobes widely again. A few remarks must be made about this case. A year and onwards after the operation he became a boastful, joking individual, with at the same time a certain amount of both voluntary inhibition, control, and synthesis of ideas. But in general he behaved like a child given to outbursts of naughtiness and difficulty, in which a sexual element was sometimes, but not always, present. Brickner states that his powers of evasion, when cornered on some point in argument, were little short of masterly. Studying this case, not alone in terms of brain removed but in the Jacksonian way, we come upon the question, With what parts of his brain were those jokes, those excuses, those mental side-slips, elaborated? Clearly with the more posterior portions of his brain. And Brickner, after exhaustive tests, concluded that there was no specific function in the frontal lobes which was not present in some degree elsewhere.

Discussion

Two points of great interest arise out of my own cases: first, that those who showed no mental alteration before the operation were unaffected by partial removal of the anatomical frontal lobe; secondly, that those who had mental symptoms were much better after the lobe had been excised. It can be concluded that removal of one frontal association area has left these patients with sufficient volume of neural tissue to ensure their being able to carry on their lives unaided afterwards (unless vision has been too badly interfered with by papilloedema beforehand). It appears to be quantity, volume, that matters most, even in man and not alone in the lower animals, as Lashley's work had suggested. No one will deny that the frontal lobes are deeply concerned in intellectual processes and emotional control, but they are not the only parts of the cerebral mass involved in these activities. It is clear that in a single frontal lobe mental activities have no closely packed, essential, or solitary locus the withdrawal of which leads to a state of dementia, partial or complete, and that the brain must function intellectually and emotionally as a whole, in the sense of Hughlings Jackson rather than in the departmental way that anatomical research once suggested. The frontal lobes cannot be regarded, either singly or together, as the "organ of mind." Pavlov proved the cortex to be a mosaic of function in which nothing was fixed except the motor and various sensory areas; it was a kaleidoscope of infinite possibilities of inhibition, adaptation, or substitution in mental and emotional processes. So that it can be concluded, from my own cases and those of others, that the reason why we have not known the exact localization of the higher cerebral functions is because they are not localized to any one small area.

Left-sided Dominance.—Many have thought the left frontal lobe to be more important than the right, and that

whilst right-sided lesions produced no great change left-sided ones did so. The evidence in favour of this is very tenuous, and my own cases go directly against such a view, for the patients were equally little affected, whichever side was operated upon. It must be conceded that once a lesion on the left side begins to go back behind the limit of the association area on the left there is a likelihood of damage to the speech centres, and no doubt it is on this account that the doctrine of left frontal dominance has grown up. An analysis of clinical material by Hyland and Botterell (1937) shows no essential difference between the two lobes apart from the aphasic element, and their conclusions on frontal lobe activities appear to be similar to those expressed here.

Cause of "Frontal" Changes

If a patient, one of whose frontal areas has been removed, has no severe frontal signs afterwards, it can be assumed that it was not purely one-sided frontal damage which was the cause of his previous disabilities. This is a very important point, but it seems to be established. In searching for another explanation two suggest themselves. The first is that it is the rise in general intracranial pressure occasioned by the tumour which is the additional agent that adds volume to the local lesion by producing widespread cerebral anaemia or oedema and interferes with the irradiation of impulses, compensation, inhibition, and so forth. Many cases are on record in which mental confusion has disappeared after a plain decompression without removal of a tumour. It must be that the successful operative management of such cases, with the consequent fall in intracranial tension and better cortical vascular irrigation, allows a resumption of normal powers by the uninjured parts of the brain. Conversely, frontal signs often appear in a high-pressure case even when the tumour is not frontal in situation. Gordon Holmes (1931) has expressed the opinion that mental symptoms are often due to high pressure irrespective of the site of the lesion. This is unquestionably true, and there is little doubt that many ill patients are psychologically abnormal not only because their suffering alters their reactions, but because their cerebral functions are impaired by anaemia. High pressure alone disturbs the mental activities of a patient more than does a local frontal tumour, because it interferes with the brain more widely than the tumour itself does; on the basis of Pavlov's view of cortical function in an integrated manner this can occasion no surprise. However, in the present series, in two cases the pressure was high and the patient had a frontal tumour as well, yet frontal signs were at a minimum. It is noteworthy that in both of these the tumour was non-invasive. This brings up the second possible factor already foreshadowed, the possibility of the tumour itself inducing some of the changes. We know that tumours which involve the primary receptor or effector apparatus often stimulate those areas to produce Jacksonian, motor or visual, or very often olfactory fits. Something of the same kind may occur in the frontal lobes; there may be some excitatory factor at the nature of which we can at the moment only guess. Such an idea was put forward long ago by Dupré and Devaux, who believed that the tumour exerts a toxic influence; but there is no clear evidence of it, and I, along with A. D. Macdonald, have failed so far to find histamine in gliomas in a few trials. I believe that the general circulatory basis plays a considerable part in the production of mental and emotional changes, but I am impressed by the differences shown by patients with invasive and non-invasive lesions. It should follow that "frontal" changes will be most pronounced when the lesion is bilateral (as in callosal tumours), or when it is invasive, or when pressure is high, or in combinations of these conditions. Moreover, it is now easier to understand the delirium of toxic conditions, general and local, and suggest new ideas in the interpretation of the various states arising out of head injuries.

It would be unwise to conclude that removal of a frontal association area will always be a benign procedure. The patients in this series were not of any considerable mental stature; their occupations were not such as would easily bring to light faults in the higher synthesis of ideas. Whilst, therefore, a considerable amount of caution must be exercised in drawing conclusions from them which would tend to the formulation of a dogma, they illustrate the more plastic conception of cortical activities current to-day. In none was the operation carried out except in the face of necessity.

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ENURESIS*

BY

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It may be said of enuresis, as Bacon said of medicine in general, that it is a subject which has been "much laboured but little advanced," for in spite of all the attention that has been devoted to it we are still very ignorant of its causes and mechanism, and largely helpless in its treatment.

For the purposes of this discussion it will be well to define enuresis as "bed-wetting," although it is true that diurnal incontinence is often present as well. On certain points we shall probably all be agreed: that enuresis should not be regarded as abnormal until the child has reached the age of 3; that it is commoner in boys than in girls; that most cases date from birth, although occasionally bladder control is lost after it has once been acquired; that it is worse in cold weather. We shall agree also, I think, that the term "enuresis" should be reserved for functional cases and that examples of incontinence associated with diabetes mellitus or insipidus, with chronic nephritis, with stone in the bladder, and with congenital lower urinary tract obstructions should be excluded, as well as incontinence occurring in cases of epilepsy or mental deficiency.

* Read in opening a discussion in the Section of Diseases of Children at the Annual Meeting of the British Medical Association, Belfast, 1937.

There may be less agreement as to the type of child likely to suffer from enuresis. Some are of opinion that it is commonest in children who are either highly excitable on the one hand or unduly phlegmatic on the other; my own experience has been that enuretics do not differ in temperament from the average.

As to the mechanism of the disorder there has been much speculation, but, broadly speaking, it may be said that the underlying defect is some failure in the neuromuscular mechanism of the bladder, so that the reflex micturition of infancy persists. Further than this very general statement I do not think one can safely go. It has been suggested that the failure is brought about by the cessation during sleep of the control exercised by the higher centres over the lower; but that surely is the case in every child, whether an enuretic or not.

Various contributory conditions or exciting causes have been put forward, some of which are of doubtful validity. I do not believe, for instance, that high acidity of the urine is a cause, and I am very doubtful about phimosis. Threadworms have been specially blamed by some, and their importance as a factor is worth discussing. On the other hand I am quite sure that adenoids and enlarged tonsils, especially if causing obstruction, may sometimes lead to enuresis—explain it as we may.

There is one interesting group of cases, however, which deserves special mention, a group small in proportion to the total number of enuretics, but perhaps larger than we think—namely, those in which the enuresis seems to depend upon a nocturnal polyuria, or, to put it in another way, upon a reversal of the normal relative amounts of day and night secretion. Such cases are not generally recognized, but they certainly exist. They may be detected either by actual measurement of the day and night urine or by finding that the specific gravity of the day secretion is unduly high, that of the night unwontedly low. To explain these cases is difficult. One is tempted to suppose that there must be a delay in excretion or some vasomotor factor at work, but these are matters we might well discuss.

There is likely to be some difference of opinion as to the part played by psychological factors in the production of enuresis. For my own part I have not found it commoner in difficult and "maladjusted" children than in others, and I confess I am not convinced of the reality of some of the alleged causes put forward by the extreme Freudians. It must always be remembered that those who work in child guidance clinics are seeing a selected material. They miss the sanifying atmosphere of the general out-patient department.

Prognosis and Treatment

As to prognosis it will be generally admitted that enuresis usually disappears before puberty, although its continuance into adolescence is all too common, and it persists even into adult life oftener than is supposed. When all allowance is made for the fact that it is commonly recovered from, it is none the less a real nuisance, for it may interfere seriously with the patient's education and choice of a career, besides being a great social handicap. As a French writer has put it, the enuretic is often "socially dead."

It is the question of treatment, however, which must chiefly interest us in such a discussion as this, and we must all, unfortunately, be convinced that there is no one plan which is sure of success; the very number of the remedies proposed is proof of this. It must also be noted that in a condition which may undergo sudden and spontaneous improvement and the severity of which is affected even by such extraneous circumstances as the weather, it is more than usually difficult to assess the value of any particular measure, and often enough the remedy which is being used when spontaneous improvement happens to set in gains undeserved credit.

General Management

As far as the general management goes there is not much room for difference of opinion. All admit the importance of a firm mattress, adequate bed coverings, and abstinence from the ingestion of much fluid in the later hours of the day. "Accidents" may be rendered less disagreeable by the wearing of a thick pad of sphagnum moss, and I have sometimes, in the case of adolescents, recommended the use of a rubber urinal such as is worn by patients suffering from incontinence the result of spinal paralysis.

The "taking up" of the child when the mother goes to bed is really only a way (I would suggest) of dodging unpleasantness. It cannot be really curative, for the normal child does not need to be so "taken up." None the less, it is a proper part of treatment.

Remote causes should be dealt with. By all means get rid of threadworms, although I cannot agree with some enthusiasts that they are the main cause of enuresis. I doubt if phimosis is worth dealing with, except on its own merits (or demerits), but I am convinced that I have seen cures result from the removal of tonsils and adenoids.

Use of Drugs

Among drugs belladonna has remained the most popular ever since it was first recommended by Bretonneau more than a hundred years ago, but its mode of action is ill understood. I usually give a dose about 5 o'clock in the afternoon and another at bed-time, gradually increasing the quantity up to a point just short of toxicity. It should be continued for some weeks and then gradually left off. Ergot also has a considerable reputation, although it is less used than formerly. It is difficult to see pharmacologically how it can do good, but I have had at least one case of the nocturnal polyuria type in which it seemed quite definitely to control the enuresis. Ephedrine has lately been recommended in a half-grain dose at bed-time, increased by another half-grain every week. It is said to act by increasing the tone of the sphincter whilst relaxing that of the bladder musculature. It will be interesting to learn the experience of anyone here who has tried it extensively. The endocrines, I think, will not help us much. A good deal has been claimed for thyroid in the case of the phlegmatic child with enuresis, but I consider the claims exaggerated. Pituitrin, from its antidiuretic action, ought theoretically to be useful, especially in the nocturnal polyuria cases, but it is an inconvenient substance to administer, and I have had no experience of it. I gather that those who have tried it have been disappointed with the results.

Psychotherapeutic Methods

The more heroic and semi-surgical procedures such as epidural injections, the passage of sounds, and so forth will, I imagine, be condemned by most of us, so we are left only with psychotherapeutic methods. As to the value of these there is considerable difference of opinion, although all are at one about the importance of creating the right psychological atmosphere for treatment by seeing that the disability is regarded in a common-sense and unemotional way and that the patient is not allowed to be either frightened or fussed. But can we do more than

this? Suggestion has been used in an endeavour to teach the child "to control the bladder during sleep." But can any child—or adult for that matter—be expected to exercise such control? Hypnotism I have never practised myself, and I have not been impressed by the results it has yielded in the hands of others. There is a form of suggestion for which success has been claimed in America and which consists in the weekly subcutaneous injection of 1 c.cm. of sterile salt solution. It is impressed upon the child at each injection that the treatment will certainly abolish the enuresis, but that if this should persist further injections will be required. For my own part I regard such treatment as a disguised form of punishment hardly to be distinguished from the use of the nurse's palm, and, besides, we should not lie to the young.

Of the more severe psychotherapeutic procedures such as Freudian analysis I cannot speak from any experience, but their use seems to me disproportionate to the object and rather like breaking a butterfly on the wheel. The value and limitations of this as of other methods of treatment in enuresis, however, it is one of the chief objects of this discussion to make clear.

CARE OF THE VOCAL CORDS IN SINGERS AND SPEAKERS*

BY

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In considering the care of the voice it will serve the purpose best if examples are drawn from experience with outstanding artists, just as, along other lines of achievement, one would take those who excelled in sport or politics. Therefore I shall point my moral by reference to some of the world's greatest singers as they have been heard from time to time at the Royal Opera House, Covent Garden, with which I have had a close connexion for over a generation. The same principles will apply to all who make exceptional use of the voice in their professions.

It is necessary first to ask, "What is singing?" and that opens up a previous question, "What is sound?" Sound is defined, from the physical point of view, as vibrations appreciable to the ear. Noise is the beating of the waves of air upon the ear-drum in irregular fashion, while in music the impingement is regular and periodic. In singing or speech the vibrations originate in an expiratory current from the lungs passing the edges of the vocal cords and setting them in motion, just as in the violin or other stringed instrument the pulling of the string creates the air waves and forms the note. The lowest audible vibration is 32 times a second; the highest, one of 76,000 times a second; but in music the vibrations employed range from 40 to 4,800, representing seven octaves.

In chest notes the entire length of the vocal cords vibrates, in head notes the length is shortened according to the note required. Falsetto notes are due to the false vocal cords situated immediately above the true ones acting as a damper on the outer part of the latter. The following table gives numerically the vibrations of the vocal cords for different voices:

	Vibrations per second	Average wave-length
Bass	87–256	12 ft.
Baritone	106–341	
Tenor	128–435	6 ft.
Contralto	160–512	3 ft.
Mezzo-soprano	192–640	
Soprano	Up to 768, occasionally higher	1½ ft.

The beauty and the carrying power of the voice depend upon the breath control, which produces the requisite vibrations of the cords kept in a properly tense condition by the nerves of the larynx, together with a proper posing of the voice to obtain resonance from the sinuses of the head, these acting as resonating cavities or sounding-boards and also amplifiers. The best voices naturally are those which have the most and finest elastic tissues in the cords. If the edges of the cords are viewed with the laryngoscope during singing they appear as sharp as razor blades in the great sopranos. Bad tuition produces tiredness and redness of the cords, overstretching of the elastic fibres, and occasionally the appearance of nodules, while exceedingly bad tuition may even break the fibres and cause minute haemorrhages.

One inexperienced teacher sent me his first twelve pupils, three of whom had torn vocal cords as a result of his curious methods.

Modern Singing

Modern singing as taught to-day started only two and a half centuries ago. When one bears in mind the very small percentage of the population who can sing in any sense that can be called singing, the much smaller percentage who can sing really well, the relatively few who take up singing professionally, the fewer still who make a success of it even after years of serious training and great expense, one is led to the conclusion that singing is not a natural endowment, that the vocal cords were not constructed by Nature for singing purposes. Singing is an acquired accomplishment, into the service of which have been pressed certain organs not intended for it. The same conclusion is suggested by the multitude of troubles that afflict even the best singers.

If this be true, then there is no such thing as a natural singing voice. I have never heard of a leading opera singer who had not been taught how to sing. Singing is an acquired art, and that being so it follows that with more definite methods of teaching, greater experience, some anatomical knowledge, and care of the vocal cords, the best voices are yet to be heard.

Although many of the suggestions in this paper apply to the speaking voice as well as to the singing voice, the demands upon the singer are much more critical. An advocate in a court of law may use his voice for five or six hours a day and for several days running with no congestion of the vocal cords. He may permit himself occasional declamation, but apparently his voice is as tireless as, one may hope, is the attention of his auditors. Singers, on the other hand, after a long and heavy opera are often thoroughly exhausted and quite unfit for any renewal of the effort next day. It must be remembered, of course, that they have to act as well as sing, that frequently they are heavily clad, and very generally have more than the normal allowance of flesh. But one has only to consider the immense number of vibrations of their vocal cords, and the force with which their voice is projected, to understand that during their performance they are like engines running at excessive speed. These high notes with heavy volume mean an enormous strain, with subsequent exhaustion.

* Read in opening a discussion in the Section of Oto-rhino-laryngology at the Annual Meeting of the British Medical Association, Belfast, 1937.

Conditions of Modern Opera

Modern opera is more exacting to those who take part in it than it was in the leisurely Victorian and Edwardian days. The aeroplane enables the tenor to fly from Munich, Rome, or Paris to Covent Garden in time for a rehearsal the day before the advertised performance. Frequently the change in a few hours from a dry and warm climate to the wet and cold conditions of London causes a slight catarrh, of which the ordinary member of the community would take no notice, but to the singer and his audience is of crucial importance. The position of the laryngologist in attendance is also onerous. He has to ask himself whether by simple measures he can get the great artist through his performance—a matter to be decided immediately, because in opera it rarely happens that should a breakdown occur another celebrity, knowing the particular role, is at hand to take his place. Last year at the beginning of the season the tenor in *Lohengrin* suddenly developed laryngitis. By a fortunate coincidence Herr Melchoir called at the Opera House at 7.30 that evening, and within less than an hour he was in borrowed costume taking the place of the other. But such happy accidents cannot be counted on in opera. When this last season opened in damp weather one after another of the singers became catarrhal, although all got through and were better next day. One artist even went through his performance with acute congestion of the middle ear. It may be mentioned that Dame Nellie Melba made it a rule to have her nose and throat cleansed each morning of her performance, and my friend the late Sir Edward Marshall-Hall found his brain clearer for having his nose and post-nasal space sprayed out each day when conducting his long cases. Such a method also helps the resonance of the voice, one of the principal qualities in voice production. It is not merely a question of regular vibrations of the cords, but in class singers it is the resonance which, when well produced, will distinguish the best from the good.

Sometimes the teacher of music will send a pupil to the laryngologist to discover whether he is a tenor or a baritone or she a soprano or mezzo-soprano. Again and and again teachers bring their pupils because of no improvement or, worse still, because of the obvious results of wrong production of the voice. It does not follow that because of a few successes all pupils should be taught alike. It is necessary for the laryngologist to have standards of voices and vocal cords in his mind, such as those of Melba, Patti, Schumann, de Reszke, Caruso, Tauber, etc., if possible. Ask these pupils to sing a few scales, or a few bars of one of their favourite tunes: or, if grand opera singers, a part of their next opera, especially after treatment. Jean de Reszke, whom I have no hesitation in describing as the greatest artist the world has ever heard, was originally a baritone. It was as such that he made his first public appearance in Venice in 1874. Then he retired for a period, during which his voice gained remarkably in the upper register, and when he made his reappearance in Madrid in 1879 it was as a tenor. From that time his great fame as a singer, especially in Wagnerian parts, can be dated. The consequence was that people with indifferent voices went to him during his many years as a teacher—he taught almost until the day of his death in 1925—in the expectation of being made into tenors. Some of them he sent over to me. Very few were genuine tenors—the majority were baritones, and would never be anything else—but all were desirous of becoming tenors, or of being able to boast that they had been taught by Jean de Reszke.

In the great operas, especially the German, practically all the tenors have baritone cords to enable them to carry on their tremendously heavy work, forcing their voices through perhaps an orchestra of 120. One has only to listen to the voice of a Siegfried—or a Brünhilde—bursting through a huge orchestra to realize the strain it must impose. Only a few can take such parts without injury to their cords. That is why singers, particularly tenors, have a very short singing life.

Another point to remember is the frequency of injury to the cords in sopranos. Melba, when near the end of her career, would very occasionally in the last act of *Faust* make an error in her production, and twenty minutes later a little mucous vesicle might have been noticed at the edge of one of her vocal cords, disappearing in a few days after rest and treatment. Tetrazzini had haemorrhages of the vocal cords on two occasions, due to a slight tearing of the fibres. Another trouble, found more especially in tenors, is the development of nodules that remain until the end of their career if they go on working, as they usually do, with insufficient rest and treatment. Yet another trouble is loss of elasticity of the fibres through overstrain by using the chest notes instead of the head notes in the high passages. This was particularly shown in the very outstanding tenor Saleza, who would have been more famous had his period not coincided with that of Jean de Reszke. Singers' voices inevitably deteriorate with age, though in this country that is perhaps less appreciated owing to the extraordinary fascination which old favourites continue to inspire. The British public always wanted Patti for as long as she would sing even "Home Sweet Home" when she was turned seventy.

Treatment

The laryngologist called to attend a singer has first to determine the nature of the complaint. It may be local or general, or both. Dismissing general or chest conditions, and confining ourselves to this department of rhino-laryngology, we find that of all local troubles by far the most common come under the head of catarrhal, affecting the nose, post-nasal space, pharynx, larynx, and trachea, or it may be only the nose and post-nasal space, or only the trachea. In this respect we are fortunate in that the vocal cords themselves are the last part of this delicate apparatus to be affected. If therefore the congestion of these areas can be reduced it may be assumed that the vocal cords will remain free. The procedure I have found most helpful is to douche the post-nasal space through the nose with an alkaline solution to which a little menthol is added. The pharynx also should be well sprayed. My usual procedure is as follows: I use an inhalation of No. 2 nebuling compound with a coarse vaporizer, and finally an inhalation through the nose, and likewise through the mouth, of kasemol in paroleine (K.P.) and menthol in paroleine (M.P.) 1 per cent. in equal parts. Before douching through the nose I spray the inferior and middle turbinate by means of a fine spray with a very small amount of 1 per cent. cocaine. My 1-oz. spray suffices for at least thirty patients; so the amount used is particularly small. Should the pharynx be in a chronic condition then a slight spray consisting of

R	Tinct. ferri perchlor....	ʒ ss
	Stovaine	gr. v
	Menthol	gr. v
	Sp. vini rect.	ʒ iii
	Glycerin	ʒ iii
	Aq. dest.	ad ʒ i

may be recommended. This mixture, which must be shaken before spraying, proves very useful in all chronic catarrhal conditions of the throat.

Should there be nodules on the cords the mixture should be sprayed direct on to the cords daily, and the patient himself should be instructed to practise inhalation of K.P. and M.P. through a coarse spray from four to six times each day. If the nose alone is congested the solution may be employed plus drops of a mixture consisting of stovaine, carbolic acid, and ephedrine, 0.5 per cent. of each in paroleine. When there is tonsillar trouble a thorough washing with the alkaline solution mentioned should be given, followed by any antiseptic which is favoured.

Tonsil Operations

A word may be added about the undesirability of operations on the tonsils in the case of established artists. These people have taken years of study to obtain their form of voice production. In a large proportion of cases a tonsil operation will bring about some alteration of the voice, and when deterioration of the voice eventually occurs, as it does naturally, it is very likely that the surgeon's intervention will be blamed. The largest tonsils I have ever seen were those of a world-famous tenor and of a world-famous contralto. The time for tonsillar operation, if this is advisable, is during the early period of training before the tone production has been permanently set. Removal of the inferior turbinates should be avoided in singers. Enlarged inferior turbinates should be treated with the galvano-cautery. Deviated septa, save in exceptional cases, should remain untouched.

Finally, the laryngologist in this special field has occasionally to deal with a type of patient of whom specialists in other branches of medicine are generally free. Acute stage fright is not unknown in all classes and callings, but when the patient is a prima donna the case becomes formidable. It does sometimes happen that a lady of repute in the operatic world who wishes to create a sensation does so, not by singing but by refusing to sing. The disturbing announcement is usually telephoned to the Opera House on the morning of the performance. It has the highly satisfactory result for the lady that her name is written large in the evening papers, but for the management it is a matter of grave concern. Even if another prima donna be nearer than the next capital she has to be solicited to sing; she is naturally reluctant to take another's place when she has had no previous publicity, and the very idea of being a substitute may offend her *amour propre*. The public, too, have to be considered. They have paid to hear one particular lady, and they demand a return of their money. To put on another opera means great difficulties in engaging fresh artists and chorus and obtaining scenery which may be under some railway arch miles away. The delicacy of the task of the laryngologist who has to give an opinion on the lady in question will be readily appreciated, as well as his courage in facing her wrath should he pronounce her fit to fulfil her contract—but as her arias remain unsung perhaps the story is better unwritten.

The Duchess of Portland has issued an appeal for "the many old trained nurses who worked for very small salaries in the past, and whose tiny savings were used to help relatives or dwindled away as they themselves became old and ill. Not many people realize that there are hundreds of them living in great poverty in lonely rooms, without enough food and warmth." Gifts, large or small, should be sent to the Duchess of Portland, c/o The Nurses' Fund for Nurses, 95, Dean Street, W.1.

THE OBSTETRICAL SIGNIFICANCE OF PELVIC VARIATIONS*

A STUDY OF 450 PRIMIPAROUS WOMEN†

BY

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During the past decade the development of roentgenological methods for measuring the dimensions of the bony birth canal has brought about a revival of interest in pelvic architecture, particularly in its relation to childbirth. The present study of pelvic mensuration represents the findings in a series of 450 primiparous white women consecutively delivered at term (their children weighing 2,500 grammes or more) in the New Haven Hospital. The system of roentgen pelvimetry we have adopted is the so-called "grid method" (Thoms, 1933; 1935), which was developed in this clinic. In addition we have employed roentgenometry of the lateral aspect of the pelvis in many instances, and in the latter part of the series we have used a newly modified lateral technique as a routine (Thoms and Wilson, 1937). The observations extend over the past three years, and the group represents all the white primiparous women who during that time have been registered for pre-natal care prior to their delivery in the hospital.

Types of Pelvis

That the bony pelvis is subject to variations in contour is not a new concept. A half-century ago William Turner (1886; 1886a) emphasized the frequent occurrence of pelvic variations, particularly as related to the superior strait. This author divided pelves into three groups—namely, dolichopellic, mesatipellic, and platypellic types—according to the pelvic index—that is, $\frac{\text{A.P. diameter} \times 100}{\text{Transverse diameter}}$. Our own classification is based largely on that of Turner; however, we employ as a criterion the length of the antero-posterior diameter of the superior strait in its relation to the length of the transverse diameter. We suggest, therefore, that for clinical purposes there are four variations in which the majority of pelves may be grouped for classification. These are:

1. Dolichopellic or anthropoid type.—The antero-posterior diameter is longer than the transverse.

2. Mesatipellic or round type.—The antero-posterior diameter is equal to or only slightly less than the transverse (the difference never more than 1 cm.).

3. Brachypellic or oval type.—The antero-posterior diameter is between 1 and 3 cm. shorter than the transverse.

4. Platypellic or flat type.—The antero-posterior diameter is excessively shorter than the transverse—3 cm. or more.

On the basis of the length of the antero-posterior diameter these first three groups (which more commonly occur) may be divided for purposes of clinical use into large, average, and small pelves, as follows:

1. Dolichopellic type: A.P. diameter 14 cm. or more, large pelves; between 12 and 14 cm., average pelves; 12 cm. or less, small pelves.

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* Read in opening a discussion in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association, Belfast, 1937.

† This study was made possible through the Research Funds of Yale University School of Medicine.

2. Mesatipellic type: A.P. diameter 13 cm. or more, large pelves; between 11 and 13 cm., average pelves; 11 cm. or less, small pelves.

3. Brachypellic type: A.P. diameter 12 cm. or more, large pelves; between 10 and 12 cm., average pelves; 10 cm. or less, small pelves.

It is obvious that the above classification is chiefly useful in depicting the shape of the superior strait. In describing a given pelvis, therefore, it may be necessary to use additional terms—for example, such terms as "mesatipellic type with narrow forepart" or "dolichopellic type with funnel outlet."

In the present series, in addition to the roentgenometric procedures mentioned above we have employed external outlet pelvimetry as described by Williams (1931); vaginal touch in the determination, when possible, of the diagonal conjugate diameter; and the usual external measurements, interspinous, intercristal, intertrochanteric, and external conjugate diameters. With regard to these latter measurements, as I have pointed out previously (Thoms, 1934), we find no useful correlation between them and the actual superior strait dimensions as revealed by roentgenometry.

Incidence of the Various Types

The incidence of the above types of pelves in the series of 450 white women is given below.

	Large	Average	Small
Dolichopellic type occurred 70 times, or 15.5% ..	6	53	11
Mesatipellic „ „ 203 „ „ 45.1% ..	17	145	41
Brachypellic „ „ 156 „ „ 34.7% ..	27	110	19
Platypellic „ „ 21 „ „ 4.6% ..	—	—	—

It will be noted from the table that the mesatipellic or round type was definitely predominant. This is an interesting fact, inasmuch as in the past many authors have assumed that the brachypellic or oval type represented the normal female pelvis. The predominance of the mesatipellic type in previous similar studies has led me to believe that nature's pelvis is round and not oval, a fact which has been emphasized by Vaughan (1937) and discussed at length by myself in a recent article entitled "What is a Normal Pelvis?" (Thoms, 1934a).

Interesting also in this series is the incidence of outlet contraction as measured by the inter-tuberal distance. When this distance is 8 cm. or less such a pelvis is designated as funnel in type. The incidence is as follows:

Dolichopellic type	.. .. ..	21 times, or 31.0%	
Mesatipellic „	.. .. ..	38 „ „	18.7%
Brachypellic „	.. .. ..	30 „ „	19.2%
Platypellic „	.. .. ..	4 „ „	19.0%

The increased incidence of the narrow outlet in the dolichopellic type is not unexpected, inasmuch as narrowing of the side walls of the entire pelvis appears to be characteristic of this group.

Incidence of Operative Intervention

In surveying the history of the labours certain facts seem to be of interest, and these will be briefly considered. The incidence of operative intervention is recorded as follows:

Dolichopellic type	.. .. ..	11 times, or 15.7%	
Mesatipellic „	.. .. ..	37 „ „	18.2%
Brachypellic „	.. .. ..	31 „ „	19.8%
Platypellic „	.. .. ..	7 „ „	33.3%

These operations are divided thus:

Caesarean section ..	.. 13	Mid-forceps operation	
Version and extraction ..	3	Low or outlet forceps	

The incidence of the low or outlet forceps, sixty times in 450 labours, deserves comment, because many of these patients might have delivered spontaneously if spontaneous birth were an object in itself. We believe, however, that in many instances where the second stage is prolonged primiparous patients may be more satisfactorily delivered by this means. Some authors have used the term "forceps control" for this indication, which is a descriptive term and should perhaps be adopted.

The Caesarean sections, thirteen in number, may be grouped according to pelvic type as follows:

Dolichopellic type	.. ..	0 times, or	0% incidence
Mesatipellic type	.. ..	1 „ „	0.5% „
Brachypellic type	.. ..	8 „ „	5.1% „
Platypellic type ..	.. ..	4 „ „	19.0% „

Ten of the above operations were on patients with small pelves in which the indication seemed to be obvious disproportion. In three there was no pelvic indication, and the operation was performed for: (1) pregnancy complicated by heart disease; (2) transverse presentation with early ruptured membranes; (3) borderline small pelvis in an elderly primipara (aged 45). The incidence of operative procedure in the series again seems to emphasize that the round or mesatipellic type pelvis is nature's pelvis, for spontaneous birth has a greatly increased incidence in this type.

Breech Presentation and Occipito-posterior Position

Breech presentation occurred in the series as follows:

Dolichopellic type	.. .. ..	7 times, or	10%
Mesatipellic type ..	.. .. ..	6 „ „	2.9%
Brachypellic type ..	.. .. ..	7 „ „	4.4%
Platypellic type ..	.. .. ..	0 „	

The relative increase of breech presentation in the dolichopellic type (10 per cent.) offers ground for interesting speculation, and whether this increase will be found in a larger group remains to be seen.

The occipito-posterior position was observed in the following cases:

Dolichopellic type	.. .. ..	13 times, or	18.6%
Mesatipellic „	.. .. ..	22 „ „	10.8%
Brachypellic „	.. .. ..	13 „ „	8.2%
Platypellic „	.. .. ..	2 „ „	9.5%

In our clinic pelvic examinations during labour are in general limited to rectal touch. It is probably true, therefore, that many cases of high posterior position which subsequently undergo spontaneous rotation to anterior position remain undetected. The above figures represent cases of posterior position of the occiput in which there was no doubt of their existence in the examiner's opinion. The comparatively high incidence of occurrence in the dolichopellic group I previously emphasized in 1933 in a paper entitled "A Type of Pelvis Intimately Associated with Occipito-posterior Position" (Thoms, 1933a).

Mortality Statistics

In this series there were no maternal deaths; six foetal deaths occurred, and these are summarized as follows:

1. 4,000 gramme stillborn macerated foetus; cause of death unknown (low forceps).

2. Stillbirth associated with hydrocephalus, spina bifida, club-feet (mid-forceps).

3. 3,500 gramme foetus; death intra partum of patient with severe pregnancy toxaemia (mid-forceps); small mesatipellic type.

4. 4,059 gramme foetus, stillborn after version extraction in small brachypellic type pelvis.

5. 3,145 gramme foetus; died two hours after mid-forceps operation in very obese patient with uterine inertia.

6. 3,510 gramme foetus, stillborn following breech extraction.

It seems reasonable to assume that the first two cases have little or no association with the type of pelvis or method of delivery, and as far as this study is concerned a corrected foetal mortality should exclude these, and is then 0.88 per cent. The gross foetal mortality for the series is 1.33 per cent.

Conclusions

It seems obvious from this and other studies that we should reconstruct our views with regard to the so-called normal female pelvis as it occurs in our adult white female population. This is evidenced by the fact that in this series the oval or brachypellic pelvis occurred in but 35 per cent. of cases. The classification here proposed seems to be of real practical value in our experience.

The chief value of exact pelvimetry by roentgen methods is undoubtedly manifest in cases of suspected disproportion. In this connexion the lateral roentgenometric technique referred to is of great importance. This is particularly true in those cases where at the beginning of labour the foetal head remains high at the superior strait and in which disproportion may be suspected.

In conducting labour in the dolichopellic type of pelvis it should be remembered that the longest diameter of the superior strait is antero-posterior and that this antero-posterior lengthening in most cases extends throughout the bony birth canal. This knowledge should therefore be useful in the treatment of cases of persistent posterior position and in directing the course of the aftercoming head in breech delivery.

Finally, with such simple roentgenometric methods at our disposal their routine use in primiparous patients seems justified and likely to be of great service.

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The annual international symposium organized by the Ligue Française contre le Rhumatisme will be held on October 9, under the presidency of Professor Laignel-Lavastine, and will be devoted to the subject of radio-active treatments in rheumatology. Physicians, radiologists, hydrologists, and surgeons who are interested in this subject are invited to attend. The papers will be published in the October issue of the *Revue du Rhumatisme* and sent to all the subscribers before the meeting. Reduced railway fare and free admission to the International Exhibition will be granted to members of the symposium. A detailed programme will be sent on application to Permanence de la Journée du Rhumatisme, 23, Rue du Cherche-midi, Paris VI[e].

TREATMENT OF TENNIS ELBOW*

BY

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"Tennis elbow" occurs mainly in tennis players, but occasionally in golfers, and more rarely in metal workers and amateur gardeners who use respectively the hammer and the trowel. There is practically never a history of injury—the pain comes on gradually during or after the favourite pastime. The most prominent symptom is pain on the outer side of the elbow when gripping, and this pain is usually much worse on gripping with the forearm pronated; indeed, the grip in the supine position is often painless. The pain may come on while grasping some trifling object like a tea-cup, which may even be dropped, but most characteristically it occurs only during indulgence in the favourite game. It may be merely a nuisance and noticed only on mishitting a back-hand shot, but in some cases the patient cannot even hold a racket. On examination there is nothing to see, but there is always a tender point, either exactly over the radio-humeral joint, on the epicondyle just above, or in the extensor group of forearm muscles. It may be difficult to locate the exact spot, but the patient can nearly always find it, and pressure on it will make him wince.

Physical Signs and Treatment

Of fifty-eight cases of which I have full notes the tender point was over the joint—front, back, or side—in thirty-two, the epicondyle in twelve, and somewhere in the muscles in fourteen; but the respective points are so close together that certainty as to the exact position is not always possible. As an example of this I would quote a case which I classified as of the muscular type and thought I could feel a bursa. At a subsequent operation the bursa was found to be a protrusion of synovial membrane from the radio-humeral joint. Clearly this should have been classified as the joint type. The only other physical sign is a slight limitation of extension at the elbow-joint, more evident and often only evident with the forearm pronated; this occurred in approximately two-thirds of my cases, and is, I believe, the essential indication for manipulation. It may be very slight and no more than a springy resistance to complete extension, which is not felt in the opposite limb. It may be so slight, in fact, that it can be overlooked. On two occasions I have noted no limitation of extension, but against my general rule have for some special reason tried manipulation. In each case I obtained further extension with a definite click, and in each case there was a quick cure. Any gross limitation of extension, such as could be measured with an arthrometer, would suggest a much more serious lesion than the condition we are considering. In cases which present this typical limitation of movement the tender point is usually over the radio-humeral joint (74 per cent.), less frequently over the epicondyle (26 per cent.), and never in the muscles themselves.

Cases with muscular tenderness are of an entirely different character. My practice has been to advise manipulation only in cases in which I found limitation of movement. The technique, which I described some years ago, is very simple. Under nitrous oxide anaesthesia

* Read in opening a discussion in the Section of Orthopaedics, including Treatment of Fractures, at the Annual Meeting of the British Medical Association, Belfast, 1937.

the elbow is forced into full extension with the wrist and fingers flexed and the forearm pronated. At the same time, in epicondylar cases firm pressure is made over the tender point with the thumb of the hand which is controlling the elbow. When this movement is carried out one of five things is observed.

1. The elbow comes straight with a click, which gives one the impression of something slipping in the joint (thirteen cases).

2. It comes straight gradually, with a feeling as if adhesions were giving way (seven cases).

3. It gradually comes straight with continued effort, but neither click nor adhesions are felt (seven cases).

4. As soon as the patient is under the anaesthetic the elbow comes straight without the slightest resistance (three cases).

5. The elbow cannot be got straight (one case). This, of course, was a failure, and will be referred to later.

The routine after-treatment is simply two weeks' rest from tennis or golf, during which time the patient is instructed to maintain by daily exercises the extension that has been secured.

Results

Of thirty-three cases so treated twenty-two were cured within a fortnight; one was improved and could play tennis at once, but was not perfectly right for six months; three others took two, three, and four months respectively. Some of the cases were dramatic. One patient, for example, could not write, and on coming round from the anaesthetic he sat down and wrote me out a cheque, and naturally we were both impressed. A large number of the cases occurred in doctors and personal friends who would not hesitate to let me know if I had failed; in fact, the frequency of the condition among doctors has been a little disconcerting from the purely financial point of view. So much for the good side of the picture. Of the remaining seven cases three were apparently cured but subsequently relapsed, and these must be considered individually. One neglected his fortnight's rest and relapsed suddenly within that period; he was a medical man and insisted on a second manipulation, which cured him. One relapsed in five weeks, and the opposite elbow also became affected; this was probably an early general arthritis which I had overlooked. One relapsed in three months: he was 51 years of age, and gave up tennis.

Of the remaining four cases one has not been traced, and though the immediate result was satisfactory I should not like to call it a cure; the other three were utter and complete failures. One of these was an abnormal case, for, though there was pain in the elbow and limitation of extension, there was absolutely no pain on gripping. The diagnosis in this case was probably incorrect, but the patient came from a far Northern town and I have had no opportunity of seeing him again. The second case should have been a cure: there was limitation of extension, which corrected with a click, and when I saw the patient a month later movement was complete. However, he still had his pain, and this case I cannot explain. The third case in which I failed is more interesting; this was the one referred to above in which I did not succeed in forcing complete extension. This patient went to Blake in London, who also failed. A year later he was cured by manipulation by the trainer to one of our local football clubs. He very kindly told me all about it, and it is clear that the trainer succeeded in securing full extension, which both Blake and I had failed to do.

It appears, therefore, that, taking limitation of extension as an indication for manipulation, twenty-seven cases out of thirty-three were cured, and one other was subsequently cured by manipulation elsewhere. During the same period six cases were seen in which manipulation was advised but for some reason was not carried out by me. The ultimate fate of these cases is interesting in view of the possibility of spontaneous recovery. I have succeeded in tracing five. Three when last heard of were still unrelieved: one had the manipulation done by an osteopath and was cured, and one recovered after a few weeks' rest and massage.

Conclusions

We are justified in saying, therefore, that when the typical syndrome is present spontaneous cure is unlikely, and that manipulation gives an immediate cure in two-thirds of the cases and a slightly delayed cure in another one-sixth, making five-sixths in all.

Cases with muscular or epicondylar tenderness and no limitation of movement are in quite a different category. Some of them are suffering from what, to conceal our ignorance, we call muscular rheumatism or fibrositis, and the part which is over-used is naturally affected first. They soon show lesions in other parts of the body. I have seen three cases which started as apparent tennis elbow and subsequently developed a generalized fibrositis. Most of the muscular cases, however, are simply the result of overstrain, and a prolonged rest is the best, though far from welcome, treatment.

Pathology

I have left this to the end because it has to be deduced from the results of treatment. I believe that the common type of case with joint tenderness and limitation of extension is due to a fraying of the thin edge of the coronary ligament and the nipping of a semi-detached portion between the bones. My reasons are as follows:

1. The condition is frequently cured dramatically by a manipulation which produces a click.

2. It may relapse suddenly and be cured by a further manipulation. This happened to a medical man, referred to above.

3. In a case treated without anaesthesia the patient was certain that something had slipped back into place. He came to me in the middle of an important tournament and said he could not even hold a racket. A few hours after manipulation I watched him play a fine game.

4. On one occasion I opened the radio-humeral joint and found the thin edge of the coronary ligament frayed out as I have suggested.

5. The similarity to a displaced internal semilunar cartilage is very striking. Curiously enough, my manipulation for tennis elbow is exactly analogous to Sir Robert Jones's manipulation for reducing a knee cartilage.

I believe, therefore, that the dramatic cure that occurs in some cases is due to the freeing of a frayed edge of the coronary ligament which has got displaced between the bones. Cases with epicondylar tenderness are also often cured by manipulation, always provided there is limitation of movement, but I have noticed that it is seldom so dramatic as in the joint type. Patients often say that the elbow felt better from the first, but that it was a few weeks or months before it became quite right. I can only suppose that some tense bands, which were painful on being stretched, are ruptured completely by the manipulation.

Clinical Memoranda

Succinic Acid Treatment of Diabetic Ketosis

Dr. Korányi and Professor v. Szent-Györgyi have just published an important paper on their successful treatment of diabetic ketosis by succinic (amber) acid administered by mouth (*Dtsch. med. Wschr.*, 1937, **63**, 1029). With the chemical theory which they advance to explain its action we are not at present concerned, but with the five cases successfully treated the province of diabetic therapy is immediately involved. In four severely ketosed insulin cases the records, which read convincingly, show that, even after the omission of insulin, 10 grammes of succinic acid by mouth removed all ketosis in two to three days and much smaller doses subsequently prevented any recurrence of acetone bodies in the urine. Hyperglycaemia and glycosuria were scarcely at all reduced. A fifth case gave less definite results. From their clinical experiences they seriously suggest the possibility of treating severe diabetes with succinic acid instead of with two or three injections of insulin a day. At the same time they think their results need confirmation by other workers.

Unfortunately an English newspaper published in June the hopes raised by this new oral treatment—even before the above scientific paper was produced. Since then we have been mildly pestered by patients wanting the new amber acid instead of insulin, and we feel that we should publish at once the *completely negative and clear-cut results* we obtained on two patients in June. This experimental trial was undertaken at the suggestion of the Medical Research Council, who were requested by Professor Szent-Györgyi to give the treatment a trial. Two elderly women were chosen for the experiment; both showed a heavy ketosis and were judged to require insulin treatment as diet had failed to control the diabetes.

CASE RECORDS

Mrs. A., aged 64, had suffered from pruritus vulvae intermittently for two years, and an acute thirst for only two weeks. She was thin and wasted. Mrs. B., aged 59, had had diabetes for four years which had been treated intermittently by restricted diet. Her large face and hands suggested acromegaly: a radiograph showed a much enlarged pituitary fossa, so that her condition was presumably a type of pituitary diabetes.

On admission to hospital, after a period of dietetic treatment as out-patients, both women had a hyperglycaemia of from 220 to 300 mg. per 100 c.cm., and excreted constantly between 3 and 5 per cent. of sugar in all five samples of urine tested daily. The ketosis was uniformly heavy, Rothera's nitroprusside test being deep opaque purple (+++) and Gerhardt's ferric chloride test giving a faint positive reaction in about half the specimens passed. Throughout, the degree of ketosis was judged by these two tests and no quantitative estimations were carried out.

On admission both patients were kept in bed and placed on a diet of 100 grammes carbohydrate, 75 grammes protein, 150 grammes fat, and this was unchanged. The ketosis remained constant for three days, and treatment with succinic acid was then started. Doses of 10 grammes, the biggest dose suggested by the above authors, were given for one week, in capsules to one patient, in liquid form to the other, who could not swallow capsules. The ketosis became progressively heavier and the Gerhardt test changed to a deep red colour (+++) in every sample passed. The hyperglycaemia and glycosuria were unaltered. At the end of a week it was clear that the ketosis was getting progressively worse rather than better, and insulin treatment was begun and, as usual, rapidly removed the ketosis.

The only real difference in experimental conditions between *the four successful reported* cases and our two failures was the fact that in the former cases the patients had been on insulin before the experiment and ours had not. The diets used were not so materially different as to explain the opposed results. Four successful cases and two failures prove nothing. But it is clearly too soon to advise the treatment of diabetic ketosis with succinic acid instead of insulin.

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Two Cases of Perforated Peptic Ulcer

The recent commentary in these columns on gastric perforation in a tabetic (March 6, p. 497) prompts me to record two further cases of perforation.

CASE I.

A man of 50, who had been drinking heavily for some time, had an acute attack of abdominal pain while in a public-house. He managed to walk home, and when I saw him two hours later was a little drunk and complained of pain above the pubes and in the penis. His temperature and pulse were normal, and there was no rigidity of the abdomen. In view of the pain he mentioned I passed a catheter and withdrew a few ounces of normal urine. He gave a history of indigestion for the past few months, but he had not vomited at the onset of the attack. There were no other signs or symptoms.

Three hours later he was in coma. His pupils were dilated, his face flushed, his breathing stertorous, his reflexes absent: *he gave the impression of a man deeply anaesthetized.* While I was preparing to carry out gastric lavage, on the assumption that it might be a case of alcoholic coma, he died. Post-mortem examination showed a large perforation on the lesser curvature, with the peritoneal cavity full of fluid which had once been beer.

The unusual features were the absence of rigidity, tenderness, and localizing signs, and the very short period—about six hours—between perforation and death. It seems possible that these are due to one factor—namely, the sudden release into the peritoneal cavity of a large quantity of alcohol. At first it acted as an anaesthetic, masking the pain and preventing the rigidity, while later it paralysed the central nervous system and caused the man's death.

CASE II

A man of 37, while working as a labourer, was seized with acute pain in the right hypochondrium of such severity that he fell down. An hour later he was pale and shocked, with a subnormal temperature and a pulse of 100, and still in great pain. There was an area of tenderness and rigidity in the right hypochondrium, but nowhere else. There had been nausea but no vomiting at the beginning of the attack, and there was no history of indigestion at any time.

After an hour's observation the area of tenderness had increased. At operation I found a small perforation of the duodenum, about a quarter of an inch in diameter, surrounded by an indurated area about an inch across.

The point of interest here is the complete absence of any previous symptoms. It is difficult to realize that ulceration can proceed to the point of perforation without giving any pain. I have questioned this patient further, and he still maintains that he "does not know what indigestion is." Right up to the time of his perforation he could eat and enjoy anything that was placed before him.

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Reviews

DICTIONARY OF PATHOGENIC BACTERIA

Dictionnaire des Bactéries Pathogènes pour l'Homme, les Animaux, et les Plantes. By Dr. Paul Hauduroy, Dr. G. Ehringer, Professor Ach. Urbain, Dr. G. Guillot, and Dr. J. Magrou. (Pp. 597; broché 120 fr., relié toile 140 fr.) Paris: Masson et Cie. 1937.

In this dictionary of pathogenic bacteria by Hauduroy, Ehringer, Urbain, Guillot, and Magrou some 650 organisms have been described, embracing all those bacteria which have been found to be pathogenic for men, other animals, and plants. The book thus has a wider appeal than a purely medical one. The nomenclature followed is that of the American Society of Bacteriologists, the various synonyms being included, and the orders, families, genera, and species within the genus are arranged alphabetically. Since there are probably still some bacteriologists who are not thoroughly familiar with the American classification, a summary of this in chart form at the beginning of the book would have been a useful addition. In a volume of this size the description of individual species is necessarily rather brief, and the space alloted varies to some extent with their importance as a cause of disease. However, the main morphological, cultural, and fermentative characters of the different bacteria are adequately described, but at times serology does not get the full treatment it deserves. In these days when antigenic analysis has attained such prominence and its application in the identification of human pathogens has become so far-reaching, this aspect of the subject might have received more attention. For instance, the many varieties of streptococcus which have been named from time to time are considered under separate names, and no doubt the information given would enable a label to be attached to any given streptococcus. But the use of serological methods probably indicates a more useful separation of the genus into species and types, and this procedure is now receiving greater recognition.

The volume has a useful appendix, which sets forth the antigenic and biochemical reactions of the *Salmonella* as defined by the subcommittee of the Commission on Nomenclature of the International Society of Microbiology. The serological and biochemical reactions of the dysentery bacilli are also recorded here, and in five further tables the metabolic activities of six genera of Gram-negative bacilli are set out in such detail as to allow of differential diagnosis. This book should be of use to the bacteriologist more particularly in the tracking down of the less common species of bacteria encountered in the course of general bacteriological work.

MIDWIFERY IN THE TROPICS

A Textbook of Midwifery in the Tropics. By V. B. Green-Armytage, M.D., F.R.C.P., F.C.O.G., Lieut.-Col. I.M.S. (ret.), and P. C. Dutta, M.B., F.R.C.S.Ed., Capt. I.M.S. Second edition. (Pp. 447; illustrated. 12s. net.) London: Butterworth and Co. (India) Ltd. 1936.

The fact that a second edition has appeared within four years is proof that this book was needed and is appreciated. The staccato style and the manner in which the book is written are not only convenient for students studying in a foreign language, but allow of much material being compressed within a relatively small compass. Very little space is devoted to theory, and in these days of composite authorship the didactic dogmatism is welcome and refreshing. The chapter on diseases associated with pregnancy is concise and adequate, but it is surprising that typhoid fever is not accorded a single paragraph. There are many, particularly in America, who will not agree with the advice to give women in malarious districts 6 grains of quinine daily throughout pregnancy. It is surprising that the authors do not advocate the routine instillation of silver nitrate drops into the infant's eyes, and it is disappointing that they make no mention of rectal examinations, for there is no need, as implied, to make a vaginal examination to discover whether labour has begun. One other criticism must be made, and that is the freedom with which Caesarean section is advocated. Not only is it advised in cases of "failed forceps" associated with occipito-posterior position, but in the section on uterine inertia complicating breech presentation the following sentence occurs: "It is better to do Caesarean section than lose the child." Such treatment may possibly be best in the authors' hands, but would appear to be dangerous teaching in a textbook for students.

This is an excellent book, remarkably free from typographical errors. It contains a surprising amount of information, and is to be heartily commended not only to students in India but also to those in this country.

TREATMENT OF INFANTILE PARALYSIS

Infantile Paralysis and Cerebral Diplegia. By Sister Elizabeth Kenny. (Pp. xxviii + 121. 21s.) Sydney: Angus and Robertson Ltd. London: Australian Book Company, 37, Great Russell Street, W.C. 1937.

Even if the development of paralysis in acute anterior poliomyelitis could be prevented, the grave problem that this disease presents would not be completely solved. There would still be many cases in which the condition escaped recognition in the earliest stages and which progressed to frank paralysis. Treatment of the established condition will, therefore, for long remain an important consideration. Treatment during the stage of recovery may be summarized as follows: splinting of affected muscles in a position of relaxation from the first; physical treatment begun four to ten weeks after the acute onset, the most important item being graduated exercises; strict recumbency in all cases where anti-gravity muscles are involved; treatment to be continued until recovery is maximal. Unfortunately it is found that a certain number of cases, treated carefully from the first, show very incomplete recovery, and the permanent disability is sometimes serious. Anyone who has had experience of such cases would welcome a new form of treatment that gave uniformly good results. The anguish of the parents of a splendid child who has been stricken with paralysis is not easily forgotten, and it is a sad business to talk to them when it has become apparent that more or less permanent paralysis is certain.

Sister Elizabeth Kenny of Queensland has evolved a system of treatment for which astonishing results are claimed. It has aroused interest and controversy in many parts of Australia, and is now the subject of an investigation in the Commonwealth by a Government Commission. Her methods are described in a book entitled *Infantile Paralysis and Cerebral Diplegia.* She defines the general principles for the treatment of poliomyelitis as follows: (1) maintenance of a bright mental outlook; (2) maintenance of impulse; (3) hydrotherapy and remedial exercises; (4) maintenance of circulation; (5) avoidance of the generally accepted methods of immobilization. The remedial exercises differ little from those usually employed, except that they are begun during the acute stage of the disease and given with great frequency. It is the abandon-

ment of splinting and rest in recumbency (all of which work has been done at out-patient clinics) that is so startling. It is apparently unnecessary to rest a paralysed deltoid by fixing the arm in abduction, or the abdominal muscles by keeping the patient in bed—a complete denial of accepted physiological principles.

But it is the results that matter. Sister Kenny has been responsible for the treatment of about 600 patients, and a small number of them were investigated by a surgeon, Mr. J. V. Guinane. He states that all recent cases have been totally and permanently cured and all long-standing cases have been improved. It is safe to say that such results have never before been reported, and the reader will look eagerly for detailed reports on typical cases. There are none—not a single complete history and no muscle charts. It is this that makes Sister Kenny's book so disappointing, for it is robbed of much of its scientific value through the absence of documentary proof of results that it is the bounden duty of a scientific writer to produce when special claims are made for a new form of treatment. For the same reason we cannot profitably prolong this review. It would have been necessary to examine the conditions under which observations were made, the nature of the controls, and the question of trick movements. Sister Kenny may rest assured that in spite of her departure from widely recognized principles (in the treatment of infantile paralysis) her work will receive sympathetic attention in this country. Let us hope that the official report of the Commission in Australia will be entirely favourable, for no one can be satisfied with things as they are now.

AIR RAID PRECAUTIONS

If Air War Comes. A Guide to Air Raid Precautions and Anti-Gas Treatment. By L. Haden Guest, *M.C.*, M.R.C.S., L.R.C.P. Foreword by the Right Hon. Viscount Dawson of Penn. (Pp. 88. 1s. net.) London: Eyre and Spottiswoode. 1937.

Gas, A Synopsis of Defence Against. By John Fenton, M.B., B.Ch., D.P.H. (Pp. 52. 1s. net.) London: Dale, Reynolds and Co. 1937.

If Air War Comes is a sensible book on a very difficult subject. Works on defence against air raids divide themselves into two classes—those written by persons with experience of war and those written by persons without such experience; Dr. Haden Guest's belongs to the former. He gives a reasonable estimate of the amount of damage likely to be inflicted by air raids. He does not underestimate the horrors of such attacks, but points out the measures which will reduce the casualties as low as possible. The volume is of special importance because the author has been medical instructor to the Air Raid Precautions Department of the Home Office. The chapter of special interest to the medical profession is that on "Doctors, First Aid, and Hospitals." Two of the most important passages in the description of the functions of first-aid posts are as follows: "It is clear from this short description that the success of such decontamination centres will depend on proper order and discipline being maintained . . ." and "Many cases will flock to the first-aid post although they do not require treatment. There will be people instinctively seeking shelter and aid in their distress, friends of the injured or gassed, or those affected by such comparatively innocuous agents as the tear gases and the nose irritants." These sentences indicate one of the possible dangers connected with first-aid posts—namely, that they may become death traps by being congested with unmanageable crowds of people, some of whom are contaminated with mustard gas. In general it is of interest to note that the author considers that mustard gas has maintained its evil pre-eminence as an injurious agent. He estimates that twelve pounds of chloride of lime is necessary for the decontamination of one square yard of road surface. The book only costs a shilling and gives a clear and sensible account of how to reduce the dangers of air raids. It therefore deserves a wide circulation, particularly among the medical profession, who will have a task of exceptional difficulty and danger in the event of air raids.

Dr. John Fenton's Synopsis of Defence against Gas is a pocket volume of condensed information. It contains the notes of courses of lectures given to first-aid organizations, and should be very useful to those attending such courses.

DERIVATIVES OF MILK

Milk Products. By Wm. Clunie Harvey, M.D., D.P.H., and Harry Hill. (Pp. 388; 73 figures. 16s. net.) London: H. K. Lewis and Co. 1937.

The surplus cow's milk produced in this country presents a difficulty for which remedies have been suggested. One plan has been to endeavour to develop a right appreciation by the people of the merits of the fluid. But as the general attitude towards these efforts has been on the whole inadequately responsive, producers have turned their attention to the manufacture of milk into milk derivatives of various kinds. Many of these preparations have deservedly won favour and are being widely consumed in substantial quantities. For these reasons an acquaintance with the manufacturing processes involved has become indispensable to sanitary officers placed in charge of the purity and soundness of the foodstuffs used in their areas.

Useful guidance in this matter is supplied in the book issued by the medical officer of health and the sanitary inspector of the borough of Southgate. In the opening section, which is on ice-cream, the authors note that the substance was introduced into Britain by an Italian in 1860. Up till the time of the European War the business remained largely in the hands of the small producer and the itinerant vendor. Then America awoke to the charm of the delicacy and introduced mechanical plant for its production *en masse*, with the result that it is now a staple article of diet in that country. Following an account of the food value of the product, its bacterial content, and the communicable diseases to which it has on occasion given rise, the authors set forth the methods of production of ice-cream on both the small and the large scale, illustrating them by means of informative drawings and photographs. The procedure for the chemical and bacteriological examination of ice-cream is next detailed, and there is an ample citation of the English general and local statutes bearing upon the control of sales. Reference is made also to procedure regarding ice-cream in Australia, the United States, Holland, and Belgium.

Under the title "Cream," as distinguished from ice-cream, the topics dealt with by the authors include the properties and composition of cream, the breed of cow, the transmission of disease, separation by hand and by machinery, bacteriological and chemical examination, the use of the Hortvet cryoscope, and methods of legislative control. Under the title "Butter and Margarine" food values are considered and the theory and practice of the manufacture of butter are discussed. Faults in flavour and appearance receive due attention, and the chemistry and bacteriology of butter are adequately presented. Whey butter, milk-blended butter, and what is known as "reno-

vated" butter are referred to also. The manufacture of margarine and the legislative control of both substances conclude this section.

The subjects of the remaining sections, which are equally comprehensive, are cheese, condensed milk, evaporated milk, dried milk, and subsidiary milk products. The work concludes with an interesting note on three recent uses of milk: (1) in the form of dried cubes; (2) as an ingredient of a cement for ships' tanks; (3) in Italy as a source of artificial wool.

MALIGNANT TUMOURS OF THE NOSE AND NASAL ACCESSORY CAVITIES

Maligne Tumoren Van de Neus en Neusbijholten. By Hermanus Claassens W[illegible]. (With 30 illustrated.) Groningen: J. B. Wolte[illegible]. 1937.

His thesis for the degree of doctor of medicine of the University of Groningen, on malignant tumours of the nose and nasal accessory cavities, has been published in book form by Dr. Hermanus Wykerd. The thesis is written in Dutch, so that the text is not available for most English readers, but there is an excellent summary of seven pages and a good bibliography. The author draws attention to the remarkable frequency with which squamous-celled carcinoma occurs in a region covered with columnar epithelium. It is claimed that the majority of malignant tumours originate in the antrum. This is based on thirty-five cases observed at Groningen. There were twenty-five cases of carcinoma and ten cases of sarcoma. The antrum of Highmore was the seat of origin of the tumour in twenty-two cases, the nasal cavity proper in six cases, the frontal sinus in five cases, the sphenoidal sinus in one case, and the nasal septum in one case. This distribution is very different from the usual experience, which would give a high place to the ethmoid, not mentioned in this series.

The cases have been carefully studied both pathologically and clinically and the conclusions follow fairly closely those reached by Öhngren at Stockholm. Five of the patients are alive, free from recurrence for three and a half to eleven years. There are some interesting photomicrographs showing how Paget's disease, epulis, and osteitis fibrosa all produce a similar growth in the nose, resembling giant-celled sarcoma. As a special study the thesis forms a useful work of reference on numerous points.

Notes on Books

A second edition of *The Evolution of the Endurance, Speed and Staying Power of the Racehorse*, by Dr. W. J. STEWART MCKAY, has been published at 7s. 6d. by Hutchinson and Co., London. In addition to his eminence on the Australian turf the author has many publications on agriculture, zoology, veterinary medicine, and human surgery in his name. A history of the evolution of the racehorse, occupying the first half of the book, apparently leads Dr. McKay to the conclusion that in the great majority of cases the staying power of the racehorse is inherited from the sire. In the second half Dr. McKay reveals how long observation on the course, intimacy with racing records and stud books, and gleanings from physiology have convinced him that the failure of a horse in its races is due to cardiac insufficiency. Though his medical and veterinary colleagues may search in vain for the measurements of racehorses during life and after death, supporting the author's "heart theory of staying power," they may be thrilled with the chapter explaining how to follow form and spot the winners. Obtaining such information direct from the horse's mouth, the sportsmen and trainers, for whom the book is intended, will revel in the author's description of the genes, hormones, cardiac outputs, and other queer things in their bloodstock. Thus the book provides something for everybody.

A second edition of Dr. GLADYS M. COX'S *Clinical Contraception*, with an introduction by Lord Horder, has been published by W. Heinemann (Medical Books), Ltd., at 7s. 6d. This book was written in the first instance at the suggestion of the National Birth Control Association. The new edition emphasizes the author's conviction "that the use of a *combination* of a chemical and a mechanical contraceptive, selected for the individual patient, gives the greatest possible security against conception. The claims made by the manufacturers and distributors of the absolute reliability of certain chemical contraceptives cannot be substantiated clinically."

The richly documented work on *La Tosse* (Palermo: L. Salpietra, 30 lire), by Dr. ANTONINO CULOTTA, assistant to the Institute of Morbid Anatomy of Palermo University, is, as its subtitle indicates, divided into three parts, devoted respectively to the physiopathology, clinical aspects, and treatment of this distressing symptom. In the clinical section cough is considered first as a symptom of respiratory disease, and secondly as a manifestation of disorders of the digestion, cardiovascular, and nervous systems, diseases of the lung and kidneys, and acute infections. A bibliography of 173 references is appended.

Preparations and Appliances

"P.B.A.S."

P.B.A.S. (Hewlett's) is a preparation of para-amino-benzene sulphonamide. This relatively simple compound has been shown to be a valuable agent in the prevention and cure of infections with haemolytic streptococci. This important chemotherapeutic advance has aroused general interest, and reports on the action of the compound continue to be very favourable. P.B.A.S. is made up in tablets of 0.5 gramme for oral administration. The curative dose recommended is six to nine tablets daily and the prophylactic dose two to six tablets daily.

"ANTOSTAB"

Messrs. Boots have issued a brochure describing the nature and uses of their preparation antostab. This is a preparation of gonadotropic hormones obtained from the serum of pregnant mares. Its activity is standardized biologically by measurement of its action on the ovaries of infantile mice. The preparation is issued in powder form and must be dissolved just before use. This method is necessary because the gonadotropic hormones do not keep well in solution. Antostab is recommended for the treatment of amenorrhoea and of scanty menstruation. Copies of the brochure are available for the medical profession on application to Messrs. Boots Pure Drug Co. Ltd., Station Street, Nottingham.

SYNTHETIC CRYSTALLINE ANEURINE

Benerva brand of Vitamin B_1 (Roche Products Ltd., 51, Bowes Road, N.13) is a preparation of synthetic crystalline aneurine. It is prepared for oral administration in tablets each containing 1 mg. of the vitamin (500 international units). It is also prepared in 1 c.cm. ampoules for parenteral administration. Each ampoule contains 2 mg. (1,000 international units) of the vitamin.

Recent research has indicated that certain forms of neuritis are due to derangements of alimentary functions preventing absorption of vitamin B_1 from the gut. Hence the parenteral administration of this vitamin appears to be an important new form of therapy for certain diseases. Messrs. Roche have prepared useful brochures describing recent clinical results obtained with vitamin B_1.

MILITARY MEDICINE AND PHARMACY

NINTH INTERNATIONAL CONGRESS

A prominent feature of the ninth International Congress of Military Medicine and Pharmacy, held in Bucharest last month, was the general acknowledgement of the practical progress which had been made in reaching agreements designed to reduce the horrors of war as far as possible. Among the 1,400 members of the Congress were official delegates from thirty-one countries and national organizations, and it was decided that the standing committee should be modified so as to comprise representatives of the seven founder countries, together with representatives of the countries which had organized previous international congresses or had applied for membership, and a general secretariat established in Belgium. The modified rules would be submitted to all the Governments concerned, and the executive bureau would come into being in 1938 in connexion with the meeting in that year of the standing committee in the United States of America.

Sectional Proceedings

Six sections of the recent Congress dealt with different topics. In respect of the organization and functioning of the medical services in combined military and naval activities it was decided that attention must be paid both to offensive and defensive operations, and a plan be defined beforehand. Co-operation between the two services should be maintained by the establishment of a single command, the evacuation measures as regards naval vessels being under the protection of the Hague Convention. In all combined military and naval operations there should be a medical base working primarily in conjunction with hospital ships and secondly with depots on land. The unification under a single command of these military and naval depots would facilitate the co-ordination of relief measures on land. Considerable advantages would accrue from the designation of certain towns and maritime centres as depots for receiving the sick and wounded, and a plan has been drawn up providing for these in an international agreement. Another section concerned with gas cases concluded that questions of transport, hospitalization, and treatment were necessarily governed by the nature and the degree of the lesions. Transport presented no special problems, but hospitalization would depend on whether the primary concern was to be surgical or the treatment of gas casualties. Since surgical treatment demanded greater specialization of personnel and equipment, it was agreed that it would be better to establish surgical depots provided with gas sections. If, however, the proportion of gas casualties was very high, the creation of special centres for their treatment would have to be contemplated. The work of detoxication belonged more properly to health services, which would deal both with prophylaxis and with treatment.

A third section reviewed the organization and functioning of the special surgical work required for mechanized units in warfare. These would often be operating independently of the main forces, and the medical services attached to them would have to be endowed with rapidity of movement, be well equipped and provisioned, and capable of functioning independently also. The main purpose of these medical units would be the swift evacuation of the wounded towards the base, because surgical treatment was particularly difficult to arrange for the personnel of quickly moving troops; it would have to be restricted to the most urgent cases, but in unfavourable tactical conditions the work of the medical units would be limited to mass evacuation to special clearing stations. This called for new developments in the organization of evacuation work generally, and the staffs of these quickly moving units would have to be better informed than others so that they might adjust themselves to the rapidly changing needs of very mobile warfare.

The fourth section of the Congress dealt with the employment of colorimetric methods in field laboratories. Dental questions were considered by the fifth section, and it was agreed that partial or complete loss of teeth did not constitute grounds for exemption from military service if dentures proved satisfactory in respect of securing maintenance of the general health and fitness for military duties. The treatment of choice in peace time would be the supply of suitable dentures after the buccal cavity had been rendered healthy by the removal of septic foci of dental origin. In wartime there would have to be facilities for making and repairing dentures in the war zone, for as a general rule there should be no question of evacuating dental cases.

The sixth section dealt with problems relating to the supply of food and the appropriate dietetic treatment of the sick and wounded in wartime. While it was impossible to standardize rations, some scheme of classification was thought advisable, due regard being paid to the economic resources of various countries and especially to national dietetic customs. The feeding of the sick and wounded would necessarily improve as the result of scientific progress, and modern researches in the field of alimentation would play a considerable part in the identification of the more protective foods. In cooking and feeding establishments corresponding benefits would accrue from new discoveries, and gas and electricity would be more extensively used in cooking as well as in cold storage. It might be necessary to establish schools of cookery with a view to limiting the preparation of food to trained and professional chefs. Similarly in hospitals special kitchen departments should be instituted to secure that the dietetic requirements of different classes of the sick and wounded could be met, including the service of the meals in palatable form.

Plenary Session

These various recommendations were embodied in a final recommendation by the Congress as a whole, special emphasis being laid on the importance of securing and safeguarding towns and other centres for medical and health purposes. The advances already made in respect of the various humanizing possibilities pointed to still further progress in the near future, and it was hoped that an international convention would be established to embody all the recommendations envisaged by the various sections of the Congress, humanitarian considerations being accorded primary place henceforth. An invitation by the United States Ambassador to hold the next Congress in Washington in 1939 was unanimously accepted, and thus for the first time the place of meeting would be outside the confines of Europe. General Iliesco would consequently be succeeded as president by Colonel H. W. Jones, leader of the United States delegation. The subjects for discussion then would be: the organization and function of the medical services in colonial warfare (introduced by Italy and the United States); preliminary estimation of the numbers of casualties in war and consideration of the preparation necessary for their treatment (introduced by Germany and the United States); practical methods of anaesthesia and analgesia in military surgery (introduced by Argentina and Czechoslovakia); emergency treatment of and the equipment necessary for maxillary fractures due to war weapons (introduced by France and the United States); and the technical specialization of the administrative officers required for military medicine and surgery (introduced by Mexico and the United States). The exceptional success of the social side of the Congress in Bucarest was gratefuly acknowledged, and keen appreciation was expressed of the services rendered in this respect by King Carol and the Rumanian Government.

The speech by Viscount Astor in the House of Lords on May 5 on the nutrition problem has now been published in a revised form, and includes points made in his reply to the debate. It is particularly commended to social workers, and may be obtained from the National Temperance League, 33, Bedford Place, Russell Square, W.C.1.

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THE BELFAST MEETING

There is a part of Antrim where fairies can be seen by those gifted with unusually good sight, and it is rumoured that several members, well primed with vitamin A to avert night blindness, went in search of them, but unsuccessfully. But these investigators did not allow for a number of factors. Their craving for knowledge was not tempered with scientific caution. A moment's reflection would have informed them that all the fairies in the North of Ireland had been mobilized in Belfast for the Annual Meeting of the British Medical Association. Every Annual Meeting, of course, is a success. If it were not so meetings would not be held annually. A democratic organization such as the British Medical Association is cemented by the unanimity of its members on certain matters of fundamental importance, such as, dare we say, the usefulness of this *Journal*. Among these matters the Annual Meeting is one, and, while not in any way disparaging previous meetings, we agree with the member who remarked that Belfast was an "unqualified" success—by which he meant that he had never enjoyed himself so much before. Irish hospitality and Irish charm made each person feel so much at home that when the time came to leave he parted with regret and "sweet sorrow." The truly Irish qualities of hospitality and charm were epitomized in the President, Professor R. J. Johnstone, whose easy courtesy and unassuming friendliness endeared him to everyone who came into contact with him on private or on public occasions. It was a disappointment to all, and not least to Mrs. Johnstone herself, that illness prevented her from fully enjoying the results of the hard work she had put in as wife of the President. Seldom have the ladies been so well looked after at an Annual Meeting, and many of them will treasure as a memento of the occasion the ladies' handbook bound in Irish linen. It is not possible here to mention by name all those who helped the President to make the Meeting of 1937 the success it was, but special tribute must be paid to the Local General Secretary, Dr. F. M. B. Allen, and his second in command, Dr. R. W. M. Strain. The organization of an Annual Meeting has now become a formidable task, so formidable that the Representative Body considered the question of appointing a whole-time secretary for this purpose. The Belfast Meeting went off without a hitch. So perfectly had the work of organization been carried out, and so complete was the absence of fuss, that few people were aware that the Meeting was being moved by a complex piece of machinery. The grateful thanks of the Association are also due to the civic authorities, who aided and abetted their medical friends at every turn. The Lord Mayor of Belfast, whose reception at the City Hall will long be remembered, worthily maintained the reputation of his city for hospitality.

Although gaiety suffuses the Irish air, however damp this may be, time was, as is customary, set aside for serious matters. Debate at the Annual Representative Meeting was at times not so keen as in former years. Whether the representatives were lulled into quiescence by the genial good nature of the retiring Chairman, Mr. H. S. Souttar, or whether they missed the stimulus of that master of debate, Sir Henry Brackenbury, we do not know. They were at all events meeting in a city not averse to controversy. At an early stage in the proceedings the representatives began seriously to consider whether they were really representative or not, and discussed at great length a proposal that a general practitioners committee be formed, whose "duties and powers would be to consider matters specially affecting general practitioners." Those who spoke in favour of the motion were pleasantly oblivious of the humour of the situation. After all, the great majority of the members of the Association are in general practice, and the B.M.A. consists of its members—it does not exist *in vacuo*. The proportion of general practitioners is also well maintained in the Representative Body, which determines by vote the policy of the Association. What could be more representative than this? The fundamental error is in looking upon the interests of one section of the profession as distinct from and opposed to those of another. The B.M.A. must, and indeed does, concern itself with the interests and activities of all branches of medical practice, for medicine is one profession, not many. Of greater relevance was the discussion on maternity services, and readers of the *Journal* will endorse the resolution "that the Representative Body views with growing anxiety the tendency to divert from the general practitioner the practice of midwifery

and its associated ante-natal work." There was no doubt that that wise medical statesman Sir Kaye Le Fleming had well weighed his words when he described the difficulty as "the taking of a purely medical question into the political arena until the politician was driven to do something for political reasons, and . . . the absence of a proper means of approach by the local medical profession to the local authority."

Strangely enough few people found themselves able to agree with the *Times* leader writer, who on Tuesday, July 20, described the Belfast programme as "old-fashioned, musty, even threadbare." As the Scientific Sections did not begin until Wednesday, July 21, no one, however omniscient, could have foretold the nature of the discussions on subjects of which he may or may not have had expert knowledge. And the value of the Scientific Sections lies chiefly in the free discussions that take place on subjects which, old and new, are relevant to the daily practice of medicine. To the visionary, no doubt, such matters as "individual variations in response to drugs," "tomography," "protamine insulin," "the use of vitamin E in habitual abortion," are all threadbare and even musty subjects. Nevertheless unusual interest was shown in these and other matters on the scientific programme, and the level of discussion was considered to be unusually high. The report of the British Medical Association Committee on Physical Education—the basis of much public discussion and activity since its publication in April, 1936—might have been circulated to those attending the Section meetings to remind them of what they already knew: in the maintenance of health many factors enter, of which physical activity is but one. Those who arranged the scientific programme were also well aware that a body that is ill fed needs rest and nourishment and not the "physical action" lauded in the *Times* leading article. The medical profession is rightly less concerned with "the glamour of action beyond the normal level" than with seeing that the normal level is maintained: proper nutrition, good working conditions, adequate housing, and recreation are necessary for this. When these have been obtained, then will be the time for studying "the glamour of action."

We cannot conclude this brief review of the Belfast Meeting without reference to the enthusiastic reception given to Major-General William MacArthur's popular lecture on "Insects and Disease." The meeting ended as it began, in a spirit of real friendliness and comradeship. Those who had visited Ulster for the first time left with the firm resolve to return at the earliest opportunity —an opportunity which is not to be missed.

SPINAL TUMOURS: A JUBILEE

There are few surgical experiences more satisfying than that of seeing a paralysed, bed-ridden, and incontinent patient restored to health and normal life as a result of the diagnosis, localization, and successful removal of a spinal tumour. Just over fifty years ago it was Sir Victor Horsley's privilege to be the first to have this gratifying experience, and to some the event is more memorable even than Sir Rickman Godlee's operation for a cerebral glioma, of which the half-centenary was celebrated three years ago by a dinner and appropriate references to the occasion on the part of some of the chief guests. Although brain tumours are six times as common as spinal cord tumours, the latter are just as remorseless if not prevented from producing a steadily progressive destruction of the cord by compression. It is well known that once complete destruction of a section of the human spinal cord has taken place it does not regenerate. The recognition and removal of spinal tumours before such destruction of the cord has come about is therefore of the utmost importance. It is surprising, however, to what an extent the cord may be compressed by a tumour and yet recover its function after operation. We have now almost daily evidence of this in the successful recovery from paraplegia of patients with spinal tumour, in many of whom at the time of operation the cord has been found to be extensively compressed.[1]

On the afternoon of June 9, 1887, at the National Hospital, Queen Square, Victor Horsley performed laminectomy on an Army officer, aged 42, who had suffered from severe pain below the inferior angle of the left scapula for three years and who had spastic paraplegia in extension. Sir William Gowers, in whose care the patient had been, diagnosed a spinal tumour and advised operation, and in this Sir William Jenner, who also saw the patient, had concurred. Throughout the operation the carbolic spray was used and instruments and sponges were immersed in 5 per cent. carbolic lotion. No tumour was found, and the operation was about to be concluded when the late Sir Charles Ballance,[2] who was assisting, urged Horsley to go higher. In his report of the case Horsley[3] remarks: "I removed another lamina at the upper part of the incision. On opening the dura mater I saw on the left side of the subdural cavity a round, dark, bluish mass about three millimetres in diameter, resting upon the left lateral column and posterior root zone of the spinal cord. I recognized it at once to be the lower end of a new growth and therefore quickly cut away the major part

[1] *Lancet*, 1935, 1, 187.
[2] *British Medical Journal*, 1936, 1, 1005.
[3] *Med. chir. Trans.*, 1888, 71, 377.

of the lamina next above. This enabled me to see almost the whole extent of the tumour when the dura was divided." This tumour, the first ever to be diagnosed and successfully removed from the living subject, is specimen 5063–1 in the Hunterian Museum of the Royal College of Surgeons of England. It is interesting to note that although the cord was swabbed with 5 per cent. phenol and the patient had a cerebro-spinal fluid fistula for six weeks he made an astonishingly complete recovery, and a year after the operation wrote to Horsley that he was in excellent health and working sixteen hours a day. Horsley was so far ahead of his time that ten years elapsed before an equally successful result was obtained in a case of Harvey Cushing's,[1] not reported until 1904.

The case operated upon at Queen Square fifty years ago marks a great original effort, and in thinking of those pioneers in the surgery of the spinal cord we are reminded of the lines from Coleridge's *Ancient Mariner*: "We were the first that ever burst into that silent sea." Only six years before Horsley's highly successful operation Herbert Page of Newcastle-on-Tyne had described laminectomy as "an operation not within the range of practical surgery," and when Horsley published this case he collected records of fifty-eight other patients untreated by operation, all of whom had died. It is fitting that we should be honouring, at least by reference to it, the half-centenary of Horsley's spinal tumour case, for as the late Donald Armour once said (Lettsomian Lectures, 1927), this epoch-making occasion proved to be the birth of spinal tumour surgery.

[1] *Ann. of Surg.*, 1925, 85, 223.

THE PATHOLOGICAL MUSEUM AT BELFAST

It may safely be said that no more instructive collection of pathological material has been exhibited at an Annual Meeting of the British Medical Association than that shown at Belfast. The greater part of it consisted of specimens which have been collected for teaching purposes under the direction of Professor Young during the past few years. The material was admirably chosen either to illustrate typical disease processes or to exemplify unusual abnormalities. Not only were the specimens themselves well mounted and displayed, but the presentation of clinical data connected with them was admirable, and frequently included reproductions of skiagrams taken during life and other such illustrations of the case other than the specimen itself. The more closely the pathological process can be related to clinical symptoms and signs the better will it be understood by the student and the greater his gain from pathological teaching. An unusual feature was the demonstration on viewing screens of large histological sections: one group of these was devoted to breast tumours, in which it was instructive to be able to see at a glance the situation and extent of a growth and the direction of its spread. On another were a variety of similar specimens, including several sections through the entire uterus in cancer at various stages; these beautiful preparations afforded a picture of what may be called the anatomy of a disease which is quite unattainable by other means. Perhaps the most striking specimens in the general collection were those illustrating malignant disease of the lung, of which many types were represented; there was also a varied series of tumours of the brain. Several special exhibits were devoted to tumours of bone, a subject which was discussed by the combined Sections of Pathology and Radiology on July 22; many of the specimens shown were from cases referred to by speakers at that meeting. Professor M. J. Stewart exhibited specimens illustrating the fact that giant-celled tumours of bone include a type which may metastasize, and examples of the solitary plasmocytoma, a tumour which may present considerable difficulty in diagnosis and is, indeed, still imperfectly recognized. Examples of plasma cell tumours were also shown by Professor D. F. Cappell and Dr. L. M. Hawksley. Among other exhibits were a demonstration by Sir Thomas Houston on types of enterococci, by Dr. Eileen Bartley and Dr. N. C. Graham on the cultural disturbances between Lancefield's groups of haemolytic streptococci, and by Professor C. C. Macklin on experimental pneumothorax. It should be added that in connexion with the morbid anatomical exhibits histological sections of every specimen were provided, together with plenty of microscopes by which they could be examined. Many visitors must have felt that had the programme of the meeting not been so full they could profitably have spent a much longer time than they did in studying this excellent collection.

A NEW TREATMENT FOR DIABETIC KETOSIS

Professor Szent-Györgyi has just given an account of a new treatment for diabetic ketosis, producing evidence that the administration of succinic (amber) acid by mouth quickly removes acetone bodies from the urine. Rumours of this treatment had appeared in the British lay press even before his scientific publication[1] in Germany. The idea is revolutionary, and coming from such a source commands serious attention. It is suggested that injections of insulin may be replaced by succinic acid by mouth in the treatment of patients even with severe ketosis. Szent-Györgyi's idea is based on the theory he has previously advanced, which is by no means generally accepted, of the vital part played by C_4 dicarboxylic acids, especially pyruvic acid, in tissue respiration and intermediate carbohydrate metabolism. This led him to think that the C_4 succinic acid might help as a catalyst in the disordered metabolism of diabetes, particularly the ketone disturbance. Five cases of diabetic ketosis have been treated by succinic

[1] Korányi, A., and v. Szent-Györgyi, A. (1937). *Dtschr. med. Wschr.*, 63, 1029.

acid, and according to the published account successful results were obtained in four of them. The first case is the most striking. After the omission of 70 units of insulin a day the administration of 10 grammes of succinic acid by mouth completely removed a heavy urinary ketosis in four days, although the hyperglycaemia and glycosuria remained unchanged. The succinic acid was then stopped, and the ketosis recurred, to disappear again two days after restarting the acid. This procedure of omitting and restarting the treatment was repeated, with the same result, and the patient was ultimately controlled with 1 gramme of succinic acid and 10 units of insulin daily. The results lead the authors to suggest that injections of insulin may be replaced by succinic acid by mouth, a matter of enormous importance to thousands of patients with diabetes. In the current issue of the *Journal* Dr. R. D. Lawrence and his colleagues publish on page 214 a short report of their preliminary trial of the succinic acid treatment, describing entirely different and negative results. Two women with heavy ketosis were given 10 grammes of succinic acid for a week, during which time the ketosis grew steadily worse, to disappear rapidly later under insulin treatment. These workers are satisfied that the experimental conditions were well controlled, and their results are definite. There is, therefore, a complete contradiction in the results of two groups of workers, neither of whom have studied many cases. It is clear that many more cases must be followed under strictly controlled conditions and by other observers, and the changes in ketosis must be studied by qualitative estimations as well as by qualitative tests. It may be that succinic acid acts in some but not in all cases of diabetic ketosis, as it seems likely that there is more than one type of diabetes. At all events it is too soon to advise the general use of succinic acid in place of insulin; from Dr. Lawrence's experience it is evident that this would in certain cases involve the risk of diabetic coma.

"JOURNAL OF NEUROLOGY AND PSYCHIATRY"

Since 1926 the *Journal of Neurology and Psychopathology* has been issued four times a year by the British Medical Association, and the 68th number appeared in April, 1937. The contents have included original communications and editorial articles, together with abstracts of current neuro-psychiatric literature and critical reviews. Until his much-regretted death on May 12 Dr. S. A. Kinnier Wilson, with the assistance of an Editorial Committee, edited the journal, and under his guidance it established itself as one of the foremost periodicals for the record of progress in the branches of medicine with which it deals, its scope and arrangement giving it a place which no other journal published in English exactly copies. The position created by Dr. Wilson's death was fully considered by the Editorial Committee and the following decisions were made. No further issues will be published this year. The next, No. 69, will appear in January, 1938, under the editorship of Dr. E. A. Carmichael, with its title changed to *Journal of Neurology and Psychiatry*. The accounts of subscribers will be adjusted to make up for the temporary suspension of publication. All communications on editorial matters should be addressed to Dr. Carmichael, National Hospital, Queen Square, London, W.C.1, and on business matters, to the Secretary of the Journal Board, B.M.A. House, Tavistock Square, W.C.1. Under the new printing arrangements the size of page will be larger. The cost is 25s. per annum (20s. to members of the British Medical Association); single numbers 7s. 6d. post free.

FOOD-POISONING DUE TO MILK

At this time of year there commonly arise cases of acute enteritis for which a cause can rarely be found. Living bacteria of the Salmonella group are readily identified, but they account for only a small proportion of food-poisoning outbreaks, and when their presence has been excluded the remaining possibilities are less amenable to investigation, and indeed usually remain in the field of conjecture. That the multiplication in food of other less specific bacteria may have similar effects is undoubted, although to attribute a given case to the activities of a particular micro-organism may be a matter of great difficulty. Within the past few years, however, another specific type of food-poisoning has been identified among these miscellaneous cases. This type is due to the formation of a toxin in food by the growth of *Staphylococcus aureus*; it may be suspected when the incriminated food contains this micro-organism in considerable numbers, but proof is only obtainable by the administration of culture filtrates to human volunteers. It is still doubtful whether any character other than the capacity to form this enterotoxin can be used to distinguish the true food-poisoning strains of staphylococci. Simpler cultural tests have been proposed, but it now appears that the administration of filtrates to monkeys, which was at first thought to be a satisfactory test for staphylococcus enterotoxin, is not reliable enough. It may be remarked in passing that this is the only fully identified exotoxin with a local action on the alimentary tract, just as the toxin of *Cl. botulinum* is the only toxin which can be absorbed there. The literature of this form of food-poisoning is almost entirely transatlantic, and it is not clear whether the condition is actually commoner in America or whether its existence in this country, for instance, is still largely unrecognized. Although a variety of articles of food have been known to cause this form of food-poisoning, milk, milk products such as custard, and confectionery containing cream have most often been responsible. Shaughnessy and Grubb[1] have recently described the investigation of outbreaks due to milk itself, and it was found in each case that the herds supplying the milk included cows with staphylococcal mastitis. This is important evidence pointing to a distinct origin of this type of contamination, and suggesting that only certain strains which are pathogenic to the cow can be responsible; staphylococci, after all, are so ubiquitous that any chance contamination cannot be deemed capable of causing this form of food-poisoning. Brooks and Tiedeman,[2] in a general discussion of the relation of

[1] *Canad. publ. Hlth. J.*, 1937, 28, 229.
[2] *Amer. J. publ. Hlth.*, 1937, 27, 334.

bovine mastitis to human disease, also refer to staphylococcal infection of the udder as a cause of gastro-enteritis in man. This is clearly a possibility which should be borne in mind in investigating outbreaks of food-poisoning, even though the ultimate proof of their staphylococcal origin may present insuperable difficulties until some more convenient test for this entero-toxin has been devised. These discoveries throw an interesting retrospective light on the summer diarrhoea of infants. It has long been suspected that various bacteria, other than the recognized intestinal pathogens, by multiplying in milk can produce substances which will act as irritants in the alimentary tract. Here is the fullest possible proof that a micro-organism, the presence of which would otherwise be disregarded, can form a toxin which will cause vomiting, diarrhoea, and collapse even in the adult. How many of the multitudes of infants who used to die of gastro-enteritis were suffering from food-poisoning due to staphylococci, or perhaps other bacteria acting similarly, will never be known. There is every reason for supposing that pasteurization and fewer house-flies have been responsible for the enormous reduction in frequency of this disease. In such cases as do occur nowadays a series of examinations of the milk consumed, with particular reference to its coccal content, might have illuminating results.

LE DROIT DES SAVANTS

On June 8 one more step was taken in the direction of giving scientists material rewards for their discoveries when the French Academy of Medicine passed a resolution in favour of this principle. During the past decade this problem has appeared from time to time on the agenda of scientific and allied bodies, including the League of Nations and its offspring the International Institute of Intellectual Co-operation. In a report presented on behalf of the Commission of Intellectual Co-operation, Bergson maintained that in the scientific field a new idea, not only its application, deserved protection on behalf of its author. Last March a study of the rights of savants was presented to the Academy of Medicine by Paul Olagnier. The commission, which was appointed by the Academy, and which was composed of some of its most distinguished members, has now issued its report, and it was as a response to this report that the Academy on June 8 unanimously voted a resolution in which the Government was invited to submit to Parliament the draft of a law aiming at the preservation of the rights, moral and material, of savants and inventors in all the fields in which their discoveries and scientific inventions exist. In the preamble to this resolution it was noted that legislature as it now stands does not grant to savants the same rights with regard to their discoveries and inventions as those enjoyed by the authors of literary and artistic works. It has seemed for some time that the discussion of this subject by learned societies has inevitably been doomed to the futility of pious wishes lacking executive expression; but what has given rise to hopes that this problem may be transferred from the academic to the legislative plane is that the French Government has prepared the draft of a law amplifying and harmonizing already existing legislation concerning authors' rights. With good will it ought not to be difficult to couple these proposed reforms with clauses extending the rights of authors to scientists in Bergson's spirit.

LESTER INSTITUTE, SHANGHAI

The annual report for 1936 of the Henry Lester Institute of Medical Research, Shanghai, is as interesting as its predecessor. This institution is notable for the close liaison it facilitates between its workers and centres of research in Europe, and for the catholic range of its local activities and their practical application. Further field investigations have been conducted with regard to schistosomiasis. During the summer months a party of some sixty Russian boy scouts were encamped in the hills twenty miles south-west of Shanghai, and on their return to the city many of the boys were found to be infected with the disease. The Institute immediately despatched investigators to the district, where numbers of infected snails were discovered. Monthly visits were initiated to study the bionomics of *Oncomelania*, an essential prelude to the control of the disease in an endemic area. The report stresses the danger of bathing in creeks or ponds within a hundred miles of Shanghai. A considerable incidence of infection with *S. japonicum* was found in the cattle slaughtered in the municipal abattoirs. The livers of 156 oxen and 140 water buffaloes were examined for the ova, in one series of oxen 33 per cent. were infected and 23 per cent. in a series of water buffaloes. The study indicates that cattle may serve as an important reservoir host of schistosomiasis in China, although it is pointed out that transmission cannot be direct, the snails constituting a necessary intermediate host for the development of the Cercariae. The report records the retirement of Dr. J. L. Maxwell, one of the founders of the Institute, and interesting extracts are quoted from his valedictory lecture. When Dr. Maxwell went to China thirty-six years ago typhoid cases, which at that time still laid a heavy burden on the medical wards of St. Bartholomew's, were very infrequent among the Chinese in Amoy, then reputed one of the dirtiest cities in China. Amoy is now one of the finest cities of the Far East, with an unrivalled supply of pure water. Nevertheless, typhoid is to-day one of the main causes of Chinese admissions to its hospitals, and takes the leading place in the mortality rate. In short, the disease has enormously increased in circumstances which would have been expected to produce the opposite effect. Dr. Maxwell also mentions the great increase in neurosyphilis. He attributes the spread of syphilis in country districts to the ubiquitous wanderings of a licentious soldiery during the last twenty-five years, and infers that the unaccustomed nerve strain engendered by wholesale brigandage has concentrated the ravages of the disease on the central nervous system. With regard to the future of medical research in China, Dr. Maxwell stresses the need for team work. He also points out that, though increasing attention is paid to physical health, especially with regard to nutrition, the question of mental health and also of spiritual health is comparatively neglected.

ANAESTHESIA IN GENERAL PRACTICE

This is one of a series of articles, contributed by invitation

NOTES ON THE PHYSIOLOGY AND PHARMACOLOGY OF ANAESTHESIA

BY

H. W. FEATHERSTONE, M.A., M.D., D.A.

General surgical anaesthesia may be defined as the state of profound insensibility produced by the action of certain drugs on nerve cells of the brain without harming the essential processes of respiration and circulation, and sufficiently profound to allow a surgical operation to be performed. Local anaesthesia comprises loss of sensation over an area caused by a drug acting directly on nervous tissue to which it has been applied. It is the purpose of this article to discuss from a practical point of view the various routes by which these drugs enter the body, the effects they produce, and their ultimate fate.

General anaesthetics are administered in the gaseous or in the liquid state. Solid drugs are given in solution.

Volatile Anaesthetics

Gaseous anaesthetics which enter the body through the lungs are called inhalational anaesthetics. This group includes nitrous oxide, ethylene, acetylene, and cyclopropane, and the vapours of di-ethyl ether, divinyl ether, chloroform, and ethyl chloride. Since an inhalational anaesthetic is speedily absorbed and excreted by the blood through the alveolar epithelium the drug may be given with safety in full pharmacological dose to the point of deep surgical anaesthesia, and provided respiration and circulation are maintained reduction in dosage can be effected readily. On the other hand the dose of non-volatile anaesthetics cannot be reduced rapidly, and therefore deep anaesthesia is not compatible with safety. If a volatile anaesthetic such as ether is administered in solution either intravenously or by the rectum the drug will be excreted by the lungs.

In the upper air passages certain direct effects may be produced: irritation of the mucous membrane accompanied by vasodilatation, secretion of mucus, muscular spasm; after some minutes these signs of irritation may be followed by local anaesthesia of the walls of the air passages and by muscular relaxation. Ether (in the absence of atropine) is especially prone to cause these events, but chloroform and ethyl chloride are less irritating and nitrous oxide and ethylene are non-irritating.

ABSORPTION AND ELIMINATION

The direction of the diffusion of the vapour through the alveolar epithelium depends upon the partial pressure in the alveoli and the tension in the blood. So long as the partial pressure of the vapour in the air cells is higher than its tension in the blood the drug is absorbed by the blood. Although the alveolar epithelium does not appear to suffer damage during anaesthesia of normal duration, high concentrations of ether or of chloroform acting over a long period may cause more or less permanent injury to these cells. Deep inspiration draws a larger volume of gas into the lungs, and at the same time the increased power of the thoracic "pump" promotes a more rapid flow of blood through the heart and lungs. Therefore by full respiratory movements absorption of anaesthetic gases is increased; or after the administration has ceased excretion of the drug is encouraged.

In the blood the drug is carried partly in solution in the plasma and partly in the red corpuscles, either in a loose chemical combination or by adsorption. After passing through the left heart the anaesthetic-laden blood is propelled to the brain and to the tissues of the body. It is common experience that for a particular anaesthetic the longer the duration of administration the more the delay in recovering consciousness. Brief administration produces a certain tension of the gas in the blood, but the lymph and the body tissues generally do not have sufficient time to store up the drug. On the other hand prolonged anaesthesia causes the anaesthetic to accumulate in all the tissues, although it is necessary to prolong administration for several hours before the concentration in the arterial blood, the venous blood, and the tissues is in equilibrium.

McKesson introduced the method of administering nitrous oxide and oxygen, which he termed "secondary saturation." One hundred per cent. of nitrous oxide is inhaled until the patient is grey, and therefore the blood contains a maximum tension of nitrous oxide, which ensures that the tissues in general and the nerve cells in particular rapidly obtain a maximum concentration of the drug. Oxygen is then driven into the lungs (and into the blood), and thereafter a mixture of nitrous oxide and oxygen in the usual proportions is administered. The period of greyness and anoxaemia which accompanies the saturation with nitrous oxide is considered by many anaesthetists to endanger the safety of the heart muscle.

When the administration is stopped elimination proceeds rapidly at first, particularly if the circulatory and respiratory functions are vigorous, and then more gradually. The last traces of the less volatile drugs may be retained for several days. The bulk of an inhalational anaesthetic drug is excreted through the lungs, a detectable amount through the skin, and possibly traces of ether and chloroform are oxidized by the liver and the products excreted by the kidneys.

EFFECT ON THE BLOOD AND THE NERVOUS SYSTEM

All types of general and local anaesthesia produce a leucocytosis, and among other changes in the blood which have been recorded the following may be mentioned: reduction in the amount of haemoglobin, anaemia, haemolysis, prolongation of the coagulation time, increase in the blood cholesterol, reduction of the oxygen content, and an increased percentage of carbon dioxide. These effects are rare with nitrous-oxide-oxygen anaesthesia, but they have been noted with ether and with chloroform. The alkali reserve of the blood is reduced and some degree of ketosis occurs. The glycogen of the liver is mobilized and the blood sugar rises. Undoubtedly these effects are increased by cyanosis, by prolonged anaesthesia, and particularly by chloroform. The administration, before and after operations, of sodium bicarbonate and of glucose (together with insulin, especially in diabetics) is of much service, good oxygenation is essential, and nitrous oxide and oxygen is the least disturbing (but the weakest) anaesthetic agent.

Anaesthetic drugs are not only readily taken up by the blood but nerve cells have a special affinity for them.

The cells in the higher centres of the cerebral hemispheres are affected first, and the centres for the sensory cranial nerves subsequently—smell, then vision, then hearing. Probably oxidation of the nerve cells, upon which the function of the cells depends, is affected by the drug by interference with the selective permeability of the surface membrane of the cells. If the higher centres are very active at the time of induction a higher concentration may be required to inhibit function. This is the rationale of careful pre-operative sedation, either by natural means or by drugs. An individual in a state of mental excitement may require such a large concentration to control the nerve cells of the higher centres that the function of the lower centres may be affected as well. Anaesthetic agents do not affect the various portions of the cerebrum in quite the same order. Thus chloroform and nitrous oxide usually produce analgesia before confusion of the mind and amnesia set in, but ether confuses the mind at the same time as it abolishes pain.

The concentration of a drug in the blood which is necessary to inhibit the activity of a particular group of nerve cells varies with different drugs. At normal atmospheric pressure the greatest partial pressure of nitrous oxide which permits adequate oxygenation will not produce muscular relaxation. In a pressure chamber, working at a pressure of one and a half atmospheres, nitrous oxide becomes more potent. But ethylene is rather more powerful than nitrous oxide, while ether or chloroform will cause muscular relaxation with adequate oxygenation and unimpaired respiratory and circulatory functions.

TOXIC EFFECTS

In the presence of an adequate oxygen supply nitrous oxide, ethylene, and cyclopropane do not impair liver function; but liver function may be diminished by ether for some hours and by chloroform for days. Permanent degeneration, sometimes fatal, occurs in the condition known as delayed chloroform poisoning. The late Dr. Fairlie of Glasgow, with his great experience of chloroform, considered that minor degrees of damage to the liver were not uncommon. Pre-operative loading of the liver with glycogen is a safeguard, and for this purpose glucose or sodium lactate (the liver converts lactic acid into glycogen) may be given for several days before operation.

Anaesthetics affect the heart by poisoning the neuromuscular mechanism and by causing vagal inhibition. In the early stages of chloroform anaesthesia ventricular fibrillation may follow excitement or the injection of adrenaline. Anoxaemia may lead to failure of the heart muscle itself, and this danger may be caused either by complete displacement of the oxygen (for example, by giving 100 per cent. nitrous oxygen in "dental gas" anaesthesia) or by obstruction to the air intake. Inefficient heart action delays induction and recovery. This is clearly demonstrated when giving gas and oxygen to patients with morbus cordis.

Vasomotor control is usually disturbed by the direct action of the anaesthetic upon the vasomotor centre in the medulla. Thus if the head and shoulders are raised compensatory vasoconstriction of the lower parts of the body will not occur and cerebral anaemia may follow. But lowering of the head, as in the Trendelenburg position, is safe and salutary. Nitrous oxide produces slight vasodilatation, and the blood-pressure readings in the absence of shock in ether and in chloroform anaesthesia are instructive. With ether an initial rise in the systolic pressure is followed by a gradual fall, while the diastolic pressure falls steeply at first and remains low until the anaesthetic is stopped, when it usually rises rapidly. Thus the pulse pressure under ether is large, the heart has less work against a lowered peripheral resistance, but cut surfaces tend to bleed more freely. Chloroform anaesthesia is accompanied by a slow fall in the systolic pressure and a rise in the diastolic reading. Therefore the pulse pressure diminishes, the heart works against an increased peripheral resistance, but there is a tendency for the bleeding of cut surfaces to be lessened. It is said that etherized patients bleed at the time of operation, but those who have had chloroform bleed after the operation!

The heat centre is also depressed, and as the metabolism of the body is reduced during anaesthesia the lowering of the body heat may be considerable. Adequate covering of the body, the avoidance of draughts, and a well-warmed theatre are called for.

The function of the kidneys is not demonstrably affected by nitrous oxide and oxygen anaesthesia, but ether and particularly chloroform tend to produce oliguria and anuria. Albumin may be detected in the urine after ether and sometimes after chloroform. Acetonuria was present in 67 per cent. of a series of patients upon whom any one of the various forms of general anaesthesia had been used, and "in no less than 85 per cent. under local analgesia" (Schulze, quoted by Hewer). The blood urea shows a slight rise after ether anaesthesia.

Bourne and Burn have demonstrated that the contractile power of the uterus in labour is inhibited by ether and by chloroform. Nitrous oxide and air or nitrous oxide and oxygen permit uterine activity to continue with normal rhythm and contractile power. Spinal analgesia appears to promote tonic contraction of the circular muscle, but the longitudinal fibres do not function effectively

Non-volatile Anaesthetics

Among those in common use may be mentioned avertin (tribromethylalcohol) and the rapidly acting barbiturates such as evipan sodium, pentothal sodium (which contains sulphur), pernocton (which contains bromine), sodium amytal, and nembutal. These preparations are all soluble in water, and they are administered by the mouth, by the rectum, by intramuscular injection, or by injection into a vein; but all are not suitable for administration by all routes. Avertin is always administered rectally; evipan sodium and pentothal sodium if injected into the tissues cause severe local reaction, and they are *par excellence* intravenous anaesthetics. If nembutal, the soluble sodium salt of an insoluble barbiturate, is swallowed by a nervous patient the drug may be retained for some time in the stomach by functional pyloric spasm, with the result that the gastric hydrochloric acid may cause precipitation of the insoluble compound and the absorption of the drug may be delayed. Nevertheless nembutal is a useful oral basal anaesthetic.

Each of these substances is detoxicated by the liver, and the oxidized products, together with salts derived from the bromine or sulphur components, are excreted by the kidneys.

The barbiturates not only vary in the particular nerve cells for which they have affinity (luminal has a markedly sedative action in conditions of motor hyperexcitability, such as chorea), but they vary in the rate of detoxication and elimination, sodium amytal being slowly detoxicated, while evipan sodium and pentothal sodium are eliminated with great rapidity. If the property of speedy detoxication is accompanied by a wide margin of safety—that is, if the minimal lethal dose is three or four times the narcotic dose—then the drug may be given into a vein

in sufficient quantity to produce complete narcosis and muscular relaxation. The guide to the dose is the reaction of the patient. Slow administration by other routes—oral, rectal, or intramuscular—is employed for the slowly detoxicated barbiturates and for avertin. The dose is calculated according to the weight of the patient, and unconsciousness only is aimed at, the further depth of anaesthesia being attained by administering a relatively low concentration of an inhalational anaesthetic.

Respiration and the General Circulation

After an operation of average length under either general or spinal anaesthesia there may be marked pallor of the face and body. The prolonged immobility of the body, together with complete muscular relaxation, has reduced the circulation considerably. Deficiency of carbon dioxide (Yandell Henderson) and the reduced metabolism have also tended to produce this appearance.

The administration of carbon dioxide stimulates the respiratory centre and the movements of respiration are increased both in rate and in amplitude. Not only does this improve the colour of the patient by increased ventilation but the return of blood to the heart is also accelerated. On the other hand excess of carbon dioxide may depress the heart muscle. The accumulation of carbon dioxide and other waste products in the muscles tends to cause muscular rigidity.

The administration of oxygen improves the heart's action and helps the functions of other important organs; furthermore, it relieves congestion in the blood vessels of the air passages. Cyanosis after nitrous oxide may lead to vomiting and malaise, but a few breaths of oxygen speedily restore the sensation of well-being. It should be remembered, however, that the pink colour associated with breathing a mixture rich in oxygen may mask defective exhalation of carbon dioxide should the upper air passages or the return flow from an intratracheal catheter be partly obstructed. It is as important to free the body of the waste product carbon dioxide as it is to provide an adequate supply of oxygen. Therefore under general anaesthesia a proper airway is at all times essential.

Local Anaesthetics

These drugs paralyse nerves and nerve endings in concentrations at which they do not injure surrounding tissues and without preliminary excitation. The duration of action is temporary, but more than half an hour (quinine-urea lasts longer and tends to leave permanent effects). They are soluble in water but not destroyed by boiling; they may be combined with adrenaline, and they do not exert a markedly toxic central action. They may be applied by painting on to surfaces; by percutaneous electrolysis; by injection, either hypodermically to paralyse nerve endings or subdurally to paralyse the spinal cord and the spinal nerve roots. These drugs vary in their toxic power upon the brain and other organs, cocaine being potent and novocain relatively innocuous. Adrenaline is injected along with the drug in order that local vasoconstriction and local concentration of the drug may be secured. A large bulk of highly dilute solution increases the tension in the tissues, and thereby pressure paralysis of the nerve fibres is caused.

Patients may suffer discomfort following local anaesthesia. The adrenaline may cause palpitation, pallor, and even alarming derangement of the heart's action. There may be marked idiosyncrasy to the local anaesthetic, and often this effect is not shown immediately but during the few hours subsequent to the injection when, the local vasoconstriction having relaxed, the drug is being dispersed into the circulation. Novocain is rapidly detoxicated by the liver and the products are excreted by the kidneys, but cocaine is detoxicated slowly and excreted slowly.

Spinal Analgesia

By the direct application to the spinal cord of local anaesthetic drugs (tropacocaine, stovaine, novocain, percaine, etc.) the passage of both afferent and efferent impulses along the spinal roots may be blocked, the sensory roots being affected more easily. A solution may tend to diffuse up or down the intrathecal space, and dorsally or ventrally as it is heavier, lighter, or of the same specific gravity as cerebro-spinal fluid—that is, hyperbaric, hypobaric, or isobaric—and as the body is prone, supine, upright, or inverted head downwards. The duration of the analgesia is usually from one to two and a half hours, and the drug is ultimately excreted by the same route as other local anaesthetics.

Not only are the motor and sensory actions of the affected nerve trunks and tracts abolished, but should the thoracic region of the spinal cord be affected extensive vasomotor paralysis ensues. The fall in blood pressure may be considerable. It has been suggested that this fall is due to relaxation of the trunk and lower limb muscles, accompanied by stagnation of blood in the capillaries and veins and increased exudation of lymph. In this way the paralysed region of the body becomes a lake of lymph, while the bulk of blood available for return to the heart is greatly reduced. Should the head be raised and the legs lowered cerebral anaemia may produce syncope. In elderly persons the arterial peripheral resistance may be relatively high. According to the formula $S = 2D - 20$ (systolic should be equal to twice the diastolic pressure minus 20 mm. Hg) a diastolic pressure of 120 mm. Hg requires a systolic pressure of 220 mm., but if a pre-operative diastolic reading of 120 mm. were accompanied by a systolic pressure of only 180 mm. a spinal anaesthetic might cause such lowering of the systolic pressure that serious cerebral anaemia might result.

Headache after spinal analgesia may be severe. It may start a few hours after the administration or the headache may not occur for a week. Usually occipital or sub-occipital, it may be exaggerated by raising the head. The intrathecal pressure is raised and the headache is always relieved, temporarily at least, by lumbar puncture. The headache may follow simple diagnostic lumbar puncture, and although injection of air bubbles, intrathecal bleeding, direct effects of the drug, and other possible causes have been deemed responsible, it is probable that the condition is due to the sudden disturbance of the intrathecal pressure associated with lumbar puncture, with or without the injection of a drug. The application of heat to the feet with ice to the head, accompanied by a saline aperient and a mild analgesic, usually relieves the condition.

When spinal anaesthetics are combined with powerful basal anaesthetics whose elimination depends upon detoxication by the liver undesirable effects may result. The drop in blood pressure is more marked than usual, the respiration often is slowed and reduced in depth. The depression of circulation retards detoxication, and until the effect of the spinal anaesthetic has worn off basal anaesthesia will persist. Stimulation of the respiration and of the circulation by means of inhalations of carbon dioxide and oxygen hastens detoxication and helps to break the vicious circle.

ONE HUNDRED AND FIFTH ANNUAL MEETING

of the

British Medical Association

HELD IN BELFAST, JULY, 1937

THE SECTIONS

SUMMARY OF PROCEEDINGS

During the next few months there will be published in the BRITISH MEDICAL JOURNAL *the opening papers communicated to the Scientific Sections of the Annual Meeting at Belfast. The reports of discussions in this and successive issues are intended to give members who were not present a general idea of the proceedings.*

COMBINED MEETING OF SECTIONS OF MEDICINE AND PATHOLOGY

Wednesday, July 21

The Haemorrhagic States

The president of the Section of Medicine, Professor W. W. D. THOMSON, welcomed members to Belfast, and asked Sir THOMAS HOUSTON, president of the Section of Pathology, Bacteriology, and Immunology, to take the chair.

Professor L. J. WITTS delivered the opening paper on the haemorrhagic states. He said that these conditions did not lend themselves to rigid classification, since the factors causing haemorrhage were complex, but it was convenient to divide them into those in which the blood failed to clot normally and those in which the bleeding time was prolonged. Hereditary haemorrhagic states showed a diversity in their mode of inheritance which had not always been appreciated. In the treatment of haemophilia the local application of coagulant venoms was an important advance, but liver extract, oestrin, and moccasin venom had been failures, and he himself had obtained no results from the Sheffield extract of egg albumen. Idiopathic thrombocytopenic purpura was now a well-defined condition, and splenectomy was the most successful treatment for it, but its *modus operandi* was imperfectly understood and relapse was frequent. Vitamin C was a remedy which had been tried in a variety of haemorrhagic states, but it was of value in scurvy only. The discovery of ascorbic acid had nevertheless been a stimulus leading to further research, and the newly identified vitamins P, K, and T awaited clinical trial. It was important that such trials should be thoroughly carried out on chronic cases, which were more suitable for experiment than acute cases, and that objective criteria obtained by quantitative tests should be used in assessing the value of such remedies.

Dr. N. B. CAPON (Liverpool), discussing haemorrhagic conditions in the newborn, pointed out that spontaneous haemorrhage might occur in infants from a variety of causes, but he wished to confine his remarks chiefly to that condition known as "haemorrhagic disease of the newborn," the onset of which occurred on an average about forty hours after birth. At the Liverpool Maternity Hospital the frequency of this disease was 1 in 405 cases, and his study was based on sixty-three, fifty-eight of which recovered. There was no apparent relation with the sex or weight of the child or with any abnormality in the mother. The aetiology was unknown and the condition so urgent that full haematological investigations were impracticable. In fifty-seven of his cases bleeding occurred only from the alimentary tract, which suggested the possibility of some local cause. A few mild cases appeared to require no treatment; the majority were relieved by the intramuscular injection of whole blood. In severe cases, or if this measure failed, the blood should be given intravenously.

Dr. JANET VAUGHAN reviewed published reports of the treatment of idiopathic thrombocytopenic purpura by various methods. These could be classified under three headings: (1) vitamins (C, P, and T); (2) hormones; (3) miscellaneous remedies. There was no evidence that vitamin C or P had any therapeutic effect, and the influence of vitamin T remained to be proved. The weight of evidence was also against the utility of ovarian extracts, the thyrotropic hormone, parathormone, and liver extract. The claim of Peck and Rosenthal that moccasin snake venom was a specific remedy had not been substantiated in other clinics, and their own results, when carefully examined, appeared far from satisfactory. Divergent results had been reported by careful observers from x-ray therapy, and it was suggested that there may be two types of the disease differing in their response to this treatment. Transfusion probably had value only in pre- and post-operative treatment. Representative figures for splenectomized cases were reviewed. The operative mortality for acute cases to-day was 13.6 per cent.; for chronic cases, 7 per cent. Excluding operative fatalities, in a total of 303 patients 217 recovered completely, forty were improved, and eighteen were not benefited. It was suggested that late relapses might be due to the presence of accessory spleens.

Dr. S. C. DYKE (Wolverhampton) spoke on the clinical pathology of haemorrhagic states. The first investigation should be a full blood count, and the collection of blood for this purpose gave also an opportunity of observing the bleeding time. A possible underlying cause was leukaemia, and in some forms of this disease, often accompanied by ulceration of the mouth, abnormal cells did not appear in the blood, which showed only leucopenia and anaemia. Sternal puncture would settle the diagnosis, but was unjustifiable in haemorrhagic states. If there were obviously few platelets in a stained film a platelet count should be done: the result was always under 50,000 in idiopathic thrombocytopenic purpura, and reduced to a less degree in anaphylactoid types, where a history of preceding urticaria or joint pains was also helpful. He preferred White and Lee's method of estimating the coagulation time to Dale and Laidlaw's, since it gave a much greater contrast in results: a time of over fifteen minutes obtained by the former method indicated a liability to severe haemorrhage during operation. He had found minor degrees of scurvy common, as indicated by ascorbic acid secretion, but treatment with this remedy was disappointing.

Dr. R. G. MACFARLANE discussed the mechanism of haemorrhage and haemostasis. It was usually considered that unduly prolonged haemorrhage occurred either when the coagulation time was lengthened or when there was a deficiency of platelets, but it could arise in the absence of either of these abnormalities. He had devised a new form of experiment which threw some light on the mechanism of haemostasis. It was possible to bring a single capillary under microscopical observation and to puncture it with a mechanically controlled needle. Blood escaped for a short time, after which the capillary contracted and remained empty, only refilling with blood three hours later. A rabbit given a powerful anticoagulant such that its blood *in vitro* remained fluid for a week, did not bleed unduly from a cut. He suggested, therefore, that capillary contraction caused the initial arrest of haemorrhage; undue haemorrhage might be primary owing to failure of this contraction, or secondary owing to failure or abnormality of clot formation during the period of contraction. He had treated seven cases of

haemophilia with the extract of egg-white recommended by Dr. Timperley, and had observed no change in the coagulation time except that in one case there was an increase. He disagreed entirely with the hypothesis on which this treatment was based.

Dr. W. A. TIMPERLEY (Sheffield) pointed out that local stypties were of limited value in haemophilia: something was needed which would control internal haemorrhage as well. He and his colleagues claimed that the extract of egg-white prepared by their method reduced the coagulation time and the liability to bleed: seven authentic haemophiliacs had been maintained in good health and free from haemorrhage in spite of a total of forty-one dental extractions, and in one case a street accident involving multiple injuries. The method of preparing the extract had been modified and two active substances identified, one a carbohydrate and one a protein; both were thermostable, but their activity was lost after two or three weeks, and the stored products sometimes came to have the opposite effect to that desired. A single dose should halve the clotting time within twenty-four hours; some samples had this effect within a few minutes. The treatment had to be persisted in, but eventually one dose a week might be enough. He concluded by asking for the indulgence of the profession while further attempts were being made to overcome difficulties in the process of extraction.

Professor G. A. CLARK (Sheffield) gave further particulars of the work described by the previous speaker. He pointed out that there were pitfalls in the method of extraction and suggested that some of those who had sought to repeat the work without success had not escaped these. The extract should be tested on cats for its capacity to reduce clotting time before being given to patients. The extract did not antagonize the action of heparin and did not reduce the clotting time *in vitro*: its action, therefore, must be indirect. Dr. HELEN M. M. MACKAY disagreed with Dr. Capon when he said that slight cases of haemorrhagic disease of the newborn required no treatment. A small haemorrhage might be followed by a very large one, and at the first sign an adequate intramuscular dose (say, 18 c.cm.) of citrated blood should be given at once and repeated in twelve hours. Dr. W. R. F. COLLIS (Dublin) recommended giving 10 c.cm. whole blood at once, repeating this in six hours and transfusing if this did not arrest the haemorrhage. Professor J. W. MCNEE (Glasgow), reverting to the subject of thrombocytopenic purpura, stated that he had examined spleens removed from patients with this condition and found them perfectly normal, not only in size but in microscopic structure. There was therefore no change in the spleen which would explain either the origin of the disease or the beneficial results of splenectomy. Dr. ALAN MONCRIEFF described a case of thrombocytopenic purpura in an infant, occurring at an earlier age than any previously recorded. He questioned the reliability of the tourniquet test for latent scurvy; the two arms might give different results, and the pressure advocated—90 mm. —was too high at least for children. Dr. R. E. STEEN (Dublin) recalled some experiences in which he had tested the possibility of reducing the clotting time in haemophilia: he had found that nothing would do this except whole blood or plasma. Professor S. P. BEDSON considered that the function of the spleen was to remove and destroy effete platelets. Their presence could be demonstrated by tearing out the fresh tissue or in tissue culture, but fixed material was unsuitable for studying the platelet content of the organ. Splenectomy or blockage with india ink caused a rise in the platelet count. Mr. E. R. FLINT (Leeds) maintained that the behaviour of the spleen could not be explained in such simple terms, and described a case in which the rise in the platelet count was much delayed after splenectomy.

Sir THOMAS HOUSTON (Belfast), in concluding the discussion, said that what they all found so difficult in face of haemorrhage was to decide how long it would continue and with what result. One case would respond at once to treatment and another continue in grave danger in spite of it. He described an experiment which appeared to show that adding normal platelets to haemophilic blood would cause it to clot rapidly, and suggested that some qualitative change in the platelets might be concerned in the disease.

Professor WITTS, in reply, adhered to his opinion that eventual relapse was fairly frequent after splenectomy in thrombocytopenic purpura, and that further operation in search of spleniculi was not advisable. He reiterated his failure to confirm the efficacy of Dr. Timperley's extract, and pointed out that cures for haemophilia were liable to attain undesirable publicity. He himself had been reported, quite incorrectly, to be exploiting a treatment devised by Rasputin! It was exceedingly difficult to assess clinical results in this disease, and the satisfactory repetition of Dr. Timperley's work was also extremely difficult owing to the changes which were being made in the process of extraction and the alleged instability of the product.

SECTION OF SURGERY

Wednesday, July 21

Surgical Treatment of Peptic Ulcer

With Professor P. T. CRYMBLE, president of the Section, in the chair, a discussion on the surgical treatment of non-stenosing peptic ulcer was opened by Professor JOHN MORLEY (Manchester).

Professor Morley said that in non-stenosing ulcer the trend was towards conservatism because of improved medical technique. Diet had been found of more value than alkalis, and the fractional test meal had proved a better guide to treatment than diagnosis. But there were failures, and the indications for surgery needed crystallizing. With regard to duodenal ulcer he was against too early intervention in cases in which there was bleeding, although he believed in operating as soon as a severe haemorrhage had been recovered from. Simple gastrojejunostomy was ineffective in the treatment of a bleeding ulcer, and he thought it best to include the duodenum in some form of gastrectomy. In the case of non-bleeding duodenal ulcers which had failed to yield to medical treatment, some surgeons advocated gastrojejunostomy and others partial gastrectomy. Because of the grave risk of anastomotic ulcer after the former—he believed the incidence to be about 10 per cent.—he favoured partial gastrectomy when the acidity was high. In women, in whom the incidence of recurrent ulcer was less and the acidity lower, and in elderly patients, he favoured gastrojejunostomy. As to gastric ulcer, the fear of post-operative recurrence was very much less and the dread of supervening carcinoma much greater. The incidence of the latter had been much exaggerated; he believed it to be a rare event. The difficulty was more that of distinguishing between simple and malignant ulcer, especially since there was a not uncommon slowly growing carcinoma simulating ulcer symptomatically. Because medical treatment was so often followed by relapse, he thought surgical treatment offered more in the treatment of gastric than of duodenal ulcer. Partial gastrectomy he regarded as the operation of choice. Gastrojejunostomy and simple excision were unsatisfactory. He himself was in favour of the Schoemaker modification of the Billroth I operation. In gastrojejunal ulceration there was only one operation of merit—the undoing of the anastomosis and the performance of a high gastrectomy.

Mr. NORMAN C. LAKE thought that the differences of opinion between physicians and surgeons on this subject depended on their different interpretation of what constituted a cure. The surgeon hoped to achieve a per-

manent relief of symptoms and to make the patient a completely effective member of the community, whatever his occupation might be. The physician was frequently satisfied if the patient's symptoms could be kept under by permanent restrictions of one sort or another, with a level of general activity well below his normal. Although, when the aetiology of peptic ulcer was known, treatment would be exclusively medical or prophylactic, at the present time, he claimed, surgical treatment more closely approximated a real cure. In the argument as to the relative values of gastrojejunostomy and partial gastrectomy, he, Mr. Lake, agreed with Professor Morley. The neutralization of the stomach contents in gastrojejunostomy occurred only in the region of the stoma, as was proved by post-operative test meals, and the stoma was subject to ulceration. Partial gastrectomy was the operation of choice. He reviewed a series of 320 partial gastrectomies, 269 of which were performed for peptic ulceration. The number of unsatisfactory cases was approximately 4 per cent.; anastomotic ulceration occurred in under 2 per cent. A mild microcytic anaemia followed in a few cases; no case of pernicious anaemia had been noted. Mr. Lake thought the strongest argument against surgical treatment was the operative risk, which he considered higher than was generally represented. On this account he was not prepared to operate unless the patient had had a good trial of various medical treatments. In conclusion, he thought that any assessment of results in peptic ulcer must be made with a recognition of the vagaries in the natural history of the disease.

Dr. CARL SEMB (Oslo) reviewed the subject from a Scandinavian standpoint. There medical treatment, with six weeks' rest and suitable diet, yielded good results in approximately half the cases, depending mainly upon the length of history. Two or three courses of medical treatment were tried before surgery was invoked. In Germany gastrojejunostomy had been more or less abandoned: in America, on the other hand, it was the operation most employed. This discrepancy had been explained as due to the more severe gastritis in the German cases. The Norwegian cases seemed to resemble the American, and gastrojejunostomy, for ulcers mostly in the juxtapyloric area, showed 60 to 70 per cent. good results, 15 to 20 per cent. fairly good results, and 10 to 15 per cent. bad results. Anastomotic ulcer was rare in Norway. The unsatisfactory results were usually found in young patients. But partial gastrectomy was more often performed. It gave better results, with a mortality rate as low. In 250 Norwegian cases partial gastrectomy was followed by some degree of anaemia in 45 per cent. of cases. But in this connexion there was a great difference between the sexes. Whereas 25 per cent. of male patients had an anaemia, usually of slight degree, 70 per cent. of female patients presented anaemia, which in 35 per cent. of cases was severe. In some cases of small duodenal ulcers in young patients a pyloroplasty was performed. Dr. Semb finally described a modification of the Billroth I operation in which the anterior wall of the duodenum was split to overcome technical difficulties by making a larger opening.

Colonel A. B. MITCHELL (Belfast) said that, because of the excellent results of gastrojejunostomy in cases of stenosis he had always produced an artificial stenosis at the time of operation in duodenal cases. He agreed with Professor Morley in deprecating too early interference in bleeding ulcer.

The PRESIDENT showed a series of lantern slides illustrating the steps of partial gastrectomy, and pointed out a number of anatomical variations which might be encountered.

Mr. G. GORDON-TAYLOR said he was almost in complete agreement with Professor Morley except for the particular form of anastomosis advocated. He had been impressed by the small incidence of microcytic anaemia found by Professor Morley. He also had found, as Dr. Semb had stated, that post-operative anaemia occurred chiefly in women. On that account he was loath to do a partial gastrectomy in women. But he was still in favour of early intervention for bleeding ulcers because of the impairment of liver and renal functions which followed delay.

Professor MORLEY, replying, rather regretted there had been so little fundamental difference of opinion. It was only for gastric ulcers that he preferred the Schoemaker operation; he preferred the Polya method for duodenal and anastomotic ulcers because it was more destructive of gastric function. Again, he thought anaemia less prevalent after the Schoemaker than after the Polya operation.

Gastroscopy in Dyspepsia

Mr. H. W. RODGERS read a short paper on the use of the gastroscope in cases of dyspepsia with normal x-ray findings. He said that any investigation of a dyspeptic patient, where radiology had failed to reveal a lesion, was incomplete without gastroscopy, since a small ulcer, a severe gastritis, and rarely a carcinoma might be demonstrated. He showed coloured slides to illustrate both normal and pathological processes. Gastroscopy was of especial value where dyspepsia still continued after operation, although the stoma could only be fully viewed in 50 per cent. of cases.

Mr. HAROLD C. EDWARDS referred to the disinclination in this country to adopt gastroscopy as a routine. He regarded it as invaluable, preventing many unnecessary laparotomies. The PRESIDENT referred appreciatively to this new method of demonstrating the pathology of the "living" stomach. Mr. HAROLD DODD thought that, because of the failure of radiology to demonstrate anastomotic ulcers in his series, their incidence had probably been underestimated. He advocated routine gastroscopy in cases not doing well after gastro-jejunostomy. Mr. LAKE described a form of gastroscope he had employed some fifteen years ago. This he had introduced through the stomach wall after laparotomy, and from it he had learned a great deal of lining pathology. Professor L. R. BRAITHWAITE (Leeds) wished to know if gastroscopy could throw any light on duodenal regurgitation, but Mr. RODGERS replying stated that the procedure was carried out under abnormal physiological conditions both of the stomach and of the patient, and that therefore little information was likely to be obtained.

SECTION OF OBSTETRICS AND GYNAECOLOGY

Wednesday, July 21

Professor G. C. LOWRY, the president of the Section, was in the chair. Professor HERBERT THOMS of Yale University, whose paper appears in this week's issue of the *Journal* at page 210, was not able to be present.

Prontosil in Puerperal Infections

Mr. G. F. GIBBERD opened a discussion on prontosil and similar compounds in the treatment of puerperal infections due to the haemolytic streptococcus. His paper was based on 157 cases of puerperal infection treated at Queen Charlotte's Hospital between January, 1936, and March, 1937. After a preliminary reference to the various types of the drug and the dosage used, he compared this series of cases with a control series treated in the hospital for the two years before the introduction of the new drug. The cases were divided into groups according to the clinical invasion of the infection in the patients, and a comparison of the results in each case with the parallel set of cases in the control series was shown in a table. A second table showed the comparison between the present series and the control series in the duration of the illness (interval between confinement and discharge from hospital) in non-fatal cases in which an inflammatory mass was demonstrated beyond the limits of the birth canal. This table brought out the much shorter time spent in hospital

by patients who had been treated with prontosil. In conclusion, Mr. Gibberd pointed out that the mortality rate from haemolytic streptococcal infections had been much reduced by the new drug. It was necessary to consider whether the improvement since January, 1936, was due to the efficacy of the treatment or to a change in the virulence of the prevalent organism. Both factors might be concerned. In non-fatal cases in which tissues beyond the limits of the birth canal had been invaded there was some clinical evidence that the new drug did actually hasten the resolution of the inflammatory process. This seemed to show that the treatment rather than a change in the virulence of the organism was responsible for the improvement.

Dr. DORIS E. BROWN (Belfast) reported thirty cases of puerperal sepsis due to Group A haemolytic streptococcus that had been treated with prontosil in the Royal Maternity Hospital, Belfast, between May, 1936, and May, 1937. Of the thirty cases, twenty had a local infection of the uterus, seven were cases of septicaemia, and three had general peritonitis alone. Of the twenty cases of local infection, nineteen appeared to be benefited by prontosil, and there were no deaths in this group. For three years before the introduction of prontosil the death rate for cases of septicaemia was 87.5 per cent., and the mortality for all cases due to infection by the haemolytic streptococcus was 23.53 per cent. Since the use of the drug the mortality rate in cases of septicaemia was 28.57 per cent., and for all cases of puerperal infection 6.6 per cent. Prontosil had also been given to twenty-one patients with mastitis. In twenty resolution was complete, and the other patient was left with a small residual abscess which rapidly cleared up on incision. Of eighteen patients with mastitis —previous to the introduction of prontosil—nine developed breast abscesses, which were incised. Mr. L. CARNAC RIVETT emphasized certain points in the figures presented by Mr. Gibberd—for example, the sudden and dramatic drop in the cases of septicaemia from an average mortality of 71 per cent. to a mortality of 27.3 per cent. Professor H. J. DREW SMYTHE (Bristol) referred to a year's use of prontosil and its derivatives. The mortality rate was practically the same in the series treated with prontosil as in those not so treated, but the main point was the rapidity of cure in the treated cases. Dr. BETHEL SOLOMONS (Dublin) felt there was a grave danger in the drug giving a false sense of security. The general practitioner must be made to realize that he must not produce cases of failed forceps in the belief that prontosil would always act as a cure for the ensuing septicaemia. They had gone through the gamut of dettol cream, vaccines, and other possible cures for sepsis, but real cure still remained in prevention, which could only be accomplished by a knowledge of normal obstetrics as taught by skilled teachers. Professor J. CHASSAR MOIR (Oxford) said that a few clinical reports had appeared which suggested that in certain individuals protracted prontosil therapy might dangerously interfere with the blood-forming mechanism. This urgently called for investigation. It seemed unwise to give prontosil or its allies as a routine prophylactic measure. He also referred to the remarkable effect the drug had in combating *B. coli* infection of the urinary tract. In most cases the urine could be rendered sterile in about five days. This might account for the beneficial action of the drug in some cases of puerperal pyrexia due to a coincident urinary infection. Dr. J. ARTHUR H. SHERWIN (Melbourne, Australia) also joined in the discussion.

Habitual Abortion

Mr. PERCY MALPAS (Liverpool) in a paper on the problems of habitual abortion first presented a statistical review from which he concluded that perhaps eighteen out of every hundred pregnancies ended in abortion, seventeen due to casual random influences and only one to the presence of a recurrent factor. The presence of such a recurrent factor might be inferred with reasonable certainty after three successive abortions. He believed that recurrent stillbirths, recurrent abortions, and recurrent toxaemias and accidental haemorrhages were sometimes closely allied conditions. Possible aetiological factors which he discussed were twinning, foetal malformations, familial tendencies, chronic maternal diseases, syphilis, poor general health and nutrition, obstetric trauma, chronic nephritis, and recurrent toxaemias and accidental haemorrhages. One or more of these factors were found in sixty-five of the 115 cases he reviewed. In the remaining fifty no cause could be found; from a general consideration of these cases only two features emerged: a large number showed a marked tendency to obesity, and in those cases in which pregnancy was ultimately carried to term the children were under weight, indicating some metabolic failure.

Nine of his cases received wheat-germ-oil therapy, and of these two went to term. He thought that vitamin E deficiency was not a constant factor in recurrent abortion. Ascorbic acid might also play some part in controlling intra-uterine development. Four of his patients were treated with progestin, two successfully. Progestin therapy was probably the most effective known treatment for certain cases of habitual abortion. Thirty-three patients were treated by injections of organic arsenical compounds; in no less than thirteen of the twenty who gave birth to living children no cause had been detected for previous abortions, whereas among the failures only two cases belonged to this group. Mr. H. L. HARDY GREER (Belfast) opened the discussion. He regarded proluton as an endocrine preparation of some value.

Dr. O'DONEL BROWNE (Dublin) congratulated Mr. Malpas on his investigation, and stressed the fact that syphilis was only found in 5 per cent. of such cases, and in only approximately 50 per cent. of all cases of abortion could the actual cause be discovered. His own experience with proluton was most satisfactory; he was more reserved in his view on the use of wheat-germ-oil. Dame LOUISE MCILROY stressed the importance of food deficiency—especially in calcium—as a factor in recurrent abortions. Dr. J. J. HOLLAND (Perth, Western Australia) stated that sufficient thought was not given to the male partner, in whom the fault lay more often than was stated. It was useless to give all the methods of treating the female when she had no chance of carrying the pregnancy because of a fault in the male.

Hystero-salpingography

Mr. V. B. GREEN-ARMYTAGE (London) read a paper on hystero-salpingography, its obstetrical and gynaecological importance.

Mr. Green-Armytage remarked that the insufflation test for patency of the Fallopian tubes was open to criticism. In the first place a negative finding at a pressure of even 250 mm. Hg was often due to uterine spasm compressing the isthmial part of the tube, and not to any lack of patency. Secondly, insufflation gave no information as regarded both tubes. Thirdly, no evidence was obtained as to the site of occlusion or as to the existence of any developmental abnormality, as, for example, unicornuate uterus. Hystero-salpingography, on the other hand, he believed to be a precise and scientific method. It should be applied before and after all plastic operations upon the tubes; it was physically and psychologically of great prognostic value; and its therapeutic effect was double that of a simple insufflation. Discussing occlusion of tubes Mr. Green-Armytage further stated that in a consecutive series of 300 cases seeking relief for sterility the tubes were blocked in only 14 per cent., and in only 12 per cent. of these cases could the condition be attributed to gonorrhoea.

Dr. BETHEL SOLOMONS said the most important fact elicited from this paper was that the "doubting Thomases" who would not even try plastic operations on the tubes must have been silenced. This series of films showed what

he had endeavoured to prove for many years—that operations on the tubes produced a small but important percentage of success in many hopeless cases. He had started the first *x*-ray department in connexion with a maternity hospital in 1926 at the Rotunda, and he had done many salpinograms since. Ethidol, he believed, gave the best results, and he took a second film ten minutes after the first to eliminate spasm of the uterus. He had observed that very severe puerperal sepsis was seldom followed by sterility, but a mild degree of sepsis with parametritis had often been followed by closure of the tubes. Salpingograms should be taken as a routine after plastic operations on the Fallopian tubes. Professor CHASSAR MOIR and Professor LOWRY congratulated Mr. Green-Armytage on his excellent results, and urged the continued use of this method of dealing with the investigation of tubal disease.

SECTION OF PHARMACOLOGY AND THERAPEUTICS INCLUDING ANAESTHETICS

Wednesday, July 21

Variation in Response to Drugs

With the President of the Section, Professor E. B. C. MAYRS (Dunmurry) in the chair, Professor A. J. CLARK (Edinburgh) opened a discussion on individual variation in response to drugs.

Professor Clark said that the method of determining the minimum lethal dose of a drug by giving varying doses to a small number of animals was inaccurate because no account was taken of individual variation, a factor which depended both upon the population and upon the drug. The extent of this variation could be reduced by making the population as uniform as possible, but, even so, animals still showed wide variation in their response to drugs. If the shape of the characteristic curve from 10 per cent. to 90 per cent. mortality was established the laws of probability could be applied, and it was possible to calculate the chance of a mortality of 1 in 1,000. Characteristic curves could also be obtained by plotting the dosage on the logarithmic scale. So far as human variations to drugs were concerned, it had been shown that 16 per cent. of a series of patients were narcotized by 75 per cent. of the median narcotic dose of sodium amytal, a variation comparable with that found for the lethal action of this drug in animals. Likewise, 50 per cent. of the population were narcotized by 80 per cent. of the dose of avertin needed to narcotize 84 per cent. This was also comparable with animal experiment. Professor Clark stated that individual variation was an unattractive subject because its existence constituted a limitation to therapeutic measures of an annoying character. It seemed probable that the extent of individual variation was consistently underestimated, because if an individual representing an extreme of variation happened to be encountered in a small group, the result was apt to be discounted as an accident. The evidence available, however, suggested that whenever it was possible to measure quantitatively the effects produced by a drug in a large population an orderly distribution of variation in response was revealed.

Professor J. H. GADDUM said that, although it was possible to make some allowance for such factors as age, sex, weight, and the general condition of patients, he considered that a large part of the individual variation to drugs was unpredictable. A chance must always be taken when prescribing, but he liked to know as far as possible the odds for and against. He foresaw the time when it would be possible to predict the percentage of cures to be expected from any given dose and to estimate exactly the danger involved in increasing the dose to any given extent. At present there was a lack of data of a quantitative nature in connexion with human response to drugs, and there were two ways in which this information could be obtained. In some cases it was possible to measure the sensitivity of the individual—as, for example, when digitalis was administered and bradycardia observed. The amount consumed measured the sensibility of the patient, and if a large number of such figures were available it would be possible to calculate the variability and also, possibly, the effect of age, sex, and weight. The second method was to give the same two doses each to a series of cases. From the percentage of reactions it was possible to calculate the variability. For example, if the percentage of toxic effects due to two different doses of an organic arsenical drug were known, it was possible to calculate the probable percentages corresponding to other doses and thus to know what dose would be quite safe.

Dr. GEORGE GRAHAM drew attention to the local reaction which might follow the administration of insulin. He was able to distinguish four groups. In the first complaint was made of a stinging sensation as soon as the insulin was injected. This seemed to depend upon the fact that the insulin employed was not isotonic to sodium chloride. In the second group complaint was made of red, irritating reactions, resembling those sometimes occurring after the injection of a vaccine. If this phenomenon was observed a trial should be made of all the different brands of insulin, and usually one would be found which would cause little or no pain. It was possible, however, to desensitize a patient suffering from this type of reaction. The third group of patients comprised those in whom a hypertrophy of the subcutaneous tissues resulted in a fatty tumour; and in the fourth group a local fat atrophy caused a depression in the skin. If these conditions were noticed the patient should be persuaded to vary the site of injection as much as possible and another brand of insulin should be tried.

Dr. P. MACCARVILL (Dublin) said that from the dermatological point of view individual variation in response to drugs was without limit. Whether or not a person became sensitive to a substance depended upon three factors: his personal idiosyncrasy; the dose of the antigen; and, if the dose of the antigen was sufficiently large, no personal idiosyncrasy was required. It was fortunate that the skin as an organ was exceptional in the intensity of its variations and sensitivity, for, if other organs were equally sensitive, still greater difficulty would be experienced in determining both therapeutic and lethal doses. The promiscuous use of iodine, picric acid, and similar antiseptics caused frequent trouble, especially when continued after the manifestation of obvious reaction in the skin. Repeated parenteral administration of arsenic and gold after advance warnings in the form of reddened forearms or moist flexures was asking for trouble; yet very few cases of exfoliative dermatitis occurred without these previous warnings.

The PRESIDENT was impressed by the fact that pharmacologists evidently were interested in quantitative variations and clinicians in qualitative variations. If a simple method could be found of estimating quantitative variations in clinical practice it would be of considerable value.

Dr. P. C. P. INGRAM (Newport, Mon.) referred to the frequency with which powerful arsenicals were administered without previous clinical examination and without untoward effect. The nervous tension experienced by the syphilitic patient undergoing treatment might be a factor in the production of undesirable reactions. Dr. J. F. BROCK (Cambridge) asked if it was believed that idiosyncrasies were inherited or acquired, and if they were met with in children. Professor H. S. RAPER (Manchester) cited experiments performed many years ago in which mustard gas diluted with benzine was applied to the forearm of many subjects. There was considerable variation in the reactions produced by a substance with which the subjects could not previously have come into contact. Professor DAVID CAMPBELL (Aberdeen) considered that if there was a variation of 1 to 4 in the fatal dose of a substance the use of intravenous anaesthetics constituted a very real danger. Likewise, accuracy could not be

expected from the administration of digitalis when the dosage was based solely on the weight of the patient. He believed that drugs should be given singly and not in mixtures, and that the dose should be increased until the desired effect was produced.

Iron Therapy in Hypochromic Anaemia

Dr. J. F. BROCK (Cambridge), in a paper on this subject, said that nowadays perhaps the action of iron in this condition was less perfectly understood than it was five years ago. This was because the result of balance experiments revealed a number of cases of hypochromic anaemia in which iron deficiency was not the sole mechanism at fault. This type of anaemia was often associated with an inadequate diet or with chronic loss of blood; but achlorhydria was sometimes a factor. Balance experiments demonstrated that when patients suffering with this condition were given enough iron by the mouth 11 per cent. to 32 per cent. of the amount ingested was retained in the body, although a consideration of the increase in the haemoglobin percentage suggested that the amount retained in the blood was very much less. Many patients with a mild degree of hypochromic anaemia improved when given relatively small amounts of iron, but he thought that in general the daily amount of iron administered should not be less than 300 milligrammes. This could be prescribed in the form of pil. ferri, 45–90 grains, or of iron and ammonium citrate, 60–90 grains, a day. The intramuscular injection of iron preparations was useless; if sufficient iron to cure the anaemia were injected toxic symptoms might occur. All forms of organic and colloidal iron were relatively ineffective, and the concurrent administration of other drugs, such as copper, manganese, and cobalt was not indicated. It was possible that in a small group of these patients iron had an additional effect upon the intestinal tract, but it was impossible to distinguish this group clinically. Sufficient iron should be given to enable the patient to respond, and an adequate diet was also desirable.

Dr. J. H. THOMPSON (Croydon) inquired if there was any advantage in administering glycerin with iron and ammonium citrate. Professor CLARK said that, as the importance of the duodenum as an absorbing centre was being increasingly recognized, he wondered if the administration of massive doses of iron altered the reaction of the contents of this organ. It was further possible that ferrous salts had a buffering effect. Professor CAMPBELL pointed out that Dr. Brock had already cited a case with achlorhydria in which the absorption of iron was greater than in cases with normal acidity. Professor GADDUM considered that the concurrent administration of vitamin C promoted the absorption of ferrous salts.

In reply Dr. BROCK stated that little was known regarding the absorption of iron from the intestine, but he felt that physico-chemical reactions played an important part in this process.

SECTION OF ANATOMY, PHYSIOLOGY, AND BIOCHEMISTRY

Wednesday, July 21

Anatomy and Physiology of the Sex Glands

The President of the Section, Professor E. C. DODDS, opened a discussion on the anatomy, physiology, and biochemistry of the sex glands. Professor Dodds's paper was published in last week's *Journal* at page 163.

Dr. A. S. PARKES referred to the part played by the sex hormones in the development and treatment of prostatic enlargement. He reviewed the evidence which led to the suggestion that prostatic enlargement was due to excessive oestrogenic activity of the testis, and showed that both progesterone and testosterone could inhibit the oestrous changes.

Dr. P. M. F. BISHOP stated emphatically that anterior pituitary preparations were ineffective when administered by mouth. He mentioned that examinations of vaginal smears and the production of "threshold" uterine bleeding were useful indications of the physiological dosage of oestrin in women.

Dr. J. M. ROBSON (Edinburgh) showed that luteal function could be maintained in hypophysectomized rabbits by means of oestrin. In twenty-one out of twenty-two cases of pre-eclamptic toxaemia the administration of progesterone had prevented the onset of fits. None of these twenty-two patients had died, as compared with a mortality of 10 per cent. in thirty-one control cases. Finally he referred to the prolonged and potent oestrogenic activity of triphenyl ethylene when administered by mouth.

Mr. R. K. BOWES described a method of obtaining endometrial strips by using a modified Randall's curette. Direct assessment could thus be made of the progress of endocrine therapy in menstrual disturbances. He had obtained satisfactory results by treating with oestrin cases of kraurosis, senile vaginitis, and dyspareunia occurring at the menopause. Gonadotropic extracts, he thought, must be given to supplement oestrin to obtain repetition of the menstrual cycle in cases of amenorrhoea, and he had been favourably impressed by "antex" used in a small series of cases of amenorrhoea, oligomenorrhoea, and gross irregularity of menstruation.

In the absence of Mr. W. R. WINTERTON the president showed some slides indicating the appearance of the human vaginal smear at the time of the menopause and during the phase of full oestrous activity. Dr. PARKES suggested that the changes in the vaginal smear might be due solely to the psychological effects of treatment. Dr. Bishop had, however, obtained no such changes while administering an inert material for a preliminary control period. Dr. R. D. LAWRENCE asked whether there was danger of inducing carcinomatous changes by the administration of oestrin. Professor DODDS believed that no such danger existed if oestrin were employed solely for the purpose of reproducing physiological phenomena. He felt, however, that triphenyl ethylene, the synthetic oestrogenic compound referred to by Dr. Robson, should be employed clinically only with considerable caution.

The Parathyroid Glands

Professor W. J. E. JESSOP (Dublin) read a paper on the clinical bearings of the parathyroid. These glands secreted a hormone the primary object of which was the maintenance of the blood calcium at an optimum level for the control of the neuro-muscular system, and this was attained by controlling the balance between deposition and absorption of calcium salts in the bony reservoirs. He reviewed the clinical manifestations of hypoparathyroidism, of which tetany was the chief. Tetany might also be caused by rickets and alkalosis. It had been recently suggested that otosclerosis was a manifestation of hypoparathyroidism. Hyperparathyroidism occurred in the presence of a parathyroid tumour, a case of which he gave a full account. Dr. PARKES inquired whether there was any evidence of excessive function of the parathyrotropic hormone of the pituitary in cases of parathyroid tumour, and whether this hormone had been employed in hypoparathyroidism. Professor JESSOP answered both questions in the negative. Professor DODDS had seen cases in which tetany had persisted for some time following an operation for Graves's disease but had eventually cleared up. Professor JESSOP suggested this might be due to gradual hyperplasia of the remaining parathyroid tissue.

Recent Work on Insulin

Professor A. WORMALL, in a paper on recent work on the chemistry of insulin, referred to the various methods of studying the constitution and structure of insulin, and he outlined the present position with regard to the chemical properties of this hormone. The crystallization of insulin

by Abel, and more recently as a zinc salt by Scott, was mentioned; insulin was a protein which contained fewer different amino acids than most proteins. There was evidence, from the work of various authors, that the cystine, glutamine or glutamic acid, tyrosine, and the free amino groups were essential for the characteristic hypoglycaemic action of insulin. The speaker described experiments, carried out by his colleagues and himself, which showed that blocking of the free amino groups by the action of phenyl *iso*cyanate or of benzyl carbonyl chloride caused complete inactivation of insulin. He also referred to investigations which had failed to demonstrate any antigenic activity of insulin.

Dr. R. D. LAWRENCE, in a paper on the use of protamine insulin and similar preparations, said that he had been unable to confirm the successful results claimed by Szent-Györgyi for the treatment of diabetic ketosis with succinic acid by mouth. With regard to insulin it seemed unlikely that it would ever be available for oral administration. Protamine insulin ("retard" insulin), however, was more lasting in its effect than soluble insulin, because it was injected as a precipitate which was only slowly dissolved and utilized at the normal reaction of the tissues. Its effect lasted for twelve to sixteen hours. Zinc protamine insulin was even more stable, and its effect lasted for twenty-four to thirty-six hours. Owing to the slow absorption of these compounds the amount of insulin circulating at any one moment was less than immediately after an injection of soluble insulin. The blood sugar rose higher, therefore, after a carbohydrate meal. Such hyperglycaemia, however, was not attended by ketosis. Owing to the prolonged effect of the new compounds there was a danger of hypoglycaemia occurring during the night, and it was wise to prescribe a buffer meal of carbohydrates before going to bed.

Dr. GEORGE GRAHAM agreed with Dr. Lawrence in regarding the new insulin compounds as being valuable additions to the list of diabetic remedies. They should, however, be used with caution, for the symptoms of overdosage were less apparent than in the case of soluble insulin, and the patient was liable to pass without warning into hypoglycaemic coma. Dr. PARKES mentioned the possibility of the development of anaphylactic phenomena after the administration of insulin obtained from different sources. Professor WORMALL thought that changing the brand of insulin was unlikely to arrest the anaphylactic phenomena. Professor DODDS had found that combination with zinc had prolonged the activity of both vasopressin and histamine, and asked whether this was due to a direct action on the tissues at the site of injection. Both Professor WORMALL and Dr. PARKES believed this to be the case.

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE

Wednesday, July 21

Early Diagnosis of Intracranial Tumours

With Dr. GEORGE RIDDOCH, President of the Section, in the chair a discussion took place on the early diagnosis of intracranial tumours.

Dr. F. M. R. WALSHE said that nowadays there was a danger of technique triumphing over reason in this sphere of medicine. Taking the clinical history in cases of intracranial tumour was an art which had to be learned; for instance, patients should not be questioned in such a way as to suggest the answers the questioner had in mind. The discovery of clinical signs should always be followed by a careful assessment of the relative symptoms. In his opinion many of the modern expensive technical investigations were unnecessary; too much reliance was placed on them and too little importance was attached to the due appreciation of the clinical evidence. Dr. Walshe, discussing briefly Cushing's report on 2,000 cases of intracranial tumour, mentioned that several cases had been wrongly sent for cranial operations, and in many others radiography could not have afforded an early diagnosis. Dr. Walshe referred to four features in the onset. (1) There was first the occurrence in a middle-aged patient, who had never been so afflicted before, of a series of recurrent epileptiform fits which were separated by intervals free from all subjective or objective symptoms. These generalized fits were more common than the localized ones. (2) Signs of raised intracranial pressure were not in some cases associated with vomiting, and the latter was not always projectile in nature. Slowing of pulse was uncommon except in rapidly growing tumours; it was more common in subdural haematoma than in intracranial tumour. (3) In other cases there were signs of a slowly progressive local lesion of the brain. He pointed out that slowly developing weakness of one side of the body in the middle-aged might be due to paralysis agitans. (4) When the onset suggested a malignant process it should be remembered that carcinoma of the brain was frequently secondary to a primary carcinoma of the lung. Such secondary growths were usually multiple. It was difficult to make a localizing diagnosis. Signs of meningitis might be present, and should be correctly assessed. There was usually a confused clinical picture in these cases, but progressive loss of weight with cachexia was often a significant feature. In any event the early diagnosis of an intracranial tumour was difficult, and might at times be impossible. Tumours might even develop without any clinical manifestations, and in few cases was diagnostic certainty permissible.

Mr. N. M. DOTT (Edinburgh) stated that three questions had to be answered. (1) Was a tumour present? (2) If so, where was it located? (3) What was its nature? Clinical neurology was the principal factor in diagnosis. Mr. Dott devoted his speech mainly to indicating the value in diagnosis of various special accessory methods of technical investigation, and showed illustrative lantern slides. Cerebral radiography revealed local signs of calcification or osteoporosis in tumours, and there might be evidence of skull erosion. Sometimes these signs were forthcoming before the onset of clinical symptoms. Examination of the cerebro-spinal fluid should be a routine procedure, but in cases of increased pressure a lumbar puncture should only be performed in a hospital where it was possible to operate immediately afterwards. A suggestive finding was a pressure of over 250 mm. of water; another one was an increase of protein in the fluid without a corresponding rise in the cell count. Ventriculography might be dangerous in low-pressure cases owing to the risk of compression of the brain stem, or risk to life might be incurred owing to the cerebellum being pressed upwards. Ventriculography should be the last diagnostic step to be undertaken, and be performed only when the conditions were suitable for an immediate operation. By these procedures an accurate differential diagnosis might be obtained. Cerebrovascular radiography gave a more intimate knowledge of the tumour itself rather than of its anatomical position in the skull, the state of the arterial and venous vascularization of the tumour could be precisely determined. The anatomical relation of the tumour must be carefully defined. The objective of the diagnosis was the cure of the patient, and therefore treatment was an essential factor in the diagnostic investigation. The investigator must consequently be fully familiar with the possible lines of treatment. A diagnostic physician might be seriously handicapped if he was ignorant of the surgical possibilities in any case, and hence both surgical and medical specialists must be consulted.

Dr. H. L. PARKER (Dublin) said that the first line of attack lay with the general practitioner, who could detect cases before, for example, irrecoverable blindness developed. Memory might be clouded even at the beginning, and symptoms of importance be thus not reported. Smell and taste might be affected early, and vision only later. Cases

were cited to illustrate these points, and it was emphasized that loss of memory might be an important early symptom, especially when associated with a habitual tendency to repeat statements. Hemianopsia was often an early symptom, as was also loss of hearing in one ear. These first symptoms were of great diagnostic significance, since later ones might be confusing. Dr. Parker strongly favoured team work in investigation by one or two surgeons and physicians who had been previously acustomed to work together. The neurologist was essentially a man of thought, predisposed to waiting for elucidatory evidence; the surgeon was a man of action, and might be dangerously precipitate. These lines of approach should converge in the successful treatment of the patient. Spinal puncture might be risky in these cases, especially when the tumour was situated above the tentorium. In a technical investigation the order of precedence should be the general practitioner, the neurologist, and the surgeon in conjunction with the neurologist. Early diagnosis and correct localization were the primary objectives.

Mr. A. A. McCONNELL (Dublin) agreed that the early diagnosis of intracranial tumour was essentially a matter for the general practitioner. When there was evidence of something encroaching upon the cranial cavity the diagnosis of a cerebral tumour was not infrequently correct, since these lesions were not uncommonly found, for instance, in post-mortem examinations. Only in young patients was headache an early significant finding. Vomiting, with or without headache, was significant when there were intervals in which the appetite was good and the working capacity normal. Surgeons should use all the clinical methods employed by physicians, for operative judgement depended on clinical knowledge more than on the knowledge derived from technical investigations, though the latter were essentially parts of the subsequent operative treatment, guiding, as they did, its various lines in different cases. They were supplementary, and did not replace clinical methods.

Dr. T. TENNENT said that psychological symptoms often appeared early in cases of intracranial tumour. Mental symptoms were more frequent in left-sided lesions and supratentorial growths. They included difficulty in concentration, loss of memory, irritability, confusion, stupor, worry about personal health, and suicidal tendencies. Erroneous diagnoses might, therefore, be easily made by the general practitioner. Functional mental disturbances in cases of tumour might simulate those in psychotic states, and were often chronic and resistant to treatment. There might be an exaggeration of pre-existing personality traits, such as homosexuality. Excitement symptoms might be insidious as regards their evolution, and they were often associated with lesions of the frontal lobes, but differentiation in this regard was of uncertain value. When the organic symptoms were predominant their duration was short and the deterioration of the patient rapid. No mental symptoms could be associated with any one special lesion of the brain.

Mr. W. GREY WALTER, speaking as a physiologist who had applied the measurement of varying electrical potentials to the brain tissues (electro-encephalography), described the uses and limitations of this technique, and reported a series of cases dealt with at the Maida Vale Hospital. He remarked that this method involved no danger or discomfort to the patient, and the time of examination was only one-quarter to half an hour. The appearance of rather slow pulsations of the potentials were amplified and recorded; their origination could be localized by technical means. The term given to them provisionally was "delta waves," in comparison with the "alpha waves" of Buerger, which constituted the normal rhythm. These delta waves were caused by the cortex in the neighbourhood of the tumour, and not by the growth itself. They were due to induced disturbance of the cerebro-spinal fluid or of the circulation. If the tumour was small or superficial, or did not involve the cortex very much, the waves might be absent in some cases. In other diseases they might also be absent, and the results could not then be trusted. This method of investigation was useful only when the short delta waves were present and the cortex was affeceld by the tumour. Cerebral tumours might be confused with idiopathic epilepsies, but the foci of these abnormalities were fortunately only placed in one or two definite parts of the brain, and the waves presented slight differentiating abnormalities. While this method was only available for the diagnosis of intracranial tumours, it might nevertheless be of very considerable value in them, indicating the way in which the cortex was functioning. The technique had not yet been made suitable for use by general practitioners, but in special cases of difficulty it might be employed by specialists with advantage.

Dr. A. GURNEY YATES (Sheffield) stressed the danger inherent in lumbar punctures. There might be no time for an operation to relieve dangerous symptoms, and careful precautions must therefore be taken. The fluid should be drawn off slowly and in small amount. An equal quantity of saline solution should be immediately injected; this might possibly relieve dangerous symptoms. Team work was always preferable in cases of intracranial tumour; an ophthalmologist and a deep-ray therapist might be helpful. Dr. J. PURDON MARTIN said that it was necessary to have more information from those who practised the newer methods of investigation as to their dangers and also of the proportion of cases in which reliable positive evidence was obtained when medical and neurological investigations had failed. In practice the problem was whether, when a cerebral tumour was suspected, one was justified in submitting the patient to ventriculography. Dr. H. G. GARLAND (Leeds) added that the most important way in which a cerebral tumour could be detected with certainty at an early stage was to educate the general practitioner to recognize the common first manifestations. He thought that the cases of visual failure, epilepsy developing in adult life, focal neurological syndromes, and mental changes were usually sent for specialist advice at an early stage, so that the recognition of the headache due to intracranial pressure was one of the most fundamental points in early diagnosis. The practitioner should be trained to analyse the characters of headache, for in many cases careful analysis would lead to an early diagnosis of intracranial tumour. Dr. W. RITCHIE RUSSELL (Edinburgh) stressed the importance of mental changes. It was very regrettable that cases of tumour should so often be sent to mental hospitals. Over the age of 45 to 50 the classical signs of brain tumour were often absent, and only insidious changes in the patient were noticeable at first. Professor E. MAPOTHER cited illustrative cases of moral degeneration as an early symptom of a cerebral tumour. There was not always an accentuation of the pre-existing mental disposition. Sometimes exastly opposite temperamental changes appeared—for instance, intemperance and dishonesty in previously strictly upright characters. This point was not yet adequately realized.

Replying to the discussion, Dr. WALSHE insisted on the need for neurological education. He thought that the electro-encephalograph was not yet scientifically safe. Mr. DOTT, agreeing that the discussion had been most instructive, stated that some cases were quite unsuitable for lumbar puncture. In focal epilepsy arterioradiography could be very helpful. The value of this and other methods could be best assessed by those who used them repeatedly. Thorotrast, though a carcinogenic substance, had done no permanent harm in his experience to patients in middle age, but he was doubtful whether it should be used for young patients. Dr. PARKER upheld the diagnostic value of encephalography. It was still in its first year of development in this respect, but some failures had been set off by many successes. The PRESIDENT, summing up, said that as yet there was no short cut to diagnosis. Clinical examination still remained paramount. The psychiatric aspects of intracranial tumours needed more investigation by psychologists and neurologists.

SECTION OF ORTHOPAEDICS

Wednesday, July 21

Fracture of the Neck of the Femur

After the chair had been taken by Mr. S. T. IRWIN, president of the Section, a discussion on operative treatment and results in fracture of the neck of the femur was opened by Professor E. W. HEY GROVES (Bristol).

Professor Hey Groves pointed out that Smith-Petersen's successful use of a steel nail in the treatment of this fracture was a triumph of practice over theory, for it had long been agreed that the use of metal for the internal fixation of fractures was to be avoided whenever possible. For sound physiological reasons the trend of almost all recent work had been away from the use of metal. There was now a danger that Smith-Petersen's method might suffer from the excessive popularity that had been the downfall of Lane's and Lambotte's methods, and the speaker hoped that readers of subsequent papers would dwell on the limitations and possible dangers of pin fixation as well as on its undeniable merits.

Professor SVEN JOHANNSON (Gothenburg) gave a detailed account of the blind method for insertion of the Smith-Petersen nail that he had used during the last six years. The results were striking. In all, 179 cases had been operated on with a mortality (from all causes—early and late) of 10 per cent. Of the patients who lived 95 per cent. had good bony union and function. In twenty-six cases the nail had been removed because it had worked out laterally and was causing pain; at the time of removal bony union was already well advanced.

Dr. ELLIS JONES (Los Angeles) thought that the acceptance of Smith-Petersen's method was perhaps a little too enthusiastic, and that surgeons must not (to quote the words of Sir Robert Jones) forget that "the problem before each of us is how to improve our skill and technique in both the operative and manipulative treatment, and how to determine what method we must adopt in each individual case to give our patients the surest, safest, and most complete restoration of function." The following methods required consideration: (1) the manipulative method of Whitman, which necessitated fixation of the limb in plaster; (2) internal fixation with metal, which rendered plaster unnecessary (a useful alternative to Smith-Petersen's method was that described by Austin Moore, who used three separate small stainless steel nails inserted through the trochanter and neck into the head of the femur); (3) internal fixation with an autogenous bone graft, where again a period of fixation in plaster was necessary.

Dr. Jones described his own operation as an alternative to the tibial bone graft favoured by Albee. Only one incision was required, seeing that the graft was obtained from the great trochanter and the upper end of the shaft of the femur. The removal of this graft enabled the surgeon to inspect the fracture site and confirm the accuracy of the manipulative reduction. A hole was now drilled through the trochanter and neck into the femoral head, and the graft was inserted. Being a square peg in a round hole it fitted snugly, and as it was cancellous bone of the same type as that found in its new bed vascularization was rapid. Further fixation was obtained by the insertion of two Moore's pins. Although the results of this comparatively new procedure were most encouraging, it must not be said that this or any other method was the method of choice. In the hands of Leadbetter, Whitman's method was now giving bony union in 71 per cent. of cases ranging in age from 40 to 90 years, and it was probable that manipulative reduction and plaster fixation was still the method of choice in young patients in whom the disadvantages of plaster fixation were negligible. In older patients bone grafting or pin fixation were preferable, with a slight bias in favour of pin fixation in the aged.

Dr. ERIC I. LLOYD was disappointed at the absence of specific reference to late results in Professor Johannson's series of cases. It was by no means certain that an early success was permanent. In two of his own cases he had removed pins sixteen months and twelve months after operation (by which time they had ceased to have any useful function) and slipping at the site of fracture had promptly followed. The radiographs had suggested that bony union was sound, but this was evidently not the case; he felt that surgeons would soon have unpleasant surprises in certain cases they now regarded as successes. A few fractures of the neck of the femur were impacted abduction fractures, the normal angle between the head and the neck being diminished. Such cases recovered completely with nothing more than rest in bed, and provided that there was undoubted evidence of impaction operative fixation was not required. Of fifty fractures of the usual type seventeen had been operated on two or more years ago with bony union in 60 per cent., and seventeen operated on between one and two years ago showed bony union in more than 80 per cent. This improvement was probably due to improvement in technique, though it was possible that several cases now counted as successes might go wrong later.

Mr. R. WATSON JONES (Liverpool) had formerly been a strong advocate of open-pin fixation, but during the last two years had abandoned it in favour of the blind operation—not so much on the grounds of simplification of technique as on the conviction that the less the fracture site was disturbed by the surgeon the better. The greatest bogy in the treatment of this fracture was necrosis of the femoral head and the arthritic changes that inevitably followed even if union occurred. Necrosis was due to cutting off of the already precarious blood supply to the head, and this could be prevented only by the avoidance of further trauma during the manipulative reduction, by early fixation so that repair could begin as soon as possible, and by keeping clear of the fracture site when the pin was actually inserted. He agreed with Mr. Lloyd's conservative attitude toward impacted abduction fractures.

Mr. H. A. BRITTAIN (Norwich) confessed that his enthusiasm for the Smith-Petersen operation might be an expression of youthful ardour, but what method, he asked, could give comparable results in the hands of surgeons whose experience was limited to not more than fifty cases? His own method (previously described in the *Journal*) had the merit of simplicity, and had given bony union in 82.6 per cent. of his series of forty-six cases.

Mr. K. H. PRIDIE (Bristol) favoured the Hey Groves method. The correct line for insertion of the pin was determined by a guide with two spikes, which perforated the skin over the neck and head of the femur and were pushed in until they made contact with the bone. It had been said that the medial spike might injure the femoral artery, but this fear had been dispelled by a series of post-mortem investigations. He found (by injection of the femoral artery and antero-posterior radiography of the pelvis) that the vessel always lay conveniently medial to the central point of the femoral head. A pneumatic hammer was used to push in the pin, which effectively prevented separation of the neck and head when the pin was passing from the one to the other.

Mr. W. C. GISSANE believed that the operation began with the radiography of the hip. It was most important that comparable views should be obtained from start to finish, and only the surgeon could determine the correct positions for the x-ray tube and the cassette. He, too, favoured the closed method, and employed local anaesthesia, except when the pin was actually being inserted. He did not approve of interference with the compact bone at the point of entry of the pin: a stout rim of bone around the pin enabled him to bury the head under the rim and so prevent extrusion of the pin.

Mr. H. O. CLARKE (Manchester), another advocate of the closed Smith-Petersen operation, gave a detailed report

on a series of twenty cases. Two patients died within twenty-four hours of admission to hospital, the remainder being treated by operation. One died two days after operation, and post-mortem examination revealed advanced myocardial disease; the other died from uraemia three weeks after operation. There was bony union in fifteen cases and non-union in one. In conclusion, he made an eloquent plea for the early transfer of all such cases to a recognized fracture centre. Under modern conditions there was no excuse for attempting to deal with them in imperfect surroundings.

Dr. CARL SEMB (Oslo) also reported a series of 101 cases treated by Sven Johannson's method. He advocated skeletal traction to obtain correct apposition of the fragments, followed by operation at the bedside so that disturbance of the patient, and of the fracture, was reduced to a minimum.

In the afternoon cinema films illustrating some of the techniques employed were shown by Professor SVEN JOHANNSON, Mr. ERIC LLOYD, Mr. PRIDIE, and Mr. BRITTAIN.

SECTION OF OTO-RHINO-LARYNGOLOGY

Wednesday, July 21

Complications of Otitis Media

With the President of the Section, Dr. HENRY HANNA (Belfast), in the chair, a paper was read by Mr. A. A. MCCONNELL (Dublin) on the non-suppurative intracranial complications of otitis media.

Mr. McConnell divided the intracranial complications into suppurative and non-suppurative. The pathology of the former was well understood as each stage in the process had been observed post mortem, but in non-suppurative complications operative findings were often inconclusive and necropsies were rare. He divided the non-suppurative complication into encaphalitic lesions and derangement of the amount, or of the circulation, of the cerebrospinal fluid. The latter led to a rise in the general intracranial pressure. Borries and Symonds had discussed the encephalitic lesion under the terms "otogenous encephalitis" and "non-purulent encephalitis" respectively. It might be the prelude to an abscess of the brain, or at least give rise to the "symptoms of an abscess without abscess." So far as treatment was concerned the case must be treated as one of abscess until negative exploration or subsequent history proved that it was not so. Derangements of the amount of, or of the circulation of, the cerebrospinal fluid were next discussed. The first was described by Symonds as otitic hydrocephalus, using the term to mean an excess of fluid. Outstanding symptoms were intermittent headache and papilloedema. The patient might look extremely well and there were no localizing signs such as were usual in encephalitis. Of great importance was the normal fluid with no excess of protein or of cells. As there was no obstruction to circulation the excess of fluid might be removed at any point in the pathway of the cerebrospinal fluid. The second type of derangement gave rise to collections of fluid localized in the ventricles or in the cisterns of the posterior fossa. They demanded direct removal. Mr. McConnell therefore advocated, in the first type, lumbar puncture as being safe and curative. In the second type it might not be safe and was not curative. As the clinical differentiation of the two types was difficult he suggested ventricular puncture as being a safer and generally applicable procedure.

Otitis Externa

Mr. L. GRAHAM BROWN, in a paper on otitis externa, included all infections of the skin of the meatus or of the skin of the surrounding parts with which it was contiguous. He divided the varieties of lesion into otitis externa circumscripta or furuncle, otitis externa diffusa, otitis externa mycotica or otomycosis, eczematous otitis externa, and otitis externa haemorrhagica. In treatment three main principles were to be observed: (1) thorough cleansing; (2) the application of a non-irritant germicide; and (3) protection from further irritation and infection. He advocated syringing as the safest form of cleansing. The parts could be dehydrated subsequently with alcohol; afterwards he preferred ointments containing zinc. Sulphur and mercury ointments appeared to be too irritating. It was sometimes necessary to give an anaesthetic to exclude other trouble—for example, otitis media deep to the external lesion. Local treatment must not omit the surrounding parts, especially an infected scalp. General treatment included vaccine and serum therapy; manganese and stannoxyl; diet, especially in eczematous patients; light therapy and *x* rays.

Mr. J. W. KILLEN (Londonderry) advocated syringing with a weak solution of lysol. In some eczematous cases he had had much success with resinol ointment, and the general effect of a vitamin A preparation was of value. Mr. T. B. JOBSON (Guildford) agreed about cell sensitivity and advocated the use of calcium in this respect. He wished to say a word about surgical treatment. He had been brought up, as had probably others present, on the crucial incision and curetting of the furuncle. This was now considered dangerous and might spread the infection to surrounding tissues. If any incision were made it should be small and only just sufficient to allow exit of retained pus. Mr. DONALD WATSON (Bradford) divided cases into acute and chronic. He "packed" his cases of boils with aluminium acetate. Like Mr. Killen, he found the cresols useful. Ointments should have a vaseline base, the most effective being salicylic acid and sulphur. He divided chronic cases into those with middle-ear discharge and those without it. The former might need a mastoid operation. Mr. C. DE W. GIBB (Gloucester) found casts in many cases he saw, especially children. Entry of water must be prevented, although patients might think it "dirty" not to wash out the ear with soap and water. He cleaned the ears with olive oil. Re-infection probably often took place by unconscious scratching at night. Mr. DONALD WHEELER said it was most important to see the patient frequently in the early stages. He used "ilon abscess salve," and on dry exfoliative cases liquid paraffin. Mr. KENNEDY HUNTER (Belfast) wished for more information from Mr. Brown about the haemorrhagic cases with a bulla on the tympanic membrance. This often occasioned some deafness, making it difficult to exclude trouble in the middle ear. In furunculosis he advocated tight packing with 8 per cent. aluminium acetate to abort the early case. Mr. J. R. WHEELER (Belfast) recommended prontosil in streptococcal cases. Mr. F. C. W. CAPPS thought that two facts were of importance: (1) the avoidance of surgical incision; and (2) careful personal supervision, preferably in hospital or in a nursing home. An otitis externa might prove far more intractable and painful than an otitis media, and it was wrong to treat such cases as out-patients. No one had mentioned magnesium sulphate paste. He always used it on nicks in the meatus, and it not only alleviated the condition present but prevented subsequent cross-infection of the opposite wall. Ung. hyd. ox. flav. was helpful in the dry and eczematous cases, and also as after-treatment in cases of boils.

The Audiometer

Mr. R. R. WOODS (Dublin), in a paper on the audiometer in clinical otology, said that his work had been done on a Western Electric No. 2B arranged in octaves covering the band from 64 to 8192 cycles per second. The accuracy of this audiometer had never been questioned, but objections had been raised to its application in clinical otology. His paper was mainly directed to the refutation of the conclusion of the Hearing Tests Committee of the Royal Society of Medicine, published in 1933 and apparently condemning the practicability of

the audiometer in clinical practice. By an excellent series of graphs Mr. Woods showed that accurate diagnosis and therapeutic progress could be more easily measured by an audiometer than any other way.

Mr. T. A. CLARKE (Canterbury) congratulated Mr. Woods on his clear exposition of the present uses and future potentialities of the audiometer. He was interested to know if Mr. Woods had found an explanation of the discrepancy between air and bone conduction in the high tones on the monochord. As a member of the Hearing Tests Committee he would defend its attitude. It had met in 1929, and in days of rapid electrical progress its report reflected the opinions of 1929 and not of 1937. It was unfortunate that its report was not published until 1933. Now even the machine used by Mr. Woods was out of date, and he himself, who in 1929 was against the practical use of audiometery, was purchasing the latest model for private and hospital use. Mr. GRAHAM BROWN asked if the instrument was of practical clinical use. If it was they should use it; if not, they should not allow instrument makers to take diagnosis out of their control. Dr. H. C. P. SMITH thought there was an opening for team-work between the otologist, the physicist, and an experimental psychologist. Mr. JOBSON, Mr. KILLEN, Mr. WATSON, and Mrs. BEATRICE H. LYNN (Belfast) also spoke.

Mr. WOODS, in reply, said that the only practical disadvantage he knew was the time the method took. It was no short cut to diagnosis. The discrepancy with tuning-fork findings was a matter of pitch and intensity. Any tone might be heard if it is intense enough. The trouble with aids was the cumbersome nature of those which were efficient.

SECTION OF RADIOLOGY

Wednesday, July 21

Tomography

With the President of the Section, Dr. J. C. RANKIN (Belfast), in the chair, the proceedings opened with a paper by Dr. E. W. TWINING (Manchester) on tomography.

Defining tomography Dr. Twining said that it was a means of obtaining clear radiographic definition at a deep plane by blurring of superimposed shadows. This was accomplished by moving the film and the *x*-ray tube during exposure in such a way that the image of object in a selected plane should be held in the same position on the film, while objects on other planes were blurred by the movement. The speaker showed diagrams and a photograph of his apparatus. Tomography not only helped by blurring the details of superimposed structure, but was valuable because it increased contrast. As an illustration an experiment was quoted in which a thick coin was placed at a small distance from the film, and a thinner coin between it and the film. The thin coin was invisible in a normal radiograph, but a tomogram, by blurring the shadow of the thicker coin, revealed the thinner coin, whose edges were well defined because its shadow always fell on the same part of the film. Films were shown demonstrating the value of tomograms in delineating various bony structures. In the spine the tomogram was useful in blurring the superimposed rib shadows in Pott's disease with kyphosis, and in the dorsal spine heart and lung shadows were removed by this means.

There was a rich field for tomography in lung conditions, as had been shown by various workers. The main lines of investigation in the speaker's work had been the demonstration of cavities and the study of the bronchi. Tomography revealed vascular shadows much more clearly than in a normal radiograph. This made it easier to localize certain lesions, and was useful in differential diagnosis, particularly between abscess cavity and peripheral neoplasm. In pulmonary tuberculosis tomography revealed conditions which were often obscure in the normal radiograph. Dr. Twining demonstrated a large number of films of the chest to illustrate the difference between normal radiographs and tomograms.

Dr. A. E. BARCLAY (Oxford) said that the method had great possibilities, particularly in chest conditions. It might also be of great value in the pelvis. Professor JOHN BEATTIE remarked that in his experience of tomography in animals it was not possible to make sections at intervals of less than half an inch, and he found this satisfactory. German tomographic apparatus was very expensive, and he would be glad to know of a cheaper method. Dr. R. MAITLAND BEATH (Belfast) referred to the value of tomography in showing the relation between the symphysis and the sacral promontory. Dr. BARCLAY asked what was the length of exposure and the travel in the tomograms Dr. Twining had shown.

Dr. TWINING, in reply, agreed that tomography was useful in pelvic measurement. Sections at half-inch distances had proved satisfactory in the human subject. The exposure was usually two seconds, and the maximum travel in his apparatus was fourteen inches. He proposed to increase this. For bones a small travel of three to four inches was enough. In answer to a question from Dr. T. G. HARDMAN (Dublin) Dr. Twining explained his method of adjusting his apparatus for different planes by means of diagrams.

Nomogram for Radiography

Dr. A. B. MACLEAN (Glasgow) read a paper on nomogram for radiography. The nomogram was based on Rhinebort's "basic roentgenographic technique," which correlated kilovoltage to the thickness of the part of the body concerned. There were two techniques: that in which current, time, and distance were constant, and the voltage altered according to the thickness of the part; and that in which current, voltage, and distance were constant and the time varied. The data had been obtained from a series of radiographs taken through paraffin-wax phantoms. Dr. MacLean showed a slide of the nomogram, which consisted of three columns: time of exposure, thickness of tissue, and kilovoltage. A standard distance of twenty-seven inches had been used in drawing up the nomogram, but a supplementary table was available for making the necessary correction for other distances. By drawing a line on the nomogram between the kilovoltage used and the thickness, and producing the line as far as the exposure column, the necessary time of exposure was indicated (voltage-thickness technique). The time-thickness technique could also be used if desired. The nomogram had been used in connexion with fifteen machines and applied to them all. It was found that the output of all these machines was the same per milliampere. The nomogram had been devised for bone work, and it was necessary to make corrections in the time or kilovoltage for soft tissues. It had been possible by means of the nomogram to achieve a degree of standardization of technique hitherto unobtainable. Dr. MacLean showed an exposure calculation which translated the nomogram into an easily portable and simple form.

Dr. GRACE BATTEN said that it was difficult to remember so many facts, and she hoped the paper would be published. Dr. C. L. MCDONOGH (Dublin) said that he had received a copy of the nomogram from Dr. MacLean, and that it had worked with uncanny precision. Dr. F. G. GREENWOOD (Blackpool) said he had used the method for two years and had found some difficulties, such as estimating the thickness of the chest wall and in skull work. In ordinary bone work it was very reliable.

Dr. MACLEAN, in reply, said that in order to solve the problem of thickness of chest wall he classified his patients as regards their bulk and made alterations accordingly. Dr. R. E. ROBERTS (Liverpool) referred to the

difference between fat and muscle in such calculation, and doubted whether photographic effect was the same at different voltages.

Radiology in Obstetrics

Dr. C. L. McDONOGH (Dublin), in a paper on radiological diagnosis in obstetrics and gynaecology, said that by radiological means pelvimetry and size of the foetal head could be gauged without anaesthetic or pelvic examination. Diagnosis was rarely possible before the end of the twelfth week of pregnancy. Introduction of gas into the peritoneum to increase contrast was dangerous and unnecessary, but introduction of gas into the colon was often helpful. Radiography was valuable in the diagnosis of hydatidiform mole and of extra-uterine pregnancy. In suspected multiple pregnancy care should be taken to include the whole abdomen in the radiographic field. Radiographic demonstrations of foetal deformity at five to six months might avoid much suffering. In cases of foetal death maceration could be shown early in pregnancy, and, later, Spalding's sign. Injection of opaque material into the uterus before radiological investigation of suspected placenta praevia was dangerous, but uroselectan in the bladder was sometimes helpful. The value of *x*-ray pelvimetry and foetal cephalometry was not yet fully recognized by obstetricians. In the last three groups of Tweedy's classification, where the true conjugate was less than three and a quarter inches, it was useless to proceed to cephalometry, because Caesarean section was inevitable. In Groups 1 and 2 cephalometry was of great value after the thirty-second week because the biparietel diameter increased 0.1 inch per week after that time. If the pelvic measurements were known by pelvimetry the combined information was invaluable. He was certain that eventually every pregnant woman would be subjected to radiographic pelvimetry when first seen.

Dr. R. S. MACHARDY (Portsmouth) said that many obstetricians thought that the taking of radiographs was bad for pregnant women. He had recently investigated the dose received, and had found it so low as to be negligible. Dr. J. F. BRAILSFORD (Birmingham) said that it was a good sign that many wives of medical men were now having radiographic pelvimetry done. Dr. R. E. ROBERTS (Liverpool) said that change of position of the foetus might be very rapid, and caution was therefore needed. Amniography sometimes caused abortion, but not foetal injury. In cephalography there were two factors which could not be determined—amount of movement of the skull bones and force of uterine contraction during labour. A lateral view, including the lumbar region, gave a better idea of the relation of the symphysis to the pelvic brim.

Distance Mass Radiation

Mr. STANFORD CADE demonstrated a cinematograph film illustrating the evolution of distance mass radiation at the Westminster Hospital. The film included details of six mass units used since 1929, and showed their construction and application to patients. The latest unit contained 6 grammes. Accuracy of application, freedom from skin damage, avoidance of effect on general health, and results—particularly in pharyngeal and laryngeal cases—had all become better as the units had been evolved. It was now possible to deliver 9,000 *r* to a pharyngeal tumour at the rate of 9 to 10 *r* per minute without changes in the skin beyond erythema and without blood changes. Radium was becoming cheaper, and this method was therefore more economical than before.

Replying to questions, Mr. CADE said that there had formerly been some cases of delayed cartilage necrosis after treatment of the larynx and pharynx, but this had not occurred for five years. The response of the tumour to treatment was the only criterion, and no reliance was placed on skin erythema. Telangiectasis often occurred in the skin at a later date.

SECTION OF HYGIENE AND PUBLIC HEALTH

Wednesday, July 21

Enteric Fever

With Professor W. J. WILSON, President of the Section, in the chair, the discussion on enteric fever was opened by Dr. JOHN RITCHIE, whose paper was published in last week's *Journal* (p. 160). The subsequent discussion was, in the main, concerned with two aspects of the subject—namely, the practical control and the clinical manifestations and clinical treatment of the enterica.

Dr. S. WATSON SMITH (Bournemouth) ably summarized the clinical signs, methods of differential diagnosis, and the treatment of the disease. His paper was based chiefly upon observations made during the last year's outbreak in the adjacent boroughs of Poole, Bournemouth, and Christchurch. He called attention to the importance of the appearance of enteritis in an area. Such an area might soon be visited by an epidemic of enteric. He emphasized the resemblance of the early cases to acute appendicitis, and stressed the diagnostic importance of Lesieur's sign. In treatment, careful and adequate diet, the prevention of salt depletion, hygiene of the mouth and nose, attention to the fluid balance, were all critically discussed. Serum therapy had given equivocal results in his hands. He believed that serum treatment was the ideal, but that the suitable serum had yet to be found and made readily available. Repeated blood transfusion, perhaps immunotransfusion when possible, was of greatest benefit in haemorrhage or toxaemia, or in a prolonged or relapsing attack of typhoid. Dr. Watson Smith ended with a word on typhoid death, usually believed to result from the myocardium "petering out" from poisoning, but which seemed to him to be due to neuro-circulatory failure, in its turn produced by poisoning of the bulbar centres, similar in many respects to that which caused death in acute pneumonia.

Mr. A. FELIX described recent work upon the antigenic components of typhoid bacilli. He said that two antigenic elements had been shown to be present in therapeutically active sera. These were the O and the Vi elements. The Vi element was of great importance, was extremely labile, and was absent from commercial sera. To be active a serum must contain both of these elements. It was the Vi element which protected against the living organisms.

Dr. S. H. COOKSON (Bournemouth) gave an account of his experiences with the use of Felix serum. He had treated seventy-three patients with it, and believed that the serum was well worth using in all serious cases. He did not employ it as a routine. Lieut.-Colonel C. H. H. HAROLD, discussing water-borne typhoid fever, said that to-day immunity from typhoid depended in large part upon the sanitary methods taken to reduce the number of carriers. In modern life the danger had definitely shifted towards the small rural areas. He believed that the use of the lithium method to prove a connexion between a well and a stream was especially valuable. Dr. C. J. McSWEENEY (Dublin) supported from his further experience the conclusion which he had already published, that the Felix serum treatment was a remedy of real value. Dr. A. GARDNER ROBB (Belfast) remarked that the abolition of 72,000 privy middens in Belfast many years ago had been followed by a remarkable fall in the case incidence of typhoid. But there was a corresponding fall all over the rest of Ulster at that time. Dr. R. J. MAULE HORNE (Poole) made an especial plea for a co-ordinated policy between the local Divisions of the B.M.A. and the local authorities regarding the hospitalization of patients. He believed that hospitalization was necessary in the interests both of the patients and of the community. Dr. GEORGE CHESNEY (Poole) paid a special tribute to the value of Wilson's medium. He described in an interesting fashion the possible sources of infection in the Poole epidemic. Cows

could have infected the milk directly from their teats after walking in the flooded waters of the infected stream. Or it was possible that the community was infected through a cow which died of malignant abortion on August 1. Or, finally, there was the possibility that cows which had become infected were excreting living typhoid bacilli in their stools. All of these points demanded careful inquiry and research. Dr. J. D. ROLLESTON remarked that it was interesting to observe that no clinician had advocated the use of alcohol in treatment.

An interesting paper was presented by Dr. F. MAY ERSKINE (Belfast) on the incidence of goitre in school children in Ulster. The incidence of these cases was related to water supply, to economic position, and to the nearness of the homes to the sea. A higher incidence was universally observed among girls than among boys.

SECTION OF TUBERCULOSIS

Wednesday, July 21

Tuberculosis in Hospital Workers

With the President, Dr. JOHN R. GILLESPIE (Belfast), in the chair, Dr. PETER W. EDWARDS (Market Drayton) opened a discussion on tuberculosis in hospital workers.

Dr. Edwards pointed out that facts concerning the incidence of this disease in hospital workers were still scanty. At the end of this year, however, the Registrar-General would provide the mortality figures among nurses and thus enable comparison to be made with women in other occupations. Investigations had been carried out abroad, and Dr. Edwards referred to those published in Scandinavian countries and in the United States. The incidence had been found higher in nurses than in the general population, and it was generally agreed that it was higher in nurses working in general hospitals than in those working in sanatoria. He thought, too, that far too many "residents" and students in their final years developed the disease. It was insufficiently realized that the personnel of tuberculosis institutions were in the position of true contacts. Prophylactic precautions should therefore be taken by them as by other contacts. The danger of spitting was still inadequately realized. In general hospitals there was much danger from patients, admitted for other conditions, who might be suffering also from pulmonary tuberculosis. Hence every patient should on admission have his sputum, if any, examined for tubercle bacilli, and his chest *x*-rayed. The speaker then dealt in greater detail with the danger in nurses. He deplored the conditions under which they still worked in many institutions. Even a forty-eight hours week was too strenuous for girls during their training, when they also worked for examinations. Once "qualified," they should have the same freedom as women in other occupations. At the sanatorium of which he was in charge the trained staff lived in a hostel outside the institution run entirely by themselves. He stressed the personal hygienic precautions that should be taken during work, particularly the importance of change of clothing immediately on leaving the wards. Tuberculosis in hospital workers should be treated as an industrial disease. Most medical superintendents were in favour of employing staff who had suffered from the disease. Dr. Edwards thought this might prove a better and cheaper solution of an urgent problem than many employment schemes and settlements.

Dr. J. WATT (Godalming) emphasized the possible danger of creating unnecessary alarm in the public mind and of fostering an impression that nursing was a dangerous occupation. He discussed the reasons why tuberculosis should be more common in nurses working in general hospitals than in those working in tuberculosis institutions. There was, however, a real danger of infection in the latter. This danger should be minimized by the teaching and practice of proper hygienic and prophylactic precautions. The general resistance should also be raised by good feeding and avoidance of physical and mental strain. He, like Dr. Edwards before him, thought that at the present time it was not justifiable to exclude tuberculin-negative girls from admission to the nursing profession.

Dr. ESTHER CARLING (*Peppard Common*) stressed the dangers of infection, and particularly of overstrain, in nurses. It was the duty of the medical profession to see that the unfavourable conditions under which girls now train should be altered. She suggested that the matter be taken up by the British Medical Association, working perhaps in conjunction with the Prophit Tuberculosis Trustees and the Joint Tuberculosis Council.

Dr. MADGE MACKLIN (Western Ontario) described conditions in Canada and the results of a questionary which she had sent out. Her remarks gave the impression that Canada was ahead of England in the care taken in choosing girls for training and in the conditions under which nurses worked, and were looked after if they broke down.

Dr. R. MARSHALL (Belfast), speaking from the viewpoint of the general physician, described the experience in Northern Ireland. His investigation, the results of which he gave in full, were based on (1) inquiries from doctors in charge of sick nurses or from matrons of the principal hospitals, and (2) the case-records since 1922 of the Belfast Municipal Sanatorium and the Forster Green Hospital, Belfast. It was certain that almost every nurse who had been diagnosed as suffering from pulmonary tuberculosis in the hospitals of Belfast had been sent to one of these institutions. He concluded that a girl beginning work in a hospital was exposed to a certain risk of tuberculosis. He indicated the precautions that should be taken.

Early Diagnosis of Pulmonary Tuberculosis

The chair was then taken by Mr. J. E. H. ROBERTS, and Dr. GEOFFREY MARSHALL opened the discussion by referring to the difficult position of the general practitioner in connexion with this "troublesome problem." He stressed the fact that a physical examination alone was most unreliable in detecting the early lesions of pulmonary tuberculosis. More fruitful results were, however, obtained when a careful inquiry was made into the past history of the patient, particularly with reference to contact and when pains were taken to elicit symptoms. Such symptoms required careful assessment, since in the earlier stages of the disease they were those of toxaemia and therefore non-specific. One symptom, in the absence of all other evidence, must be considered diagnostic—a free haemoptysis "out of the blue." Dr. Marshall, discussing diagnostic measures, referred to the method of culture on Loewenstein's medium and radiological examination of the chest: "the wise physician will view and discuss these appearances with the radiologist; the wise radiologist will leave the responsibility of diagnosis to the physician." The third important investigation was the diurnal record of the temperature. He finally drew attention to the observation of Wingfield and Macpherson that radiological examination disclosed that about one in every hundred apparently healthy adolescents in factories and workshops had tuberculous lesions in the lungs. He would like to press for the routine periodic *x*-ray examination of nurses, students, and young girls in factories.

Dr. L. S. T. BURRELL stated that what was needed was some method which would indicate the dividing line between mere infection and actual disease. Pulmonary tuberculosis showed itself as an acute, a subacute, or a chronic disease. Examination of the sputum was always of the greatest importance. Absence of tubercle bacilli in sputum that was definitely mucopurulent was highly significant. He strongly recommended the laryngeal test when sputum could not otherwise be obtained for examination. Dr. M. F. O'HEA (Dublin) stressed the impor-

tance of co-operation between the radiologist and physician in interpreting radiographical appearances. The radiologist should always be provided with a full history. It was essential to be familiar with the limits of what constituted a normal film. A period of observation followed by further *x*-ray examination should be practised more often. He showed slides illustrating the radiological diagnosis of "early" lesions in the lung. Dr. J. A. L. JOHNSTON (Londonderry) said that the increase in *x*-ray examinations had exposed the imperfection of the methods of examining the sputum generally used. Many specimens sent for examination were unsatisfactory for this purpose. The physician should be responsible for the collection of suitable specimens. He praised highly the laryngeal mirror test (or merely the use of a slide in a similar manner). The combined gasolene concentration method (as described by Peter Edwards and his co-workers) and culture on a modified Loewenstein medium gave the best results. He thought the subcutaneous tuberculin test dangerous.

The PRESIDENT spoke highly of the value of the subcutaneous tuberculin test. He had carried it out in over a thousand patients and had never seen any disastrous result. Dr. M. ASTON KEY (Southsea) asked how much value should be placed on the pulse rate and on the finding of a small vertical heart in the skiagram. Dr. ANDREW J. MORLAND described a case in which he had found the subcutaneous tuberculin test useful. Mr. J. E. H. ROBERTS stressed the point that other conditions apart from pulmonary tuberculosis might cause a sudden large haemoptysis—for instance, congenital cysts of the lung.

Local News

SCOTLAND

Congress of Medical Women

The fourth congress of the Medical Women's International Association met in Edinburgh from July 13 to 17, and was attended by some 300 delegates from twenty-three countries. This association was inaugurated in New York in 1909, and has held congresses in London, Paris, and Stockholm. The chief scientific subjects discussed at Edinburgh were cancer in women and its prevention, and maternal mortality and abortion, and the meetings were held in the medical buildings of the University. At the inaugural meeting in the McEwan Hall, when Dr. Alma Sundquist of Sweden presided, Sir Thomas Holland, vice-chancellor of the University, in welcoming the delegates, said that they met under a very different mental and spiritual condition from that which Sophia Jex-Blake found sixty-nine years ago. Edinburgh University's association with the development of medical education for women had begun in 1868, when Sophia Jex-Blake tried to gain admission to the University. She and a few kindred spirits were admitted to some classes and not to others, and distinguished themselves in those examinations for which they were permitted to sit, but failed to get the formal recognition necessary to qualify. Four years later in the Court of Appeal the judges decided by a majority that Edinburgh University had exceeded its powers in framing regulations for the admission of women medical undergraduates. Edinburgh thus lost a fine opportunity through the strange ways of the law, and not till twenty years later did the University, under the clearer powers provided by the Act of 1889, frame regulations for the admission of women to medical graduation. Until 1916 it acted purely as an examining body for women students, who received their training outside its walls; this had been partly due to lack of sufficient accommodation. In the last twenty years nearly 600 women medical students had qualified at Edinburgh. Dr. Sundquist, in her inaugural address, said that the association had been founded so that women doctors in all parts of the world might benefit from each other's experience, knowledge, and views. Health was now progressing, the duration of life was increasing, and the death rate was decreasing. Cancer was an important cause of death in women, and large groups of women hesitated, often for too long, before consulting male doctors. Maternal mortality was largely a question of health education, and could in many cases be prevented by suitable advice; women doctors should therefore interest themselves especially in this educational work. At the meeting on July 15 Dr. Simone Laborde, from the Cancer Institute, Paris, said that almost all countries had adopted energetic anti-cancer campaigns. The mortality from cancer had risen in every country during the past ten years, and in Switzerland the incidence of the disease was higher than in any country in Europe. The increase in the death rate from cancer was not due merely to increased longevity. There was no exact evidence that heredity played any important part in its production, but disorders of certain glands with internal secretions might be factors. Special instruction of medical students and doctors was of greater importance at the present time than widespread propaganda, but Toulouse University was the only one which at present had a special chair of "Cancerology." Dr. Elizabeth Hurdon of the Marie Curie Hospital, London, said that the problem of the prevention and cure of cancer was one of the most pressing of our time. In no field of medical research had so much been discovered within recent years. New methods of diagnosis and further advances in treatment were being developed in every part of the world, and in most universities workers were investigating some aspect of the cancer problem. In Great Britain cancer of the breast was the most common form in women, and earlier diagnosis was a matter of vital importance in treatment. There had, however, in the last two decades been a remarkable decrease (21 per cent.) in cancer of the uterus, but theories to account for this change were still speculative. It was known that pure chemical substances applied to the skin could produce cancer in animals, and that cancer of the breast and uterus could be produced by injection of oestrogenic hormones. These discoveries seemed to offer convincing evidence that hormone imbalance was an important contributory factor in the cause of this disease. It was difficult to assess the results of the propaganda regarding early treatment, which had been carried on for some years, and it did not appear, in Great Britain at least, that there had been any improvement in the stage of development at which patients presented themselves for treatment.

A discussion on maternal mortality and abortion was opened on July 16 by Professor Bertha van Hoosen of Loyola University, U.S.A., who said that maternal mortality during the period 1929–34 had increased in Denmark from 32 to 39 per 10,000 of the population, and in England from 43 to 46. In the Netherlands it had decreased from 34 to 32, in Norway from 36 to 29, and in the United States from 70 to 59. In Japan, where high-school girls were taught about maternity, the figures stood unchanged at 28. Abortion was considered a crime in all the English-speaking countries, and in Holland, Sweden, Denmark, New Zealand, and Japan the women were punished as well as the abortionist by imprisonment. In the United States the abortionist was punishable in all States, but the women in Washington only. There were 681,600 abortions annually in the United States, with a death rate of 1.2 per cent., and these occurred chiefly among married women who had had several children. In the subsequent discussion Dr. Rhoda H. B. Adamson (Leeds) said that the question of the general condition of the child-bearing women who died did not seem yet to have been raised. A considerable proportion of mothers who died were women whose health should not have allowed them to have children; these women did not die of child-bearing, which was only the terminal condition.

Dr. Josephine Baker (U.S.A.) said that the high maternal mortality rate in the United States was mainly due to the fact that the midwife was ignored. At the closing meeting on July 17 Miss Louisa Martindale (London) was elected president for the next congress, which is to be held in Budapest in three years. It was decided to continue the discussion on maternal mortality and also to discuss nutrition and venereal disease.

Edinburgh Medical Graduation

At the Edinburgh graduation ceremonial on July 21 Principal Sir Thomas Holland conferred the M.D. degree upon twelve candidates and the degrees of M.B., Ch.B. upon 151 graduands. The honorary degree of LL.D. was conferred upon Dr. Edwin Bramwell, formerly professor of clinical medicine, and in presenting him, Professor H. H. Monteath said that he had inherited from his father, the late Sir Byrom Bramwell, an aptitude for skilful diagnosis and inspiring teaching. He had made peculiarly his own the subjects of encephalitis lethargica with its sequelae and relations, and the different types of myopathy. During his tenure of the chair of clinical medicine and as lecturer on neurology in the University his faculty for clinical exposition had been greatly appreciated, and the esteem and respect in which he was held by his professional brethren had been demonstrated by his election as President of the Royal College of Physicians of Edinburgh. Professor Sydney Smith, in an address on the necessities for change in the medical course, said the study of medicine had been the target for much criticism, and members of the medical profession had been the most ruthless critics. It had been said that medical education was devoid of cultural value, but the aim of any system of education was to build up the mind and character to foster the ability to think, and to cultivate the faculty of appreciation and discrimination. There could be no doubt that for these objects the study of medicine offered as ample a field for thought as any other. There was among the generation of new practitioners an impassioned revolt against the dead hand of the past. Those whom he addressed to-day formed the first group of "war babies" to graduate, and, brought into a world altered out of all recognition, growing up in a spirit of revolt and dissatisfaction, and lacking much of parental control, they had tended to lose faith. The effect could be seen in the modern attempt to find new outlets for intellectual and emotional stress, of which some were intensely interesting, some frankly pathological. This revolt was impossible in connexion with medicine or science, for the course of study did not consist of a chance collection of subjects studied haphazard, but of a carefully considered system built up from a solid foundation. There had been enormous advances in the physical sciences, and a steady but less spectacular progress in the biological sciences and medicine. As a measure of medical effort it might be observed that the mean expectation of life had lengthened by about ten years, the death rate had fallen by 33 per cent., the infantile mortality by 60 per cent., and the death rate from tuberculosis by 64 per cent. Deaths from cholera, plague, malaria, and typhus had practically disappeared from this country, and in the realm of surgery there had been similar advances. All the advances in medicine had had to be incorporated into the curriculum of study without adding to the time taken. This had been done, however, only by very careful adjustment, and naturally there had been difficulties, which continued to grow. The time had now come when an increase in the period of study must occur. The Senatus of Edinburgh University was now deliberating the extension of the course to five full years after the study of the fundamental sciences—that was to say, five years from beginning the study of anatomy and physiology. It was also considering the improvement of the standard of education by endeavouring to keep students at school until the age of 18. This implied the recognition of courses of instruction in chemistry and physics taken at school, and it would allow the study of general scientific subjects to be continued slowly and carefully over a period of years, placing them as subjects of equal cultural importance with others of general education. The advances in human physiology and biochemistry required for efficient teaching a considerable extension in space, equipment, and staff, which must be undertaken by the University in the near future. Many other changes were under consideration, and it was hoped that within a reasonable time it might be possible to provide for students a period of living-in at hospital, where they would be in regular attendance upon their own patients. It was hoped, too, that the dispensary system, which was a unique feature of the Edinburgh school, might be extended so that every student might be brought into personal contact with patients in their own homes, and thus become familiar with the operation of public services for the maintenance of health. A considerable amount of money would be required to give effect to this programme—about £500,000 to do all they wanted in the immediate future.

Glasgow Public Health Services

The Glasgow Public Health Department has issued an attractive pamphlet on "Nursing as a Career for Girls." It sets out carefully the details of training, registration, and conditions of service, as well as the opportunities open to a registered nurse according to her attainments and preferences—private nursing, hospital work with a view to promotion to responsible posts, specialization in such a subject as radiology, the task of nurse-tutor, the nursing services of the Army, Navy, and Air Force, district nursing (a sphere of steadily increasing importance), and municipal midwifery. Stress is laid on the increasing amenities of a nurse's life, the provision in hospitals for recreation, sport, and fellowship, the better adjustment of off-duty times, and, not least, a superannuated retirement. It is even suggested that the training for nursing is advantageous even although it is not intended to adopt the profession as a permanent career, and that nursing is a useful preparation for marriage and motherhood. From first to last there is no reference to Glasgow, but a leaflet is inserted setting out the fourteen hospitals under the administration of Glasgow Corporation and the scope of nursing training which they offer. The second of a series of combined clinics has just been opened by the Glasgow Corporation at Gorbals to serve an area of the city to the south of the Clyde. The building affords accommodation for maternity and child welfare services, education health services, dental and tuberculosis clinics, and a clinic for outdoor medical services in public assistance cases. The outdoor medical services are said to be particularly busy in this area, and four medical consulting rooms have been provided for this purpose. The maternity and child welfare clinic is designed after the most modern principles with a demonstration room for the teaching of mothercraft, a lecture room, and an ante-natal centre. The dental clinic consists of two dental surgeries equipped with up-to-date apparatus. The education health services are given a whole floor, with consulting rooms for general and special examinations, and an orthopaedic department. There is also a small clinic for the treatment of trachoma, a disease which in Glasgow is largely confined to the Gorbals area. The clinic is so designed that the different sections can function separately without interfering with each other. Almost every service has its own special entrance.

Edinburgh Dental Hospital

At the prize-giving of the Edinburgh Dental Hospital and School Lord Salvesen commended to the public an appeal which is now being made for £50,000 to extend the hospital and school. He said that dentistry was one of the few professions which was not likely to be overcrowded in the immediate future, especially if the scheme providing for the periodic examination of the teeth of all school children by a skilled dentist should be carried out.

The Edinburgh school had progressed enormously, and the municipality ought to recognize that it was a source of considerable income to the town as a whole and therefore give it support. It was the largest school of the kind in Scotland, and it had little income from outside sources, depending almost entirely upon the registration fees of the students and gifts which patients in the hospital might make. Lord Salvesen spoke of the great progress in dentistry during his own lifetime. It was of great advantage to health, he said, that people now went to a skilled dentist much earlier, for many diseases which had their origin in decayed teeth could be averted at an early stage but might be difficult to cure later. Poverty was now no excuse for want of dental attention. Mr. A. C. W. Hutchinson, dean of the School, said that necessitous patients came to the dental hospital from all over the south and east of Scotland, and the accommodation was quite inadequate. The governors had accordingly decided that the time had come when the old buildings comprising the back part of the hospital should be pulled down and a modern building erected in their place. The cost had been estimated at over £50,000, and for the greater part of this sum it would be necessary to rely on the generosity of the public. The number of students attending the hospital was now 257, of whom fifty-one were taking a medical in addition to a dental qualification.

ENGLAND AND WALES

Health of London School Children

The report of the School Medical Officer of the London County Council for the year 1936 (P. S. King and Son, Ltd., 14, Great Smith Street, Westminster, S.W.1, price 1s. 6d.) marks continued progress in the state of health of London children. In the last two or three years a new wave of interest and a fresh urge with regard to the children's health have been manifested—anxious concern having been shown for the children's nutritional well-being, for the progress of physical culture, and for improvement in environmental conditions both in and out of school. Considerable progress was made during 1936 in the Council's programme for the improvement and reconditioning of school buildings and equipment, and with schemes for the acquisition of playing fields. Reference is also made in the report to other amenities, such as gymnasia completely equipped and provided with changing rooms supplied with shower-baths, which are being introduced in schools. Close watch continues to be kept on the state of the nutrition of the children. At routine medical examinations of 184,733 children in their age groups a clinical assessment of the state of nutrition was made by the school doctors, assisted by continuous growth charts made by the school nurses, which showed that in 94.01 per cent. of the cases the nutritional state was satisfactory. Of the remaining 5.99 per cent. (comprising 11,057 children whose nutritional state was not wholly satisfactory) only 122 (0.07 per cent.) were found to be suffering from serious malnutrition. In many respects the physical condition of the children was found to be better than ever recorded before, notably in respect of cleanliness, discharging ears, and anaemia. The progress of the nutrition centres established in May, 1935, is recorded, and special attention is directed to this phase of school medical work in London. At these centres patient investigation is undertaken of children who are found by observation in the schools not to be thriving normally. Reference is made to the dramatic results obtained by sending the children to residential open-air schools for a few weeks. The progress of the work of caring for the maladjusted or difficult child is detailed under the heading of "Child Guidance." An account is given of the provision of nursery schools and the care of the infants. Nineteen nursery schools in London are now provided or aided by the Council.

Middlesex Hospital Medical School

At the annual prize-giving ceremony of the Middlesex Hospital Medical School Prince Arthur of Connaught, chairman of the hospital and medical school, presided, and Lord Dawson of Penn presented the prizes and medals to students and nurses. In the course of the proceedings the dean, Dr. H. E. A. Boldero, announced that Mr. Edward Meyerstein had presented to the school a new athletic ground at Chislehurst. Lord Dawson said that this gift would enable the students not only to enjoy recreation but to put themselves in the forefront of a fitter youth. No one needed to be fit more than did doctors and nurses. Medicine demanded the hardest work and gave the fullest life of any calling in the world. Their minds could never be dull in medicine, because they lived in a land of knowledge in which they were always trying to add something from the uncharted land all round. The ancillary services, of which the exponents in the Middlesex Hospital Medical School were outstanding in repute, were an invaluable aid, but they must be careful to hold the balance between those services and clinical medicine. The dean also reported that the medical school had received from an anonymous donor a sum to create a "Rudyard Kipling Fund" for helping students or recently qualified Middlesex men who might otherwise have to abandon a medical career. Dr. George E. Beaumont, physician to the hospital, delivered the introductory address, the title being "The Breath of Life."

Bournemouth's Sanatorium Hospital in the New Forest

Bournemouth recently acquired the private institution at Linford in the New Forest which had been carried on for a number of years by Dr. A. de W. Snowden. The corporation's plans provide for the erection on the site, which extends to 125 acres, of a modern well-equipped sanatorium hospital to accommodate at the beginning 100 or 120 beds. For the present the existing provision for about thirty patients is being utilized, the first patients having been admitted on May 1 last. When completed the new institution will afford accommodation and treatment for all types of cases—early, intermediate, and advanced. Linford is two miles from Ringwood off the Romsey Road, and fourteen miles from the Square, Bournemouth. The sanatorium will thus be situated in some of the loveliest country in the south of England, and its position on a slope facing south-east with protection from the north-east and south-west will make it ideal summer and winter for the purpose for which it is intended.

South-Eastern Regional Committee on the Deaf-Blind

The South-Eastern Regional Committee on the Deaf-Blind publishes a report of the preliminary survey undertaken during 1936 of the problem presented by the deaf-blind in London and the South-Eastern Counties. The proportion of blind persons in this area who are also deaf is stated to be approximately 6 per cent., representing a total of roughly 1,110 deaf-blind persons. The grey existence of these doubly afflicted people, whose lives are necessarily painfully isolated, can be lightened by friendly visitors of the right type, especially those with some knowledge of the psychology of the deaf, or, preferably, of the deaf-blind. For such visitors extreme patience and a capacity for listening are the most desirable qualities. The report also points out the need for correlating the functions of whole-time, part-time, and voluntary workers and the work of general administration. The desirability of the careful examination of the deaf-blind by aural specialists is also stressed, followed by a thorough trial of types of aids to hearing. It is further suggested that cases of defective hearing among the blind should be systematically examined as early as possible with a view to preventing, or at least delaying, the onset of more advanced deafness. Copies of the report are obtainable from the joint secretaries at 66, Victoria Street, S.W.1, and 96, Bramfield Road, S.W.11

Correspondence

The Abuse of Caesarean Section

SIR,—After an experience of examining during many years I am appalled by the increasing tendency for students to answer any question on complicated labour by the simple formula "Do a Caesarean section." Recently a question on a transverse lie with a prolapsed arm was answered by many of the candidates in the same way, some emphasizing that this should only be done if the uterus was in tonic contraction and version could not be carried out.

Now if Caesarean section was a really difficult operation like Wertheim's hysterectomy, I should not be worried, knowing that it would not be attempted; but it is the simplicity of the Caesarean operation that makes it so dangerous. That there are thousands of unnecessary Caesareans performed is serious enough in itself since it raises the risk of death to the patient from 4 per 1,000 to 1 per cent., but when it is carried out as a last resource the risk to the mother is appalling. We teachers of midwifery must realize our responsibility in discussing Caesarean section with students.—I am, etc.,

London, W.1, July 23. MALCOLM DONALDSON.

Anaesthesia in General Practice

SIR,—I was interested to read Dr. Helen Lukis's article on the choice of anaesthetic in general practice in the *Journal* of July 17 (p. 126). I have been in general practice for nearly fifteen years, and I have given altogether 8,900 anaesthetics, of which rather more than 1,000 were administered before I qualified. I should like to make a few observations on the subject. First, with regard to avertin, I have found this drug to be ideal as a pre-anaesthetic medication when it is not given in doses sufficient to produce surgical anaesthesia, and I think Dr. Lukis has magnified the disadvantages attending its use. May I take these seriatim from her article?

In the first place, I think anaesthetists are now generally agreed that avertin should be used only as a pre-anaesthetic drug, and that when used in this way it is usually safe, except in cases in which it is obviously contraindicated. In the second place, the 500 c.cm. and 10 c.cm. measuring cylinders, glass flask, and thermometer can all be kept in an ordinary cupboard or on a shelf in a dispensary, and with care they are not more breakable than other glass apparatus. Thirdly, the dosage table provided by Bayer and Co. is perfectly simple and reliable, since it gives the quantity of distilled water and avertin fluid required for any given weight.

I always make up the solution at home at any convenient time within two hours of its intended administration. This time limit was given to me by a very well-known London anaesthetist, who was one of the first to use the drug in this country, and who has used it extensively since its introduction. It takes me about ten minutes to make it up, put it in a vacuum flask, and put away the apparatus. I will admit that until I was familiar with the routine I took a full twenty minutes. If the patient is a child I then take the flask to the nursing home, and leave it for administration by the nurse half an hour before the time of operation. Any recently qualified nurse is familiar with the drug, and even if she is not it is a very simple matter to run about 225 c.cm. of fluid from a vacuum flask into the rectum by means of a No. 10 or No. 12 catheter, a tube, and a funnel. If the patient is an adult I see him first and give it myself, so that he does know that I have in fact been present. This would be particularly desirable just now in case the patient had lately read Dr. Cronin's latest novel.

Lastly, with an ordinary Centigrade thermometer in a rubber stopper in the flask used for heating the water it is quite simple to ensure heating to the proper temperature; and in case this is forgotten it is noted on the dosage table already mentioned. I completely fail to see that avertin is a "very dangerous weapon in the hands of the family doctor" provided that a little trouble is taken in becoming familiar with the necessary procedures.

Dr. Lukis again, I think, is hardly fair to gas and oxygen, which, as everyone agrees, is by far the safest inhalation anaesthetic we possess. With two fifty-gallon cylinders of nitrous oxide and an oxygen cylinder there is ample material for at least two long major operations, especially if avertin has been given first; and it is possible nowadays to get really portable apparatus, such as a "Boyle's bottles" unit with a sight-feed bottle instead of flowmeters. This is not prohibitive in price nor difficult to keep in good working order. Admittedly, the whole apparatus is less portable than a bag containing a mask, a bottle of chloroform, and a bottle of ether, but the extra time and trouble taken are well worth while in avoiding the post-anaesthetic effects of chloroform and ether.

Another point to bear in mind is that in these enlightened times, when the medical profession is unfortunately not enjoying a "good press," the average intelligent layman knows almost as much about recent advances in medical knowledge as we do ourselves; and when he reads in his morning paper a glowing account of some wonderful drug or appliance which makes anaesthesia pleasant and easy, it behoves us, as family doctors, to be conversant with it; and, moreover, he will certainly expect us to be so! I find that during the last year or two an increasing number of patients are actually asking to have avertin given to them if they have to undergo an operation.—I am, etc.,

Coulsdon, Surrey, July 23. R. B. P. LANSDOWN, M.B., B.Ch.

Hermaphroditism

SIR,—In the light of Mr. H. Chapple's recent article on hermaphroditism (*Journal*, April 17, p. 802), a case which came under my care at the Royal Hospital, Richmond, some years ago might be of interest.

A woman, aged about 32, was sent to me with a diagnosis of "imperfect vagina." She was well developed, of average height and with normal breasts. Moreover, she was anxious to have a child, although she had never menstruated nor experienced sexual desire. On examination the external genitals were found to be normal, the vagina being about three inches long, but no cervix or uterus could be felt. I communicated with the patient's doctor, and left the matter in his hands. About four weeks later the woman was admitted to the hospital suffering from appendicitis. In the course of the operation the following extraordinary condition was made manifest.

The uterine body was represented in the mid-line by a small round nodule one-third of an inch in diameter. From either side of this structure two solid, rounded, elongated bands of tissue, looking like uterine muscle, stretched out round the pelvic brim. These bands gradually increased in diameter to about one and a quarter inches at the distal end. Fastened on to each end was a large glistening white structure which I took for unusually large ovaries. Along the outer side of each of these was a minute tubule, ending in two or three tiny strands of fimbriae of the Fallopian tube. There was

attached to each a small mobile cyst of Morgagni. The round ligaments were three-eighths of an inch in diameter continuous with the bifurcated uterine bodies and passing to each internal abdominal ring.

It appeared as if a bicornuate or didelphys uterus had been intended by Nature. Pathological examination showed that the elongated structures were composed of uterine muscle, both white bodies were normal testicles, and the tubules were vestigial Fallopian tubes without cilia.—I am, etc.,

Richmond, Surrey, July 24. JOHN W. HEEKES.

Tests for Renal Function

SIR,—I read Dr. C. S. D. Don's article on tests for renal function (*Journal*, July 10, p. 54) and his conclusions with interest. Dr. Don suggests that the different methods in use may test different renal functions, and in part I believe this to be true. During the last two and a half years I have been engaged in an investigation of the renal state in regard to the disorders of pregnancy and the puerperium, using both the urea clearance test and the older "concentration factor" test. I have used this older method because I am convinced of its value in the assessment of renal damage when the later test alone will fail to find it on account of an existing compensatory diuresis.

In a series of about seventy normal pregnant women the concentration factor has always been the normal 50 or more under standard conditions, the clearance well over 70 per cent. I have therefore assumed that in cases of pregnancy toxaemia of the various types a low concentration factor has indicated renal damage—according to the established view that one of the first signs of renal damage is impairment of this concentrating power—even when the clearance has been normal or over. This accords well with the known flexibility of renal function as expressed, for example, by Fishberg: "The factor of safety of the kidney is so great, its compensatory mechanisms of such great moment, that these changes [disturbances of renal function] are often far from obvious. I have come to believe that the concentration factor, though merely a test of the concentrating function of the kidney, is of value in indicating existing damage, and that the urea clearance test, a test of nitrogenous excretion, is of particular value in estimating the degree of compensation present.—I am, etc.,

Leeds Maternity Hospital, July 24. NORMAN LISSIMORE.

When to Operate in Appendicitis

SIR,—Mr. R. J. McNeill Love's statement that a circumscribed swelling in the right iliac fossa in association with acute appendicitis is an abscess (*Journal*, July 24, p. 184) requires some qualification, particularly as it is a criterion of operability to the exponents of the Ochsner-Sherren treatment; in some cases that I have operated on the "circumscribed swelling" palpated before operation has proved to be either a mass of inflamed omentum or an indurated caecum. It has not been my experience that in three months after the acute attack has subsided "freedom from adhesions is remarkable"; in those cases in which the conservative method has been followed I find that a six-months interval is nearer the mark.

Further, that "efficient expectant treatment can only be carried out in a nursing home or hospital where the patient is under constant supervision of the surgeon" is a statement vitiated by its ending. If the Ochsner-Sherren treatment is so good surely the family doctor is capable of carrying it out and evaluating the signs which call for its abandonment. Surely it is a simple matter for the surgeon to open an appendix abscess in the patient's home. After all, an operating theatre is just four walls and a roof; it's the technique that matters.—I am, etc.,

R. RUTHERFORD, F.R.C.S.

Longtown, Cumberland, July 24.

Defective Hearing

SIR,—May I reply to Mr. A. Lowndes Yates's criticism (July 10, p. 90) of my article published in the *Journal* of July 3 (p. 18), and to that of Dr. James Kerr in the issue of July 17 (p. 135).

The ordinary conversational voice, as everyone knows, cannot be standardized. The response to this test varies according to the voice of the individual who is conducting the test, quite apart from environmental conditions; but it is possible for anyone engaged in frequent testing to develop a fairly constant "ordinary conversational voice" for the purpose required, and thus create a rough standard for this test.

I quite agree with Mr. Lowndes Yates that all these tests—the ordinary conversational voice, the pure tone audiometer, and the gramophone audiometer, etc.—should be conducted in a silent place, but unfortunately this is not universally possible at present. For example, the gramophone audiometer tests of school children must be conducted under ordinary class-room conditions. Accordingly, the ordinary conversational voice tests and the pure tone audiometer tests are conducted as nearly as possible under similar conditions, although in the pure tone test the meatus of the ear that is not being tested is occluded. As a matter of practical experience, with my own "ordinary conversational voice" and under the conditions stated, I find that a child who can repeat unfamiliar phrases at not more than twenty feet distant gives a loss of about 35 decibels over the main speech area (512–2,048 d.v.). With better conversational hearing than twenty feet the loss by the pure tone audiometer test shows something less than 35 decibels. Further, with conversational hearing at two feet only the pure tone audiometer test shows a loss of about 55 decibels over the main speech area. I have found in a considerable number of tests that this relationship between the response to the ordinary conversational voice and the pure tone audiometer is remarkably constant, and these two levels of hearing response form my boundaries between Grade I and Grade II in the first instance, and between Grade II and Grade III in the second, so far as the hearing qualification is concerned.

Mr. Lowndes Yates says, "If we assume that the ordinary conversational voice can be heard at a maximum of fifty feet, to hear at twenty feet shows a diminution of hearing power of about 6 decibels, but we are also told that the hearing loss with the pure tone audiometer is 35 decibels in this grade." I do not know why he assumes that the ordinary conversational voice can be heard at a maximum of fifty feet only. Harvey Fletcher has made careful investigations on this point and finds that the ordinary conversational voice can be heard at 1,250 feet. Mr. Lowndes Yates correctly says that a loss of 35 decibels with the pure tone audiometer means that the hearing distance is diminished to about one-fiftieth of the normal. One-fiftieth of 1,250 feet is 25 feet, which is surely getting very near to my own figure of 20 feet, and "about one-fiftieth" (his own words) might even bring it to exactly that figure.

With regard to the letter of Dr. James Kerr, who has always taken such a great interest in the welfare of the deaf, I agree that the number of persons coming within the scope of a Deaf Persons Act would be determined by the restrictions of such an Act. It seems to me, however, that an Act should not only embrace the 30,000 so-called "deaf and dumb" but also those severely deafened persons who would suffer from extreme handicap in their struggle for existence in competition with their more normal fellows—in short, those whose hearing defect is covered by my Grades IIb and III. The great difficulty is to get an accurate idea of this number.

My object was to estimate an outside figure within which this number would probably fall, so that the full nature of the problem would be indicated and a basis for further consideration arrived at. If an Act contained restrictions limiting its benefits only to the persons of Grade III type and to the more seriously deafened in Grade IIb, my outside figure of 150,000 would certainly be reduced to well under 100,000, but I consider an Act which covered only the 30,000 "deaf and dumb" in the country, while better than nothing, would not meet the needs of all the severely deafened and handicapped people. —I am, etc.,

Medmenham, Bucks, July 20. ARTHUR G. WELLS.

Ionization for Hay Fever

SIR,—I feel that there are one or two points in Dr. J. Adam's letter in the *Journal* of July 10 (p. 88) which cannot pass without comment.

First, he says that "some fibrinous exudate is troublesome for the first few days after treatment, but it is probably this and weakened ciliary action that explains the benefit." Now surely zinc ionization produces a protective film of zinc albuminate, thus limiting the absorption of the pollen proteins by the nasal mucosa. We know, too, that the most important function of the ciliary stream is the removal of mucus-entangled bacteria, dust, pollen, etc.; and that prolonged contact of these substances with the allergic mucosa serves to increase its sensitivity towards the specific allergen. Yet Dr. Adam would appear to suggest that weakened ciliary action plays a part in the beneficial effects of ionization.

Again, he says that "American writers have imputed ciliary damage to ionization. Such damage I have not seen, though it may conceivably happen from over-treatment." A study of the pathology of hay fever will show that metaplasia of the epithelial cells in varying degree, with replacement of the columnar cells by stratified cells and absence of cilia, is a constant feature in hay fever. So, while I agree with Dr. Adam that it is wrong to attribute permanent ciliary damage to ionization, except possibly as the result of over-treatment—or, more probably, the passage of too strong a current for too long a time in the presence of too strong a solution of zinc sulphate—I find it a little difficult to picture the nose of the medical patient referred to by him as being "quite normal" when "he returned for treatment before the beginning of this season."

Lastly, I cannot agree with him as to ionization being "mostly futile" for paroxysmal rhinorrhoea. It has been my experience, and apparently the experience of the vast majority of British and American writers, that ionization is of greater benefit for paroxysmal rhinorrhoea than for hay fever, but that in both cases its value is definitely palliative and very rarely curative.—I am, etc.,

Bath, July 20. C. A. HUTCHINSON.

Colitis in Mental Hospitals

SIR,—Relating to the discussion on the surgery of the colon initiated by Mr. Eric Crook at the Royal Society of Medicine (*Journal*, May 29, p. 1129), may I add the following remarks? Forty years ago colitis used to be the scourge of the London workhouse infirmaries, whence the mental patients were sent to the London asylums, and in these institutions the disease often spread with many fatal cases. In my experience at the opening of the new and clean Claybury Asylum in 1893—the first asylum of the first London County Council—many hundreds of its insane population were received from the overcrowded Poor Law infirmaries, and some of these people were suffering from colitis with diarrhoea and the passing of blood and mucus. The disease often spread to others occupying beds adjoining them in the dormitories, so that its occurrence came to be regarded as a discredit, indeed as a disgrace, to the administration. In order to emphasize the reproach the term dysentery, implying infection and want of care, was applied to all cases of colitis, and every case had to be reported to the pathologist. The seriousness of colitis—now called dysentery—was shortly afterwards recognized by the Board of Control (Lunacy Commissioners), which instructed that every case of colitis (now asylum dysentery) occurring in the asylums of England and Wales (now mental hospitals) should be reported to the Board and described as dysentery.

In the London County Council report of the asylums committee for 1914 my personal experience at Claybury is recorded with that of others. Dysentery (colitis) then occurred in 125 males and 286 females in the asylums of London, which had a population of about 20,000 insane persons. The pathologist, Sir F. W. Mott, added, "The cases for the most part have occurred in groups of two or more in the same ward." In the report of the Board of Control for 1935, 450 fresh cases of dysentery are reported in the mental hospitals of England and Wales, and the incidence is quoted as 3.6 per 1,000 patients.—I am, etc.,

London, W.8, July 23. ROBERT ARMSTRONG-JONES, M.D., F.R.C.P.

Birth by the Rectum

SIR,—I was interested in Dr. J. B. Patel's report of a birth by the rectum (*Journal*, June 5, p. 1159), as I had a similar case in December, 1936.

A young unmarried Kikuyu woman was brought into the native hospital at Fort Hall. She had given birth to a still-born child through the rectum about three days previously and was complaining of constipation. On examination, the whole of the vulva and perineum were covered with keloid growths about the size of large acorns. This was the result of an old circumcision scar, it being the habit of the Kikuyu to circumcise their young women, often with a resultant traumatic atresia of the vaginal orifice, which necessitates operative intervention before they can deliver their first babies. The vaginal orifice was fibrosed and would only admit the second finger with difficulty. I discovered that the child had been delivered through the posterior vaginal wall and then through the anterior wall of the rectum. These had probably been torn, as a result of the force of the labour pains and of the child escaping along the line of least resistance. The perineum itself was intact. On arrival at the hospital the woman was already in a septic condition and died from puerperal sepsis three days later.

I was surprised that the perineum was not lacerated, although the sphincter ani was; but when the large size of the stools that these natives sometimes excrete en

defaecation are considered it can be understood why the perineum was not injured in this case.—I am, etc.,

P. G. PRESTON, M.B., Ch.B., M.C.O.G.

Kenya Colony, July 12.

Treatment of Retained Placenta

SIR,—I was much interested in Mr. David Currie's article in the issue of July 10 (p. 57), because for nearly twenty years I have injected the cord as a routine in all cases of uncomplicated delay in the third stage of labour. In fact so anxious have I been to avoid manual removal that in many cases injection has been repeated as many as three or four times over a period of hours, usually even then with success. Furthermore, in cases sent into hospital hours after delivery this procedure has almost invariably succeeded.

My technique is simpler than that which Mr. Currie describes largely because I have never tied the maternal end of the cord except, of course, in cases of multiple pregnancy. I gather from his paper that he always ties this end. I maintain that an "empty" placenta will come away with greater ease than one in which the cord is ligatured. Tying of it will cause it to be engorged and bulky. I entirely agree with Mr. Currie as to the probable mechanism of separation, etc., following injection, and therefore, since this is largely due to increased bulk after injection, why not start with as empty a placenta as possible and make the contrast as a result of filling it with fluid even greater? Further, a cord empty of blood is easier to inject as it contains practically no clots. Space will not permit me to go into my technique in detail, but I feel that for simplicity it can hardly be bettered.

Very briefly it is: leave the maternal end of the cord untied; freshen it by cutting off the terminal inch or so; use a rather fine-pointed glass Higginson's nozzle (with a Higginson's syringe) the end of which is slightly bulbous. This latter enables a ligature to be used to tie the cord over the nozzle. As a matter of fact this is seldom necessary as a firm grip with the gloved hand is all that is required to make a watertight "joint" between the cord and the nozzle.

I may add that during these twenty years manual removal has had to be performed by me on five occasions both in private and in hospital work. This figure does not, of course, include cases other than those at or near term.—I am, etc.,

J. R. CAMPBELL CANNEY.

Cambridge, July 19.

The London Fever Hospital

SIR,—Medical practitioners who know and use the London Fever Hospital will welcome a recent decision of the Committee of Management to extend the isolation accommodation.

A contract has been signed for the erection of a new three-storied building providing single rooms on two floors, with an operating theatre, and small wards for children above. The architects are Sir Aston Webb and Son, and the design carries out in their entirety the recommendations of the Medical Committee. There are balconies to all floors, running completely round the building, and all nursing and service will be from the open air without internal corridors of any sort. An appeal will be launched in the autumn, and we shall be grateful for all the help we can get. We hope, too, that all who are interested will see the new building in due course, and in the meantime we commend the service of this hospital to our colleagues in the Greater London area. Private rooms are available for paying patients, and a high standard of nursing and maintenance can be relied upon.

This was the first, and it remains the only, voluntary fever hospital. Its growth and endurance through 135 years of service and its importance in medical history give the hospital an honoured place in the voluntary system.—We are, etc.,

CHARLES R. BOX, M.D., F.R.C.P.
JOHN F. H. BROADBENT, M.D., F.R.C.P.
WILLIAM H. WILLCOX, M.D., F.R.C.P.
C. E. LAKIN, M.D., F.R.C.P.
C. W. GORDON BRYAN, F.R.C.S.
D. F. A. NEILSON, F.R.C.S.
THOMAS HUNT, D.M., F.R.C.P.
K. SHIRLEY SMITH, M.D., F.R.C.P.

Obituary

Dr. HORATIO E. RAWLINGS died at Bishopston, Gower, on July 15. The son of a Wesleyan Minister, he was born at Sunderland in 1859 and went to Swansea at an early age. He studied medicine at Queen's Hospital, Birmingham, and the London Hospital, and graduated L.R.C.P.I. in 1887 and M.R.C.S.Eng. in 1889. Following a period as house-surgeon at the Swansea General Hospital he began private practice in the town, but soon went to Reynoldston, Gower, where he worked for several years. In 1903 he returned to Swansea, and soon built up a large private and insurance practice; for many years he was medical officer to the Swansea Post Office. Dr. Rawlings was chairman of the Swansea Division of the British Medical Association in 1923–4. He took a keen interest in sport, and was medical officer to the Swansea Rugby team for a number of years. He was a clever and keen musician, and acted as organist and choirmaster to the Brunswick Church for a period of twenty-five years. He was conscientious, modest, and generous as a doctor, a true and devoted Christian, and in maintaining the highest traditions of a general medical practitioner endeared himself to his patients and to the general public of Swansea. He is survived by a widow and seven grown-up children.

We regret to announce that Dr. JOHN ANDREW CLARKE of Luton died in London on July 4 after an operation. The eldest of four sons, who all joined the medical profession, he was born in 1868 and studied at Queen's College, Galway, and Belfast, graduating B.A. of the Royal University of Ireland in 1906 and taking the M.B., B.Ch. and B.A.O. degrees in 1909. He began practice at Luton in 1922 and joined the Bedfordshire Branch of the British Medical Association, and was appointed medical officer to the East Ward, Luton, and public vaccinator for the East District. He had been a member of the Bedfordshire Panel Committee, and served on the committee of the Luton Medical Society. He leaves a widow, two sons, and two daughters; the elder son, Dr. J. R. G. Clarke, was in partnership with his father, and the younger son is a medical student at Oxford. Dr. J. A. Clarke's death from pulmonary embolism following an operation for acute appendicitis has come as a great shock to his many friends and colleagues in Luton and its neighbourhood.

The following well-known foreign medical men have recently died: Dr. FÉLIX DE LA LAPERSONNE, formerly professor of ophthalmology in the Paris faculty of medicine and president of the Académie de Médecine and of the International League for the Prophylaxis of Blindness; Professor MARIO CARRARA, successor to Professor C. Lombroso in the chair of criminal anthropology at Turin, and editor of the Italian Archives of Criminal Anthropology founded by Lombroso.

Universities and Colleges

UNIVERSITY OF OXFORD

H. M. Sinclair, B.Sc., B.M., M.A., has been elected to an official fellowship and tutorship in physiology at Magdalen College.

E. H. Leach, B.Sc., M.A., has been appointed to a lectureship in physiology at Brasenose College.

UNIVERSITY OF LONDON

At a meeting of the Senate held on July 21 the title of Professor of Morbid Anatomy in the University was conferred on G. R. Cameron, D.Sc., M.B., B.S.Melbourne, in respect of the post held by him at University College Hospital Medical School. The D.Sc. in Applied Physiology was conferred on G. P. Crowden, M.R.C.S., L.R.C.P., University Reader at the London School of Hygiene and Tropical Medicine.

The following candidates have been approved at the examinations indicated:

ACADEMIC POSTGRADUATE DIPLOMA IN BACTERIOLOGY.—H. Berry, C. T. Calam, S. P. Gupta, T. Richards, Phyllis M. Rountree, N. K. Sen.

ACADEMIC POSTGRADUATE DIPLOMA IN PSYCHOLOGY.—T. M. Anklesaria, Dorothy L. Burch, Carla B. Freeman, Margaret E. Gurney, Edna Howard, Christina M. Hueffer, Pamela Middleton, K. L. Parker, J. L. Peterson, Ethel M. Turner, Jean A. Wales, Z. Wonchockier, Lola M. Woods.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL

The following scholarships, exhibitions, and prizes have been awarded at University College Hospital Medical School: *Goldsmid Entrance Scholarship*, R. E. O. Williams, Stella D. Morton. *Goldsmid Entrance Exhibition*, E. Petrie. *Atchison Scholarship*, L. J. Honeywill. *Atkinson Morley Scholarship* and *Magrath Scholarship*, A. S. Aldis. *Filliter Exhibition*, Isabel T. Hinde. *Fellowes Gold Medal*, A. M. Barry. *Fellowes Silver Medals*; P. H. Wood, D. A. Ferguson, Elizabeth Topley. *Liston Gold Medals*, *Alexander Bruce Gold Medal*, and *Tuke Silver Medal*, J. D. N. Nabarro. *Tuke Bronze Medal*, W. M. L. Turner. *Junior Clinical Surgery Prizes*, R. N. Houlding, M. F. Pilcher. *Ferriere Scholarship*, Ivy Tuck. *Bilton Pollard Fellowship*, M. Coleman, M.S., F.R.C.S.

LONDON HOSPITAL MEDICAL COLLEGE

The Price University Scholarship in the subjects of anatomy and physiology, value £100, open to students of the Universities of Oxford and Cambridge, has been awarded to P. W. Roe of Wadham College, Oxford.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN

The following awards of scholarships for 1937–8 are announced:

St. Dunstan's Exhibition: A. M. Dealler. *A. M. Bird Entrance Scholarship*: J. Myers. *Mabel Sharman Crawford Scholarship*: E. M. Robson. *Mrs. George M. Smith Scholarship*: V. J. McMullen. *MacIntyre Evans Scholarship*: L. M. Chant. *School Jubilee Bursary*: Mrs. E. Skelsey. Dr. *Margaret Todd Scholarship*: B. C. Mulvany. *Sarah Holborn Scholarship*: J. S. Davis. *A. M. Bird Scholarship for Clinical Studies*: B. J. H. Broadwood. *Alfred Langton Scholarship*: R. E. M. Bowden. *Ellen Walker Bursary*: M. Westmoreland-White. *Flora Murray Bursary*: E. Broadhead. *Beilby Bursary*: A. J. Blayn and E. A. Kaye. *Special Scholarships and Bursaries*: M. S. Cam, J. M. Drury-White, V. E. A. Sykes, M. L. Taylor, and M. V. Teichmann. *A. M. Bird Postgraduate Scholarship in Pathology*: M. Barber. *Mabel Webb and A. M. Bird Research Scholarship*: Marjorie V. N. Sudds, M.B., B.S., D.T.M. and H.

UNIVERSITY OF MANCHESTER

The Professor Tom Jones Memorial Surgical Fellowship has been awarded to T. S. B. Kelly, and Entrance Scholarships in Medicine to A. N. Guthkelch and L. Wise.

UNIVERSITY OF EDINBURGH

A graduation ceremony was held in M'Ewan Hall on July 21. The following degrees and diplomas were conferred:

HON. LL.D.—Edwin Bramwell, M.D., F.R.C.P., formerly Professor of Clinical Medicine and President of the Royal College of Physicians of Edinburgh.

M.D.—**W. M. Arnott, *F. Ayrey, J. C. Caird, *A. F. Cowan, R. W. Eason, **A. Haddow, **T. N. MacGregor, *H. M. D. Shepherd, J. K. Slater, I. D. Sutherland, **R. Walmsley, A. M. Watt.

M.B., CH.B.—J. Adelmann, G. O. Airey, L. Altman, J. P. Baird, H. A. Barker, Barbara U. Barnetson, M. R. J. Behrendt, H. J. Bell, D. K. Binder, Isabella R. Bishop, T. M'K. Boog-Scott, C. H. Bosenberg, S. O. Bramwell, T. J. Brownlee, K. I. Bruce, Jean M'K. Brunton, J. E. Buck, A. G. S. Calder, E. Campbell, D. L. Carmichael, C. Chesner, R. S. Churchward, G. J. Cleland, Joan K. Cunningham, Margaret H. Darling, †J. N. Davidson, S. Davison, B. Diamond, J. Dolgin, C. A. P. Donaldson, E. M. Donaldson, J. K. Drummond, D. E. Durran, Louise F. W. Eickhoff, †J. R. Frank, J. W. Fraser, Helen M. Gardner, S. Gellis, A. M. George, †A. D. Gillanders, R. O. Gillhespy, A. Graham, L. A. Griffith, C. Groves, J. Guthrie, R. H. Hannah, P. W. Hannay, E. I. B. Harvey, J. W. Heath, A. J. Hogan, R. W. B. Holland, G. Hollingsworth, J. Hotson, H. G. H. Houghton, Sir Eric O. A. Hutchison, J. E. Hutton-Mills, †J. Innes, J. C. J. Ives, W. O. James, †R. A. Jamieson, H. C. Jeffrey, R. W. P. Johnson, P. K. Kaufman, G. A. Kelsall, W. G. Kerr, H. M'P. Kilgour, F. Lake, F. W. Laurie, Deirdre M. Lewis, Elizabeth I. Low, R. B. Lucas M. Ludlam, Elizabeth M'Callum, Henrietta R. M'Cree, W. L. MacDonald, G. D. M'Dowall, A. A. MacGibbon, W. MacGregor, G. D. M'Intosh, R. A. M'Kail, J. M'Kee, A. M'Kelvie, D. H. MacKenzie, Agnes P. M'Laren, J. A. M'Laren, I. A. M. Macleod, W. Macleod, I. Macphail, D. A. Macpherson, R. L. Macpherson, Sheila M. L. M'William, V. S. Magnus, G. D. Malcolm, Joy I. G. Matson, H. J. S. Matthew, H. Meyer, J. Millar, J. H. Milligan, J. C. Milne, H. Milne-Redhead, A. Mondal, L. G. Morrison, A. J. G. Newton, W. Noordenbos, P. T. Northover, R. K. Oag, H. T. Osmond, M. W. Paterson, N. Pederson, D. B. Peterkin, G. J. Phillip, A. M. Phillips, L. Pollack, A. C. Reid, †F. H. Robarts, Ethel E. Robertson, R. P. Robertson, H. D. Rosenberg, W. Rosenbloom, D. C. Ross, G. I. M. Ross, J. M. H. Ross, J. M. Ross, R. M. Ross, A. P. Russell, K. D. Salzmann, D. L. Savill, G. W. Senter, A. C. Shrelford, J. W. Shield, G. F. F. Sinclair, R. S. Small, A. G. Smith, R. B. Smith, A. St G. Stephenson, P. D. Stewart, J. D. Sutherland, Rhoda M. Taylor, R. Troup, W. S. Tulloch, †Nina A. B. Verity, Doreen M. Waddington, G. C. Watt, C. C. Wedderburn, D. W. Whyte, A. W. Wilkinson, G. S. M. Wilson, G. Winchester, Leila E. Wynter, A. Young, R. G. B. Young.

DIPLOMA IN PUBLIC HEALTH.—P. G. Barrow, P. L. F. de Livera (*in absentia*), H. L. de Waal, A. M. Fraser, H. W. Hall, N. Husain (*in absentia*), P. L. Lai-Fook, E. A. Lawrence, V. P. M'Donagh, I. F. MacKenzie, V. D. Seevaretnam, S. Sivalingam, G. F. Valentine (*in absentia*), Agnes M. M. Hunter.

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.—K. B. Gore (*in absentia*), W. Happer, E. L. Lloyd, W. Mackie, N. S. Mohammed, W. Serle.

DIPLOMA IN PSYCHIATRY.—J. Carson, N. F. MacKenzie, J. H. Patterson.

DIPLOMA IN RADIOLOGY.—J. G. M'Whirter, J. R. Pierre (*in absentia*), T. Sprunt.

** Awarded Gold Medal for thesis. * Commended for thesis.
† Passed with honours.

The following prizes were presented: *Cameron Prize in Practical Therapeutics*: James Bertram Collip, M.D., F.R.S., Professor of Biochemistry in M'Gill University, Montreal, in recognition of his many contributions to endocrine therapy, and in particular his work on the parathyroid gland. *Ettles Scholarship and Leslie Gold Medal*: F. H. Robarts. *Scottish Association for Medical Education of Women Prize and Dorothy Gilfillan Memorial Prize*: Nina A. B. Verity. *Monat Scholarship in the Practice of Physic, Annandale Gold Medal in Clinical Surgery, Wightman Prize in Clinical Medicine, and Murchison Scholarship in Clinical Medicine*: J. Innes. *Buchanan Scholarship in Midwifery and Gynaecology, and Beaney Prize in Anatomy and Surgery*: R. A. Jamieson. *James Scott Scholarship in Midwifery and Gynaecology*: J. R. Frank. *Conan Doyle Prize*: A. Stadion. *Royal Victoria Hospital Tuberculosis Trust Gold Medal*: Elizabeth M'Callum. *Murdoch Brown Silver Medal in Clinical Medicine*: J. P. Baird. *Pattison Prize in Clinical Surgery*: A. W. Wilkinson. *Goodsir Memorial Fellowship*: A. Brown. *Freeland Barbour Fellowship*: A. I. Pirie. *M'Cosh Bursary*: I. A. Farfor. *Gunning Victoria Jubilee Prize in Bacteriology*: S Thomson *Gunning Victoria Jubilee Prize in Pathology*: W. M. Arnott. *Gunning Victoria Jubilee Prize in Therapeutics*: H. Scarborough. *Gunning Victoria Jubilee Prize in Zoology*: C. A. Green and S. Thomson (jointly). *Lewis Cameron Postgraduate Prize*: C. A. Green. *Lewis Cameron Undergraduate Prize in Bacteriology*: K. A Bisset and M. Gardiner (equal). *Wellcome Gold Medal and Prize in the History of Medicine*: J. Waterston. *Cunningham Memorial Medal and Prize in Anatomy*: G. M. Wilson. *Whiteside Bruce Bursary*: J. R. Lauckner.

An address was delivered to the new graduates by the Promotor, Professor Sydney Smith, M.D., F.R.C.P.Ed.

NATIONAL UNIVERSITY OF IRELAND

At a meeting of the Senate on July 15, with the Chancellor, Mr. Eamon de Valéra, LL.D., President of the Executive Council of Saorstát Eireann, in the chair, Dr. Denis J. Coffey, Vice-Chancellor, presented a report on the summer session, 1937, of the General Medical Council, on which he is representative of the University.

UNIVERSITY COLLEGE, DUBLIN

At a meeting of Convocation on July 17 the following medical degrees and diplomas were conferred:

M.B., B.Ch., B.A.O.—D. P. Murnaghan, G. M. FitzGerald, Kathleen A. Roche, R. Belton, J. Clyne, Maria Dempsey, J. P. Dodd, A. Eustace, J. D. Ffrench, P. J. Gilroy, G. J. Glynn, T. J. Gorman, N. N. Holmes, B. F. J. Kean, P. J. McEnroy, E. McKiernan, W. McManus, Nora McNally, J. O'Connell, R. M. P. O'Dolan, D. G. O'Sullivan, G. A. Peltier, B. MacM. Ramsay, Bridget F. Staunton.

D.P.H.—J. McHugh, P. H. J. Clarke, W. O. Cremin, J. M. Murphy, G. Davis, C. B. Mallen, P. O'R. Gavin, W. J. O'Brien, Mary B. Brady, J. J. Campbell, P. J. Fox, J. T. Guinan, J. P. Maher, P. J. O'Doherty, E. O'Shaughnessy.

B.Sc. (PUBLIC HEALTH).—J. A. Craig, W. O. Cremin, P. O'R. Gavin, J. McHugh, C. B. Mallen, J. M. Murphy.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

At a meeting of the Royal College of Surgeons of Edinburgh, held on July 22, with Mr. Henry Wade, President, in the chair, the following, having passed the requisite examinations, were admitted Fellows:

W. E. Austin, W. H. Bailey, D. Ballantine, E. E. Barnett, C. R. Chari, M. M. Cruickshank, R. H. Dale, W. K. House, J. Harkness, Agnes J. Herring, M. Jackson, K. G. W. James, H. I. Maister, A. R. A. Marshall, M. L. R. Morley, M. C. Moore, W. F. McGladdery, Margaret Fitz-H. Procter, J. C. Samis, G. I. Scott, I. H. Smith, S. L. Strange.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

A quarterly meeting of the Royal College of Physicians of Edinburgh was held on July 20, with the President, Dr. W. T. Ritchie, in the chair.

Dr. Francis Esmond Reynolds (Glasgow) and Dr. Charles Kelman Robertson (Edinburgh) were elected Fellows.

BRITISH POSTGRADUATE MEDICAL SCHOOL

The following constitute the Governing Body for the year 1937-8: Sir John Caulcutt (Chairman), Mr. Charles J. Allpass, Mr. W. Girling Ball, F.R.C.S., Sir Henry Brackenbury, LL.D., M.D., Viscount Dawson of Penn, M.D., P.R.C.P., Lieut.-Colonel H. R. Dutton, I.M.S. (ret.), Professor G. E. Gask, F.R.C.S., Dr. A. M. H. Gray, Mr. Somerville Hastings, F.R.C.S., Lord Horder, M.D., Mr. W. M. Goodenough, D.L., Miss L. Martindale, M.D., Sir Frederick Menzies, M.D., Sir Arthur S. MacNalty, M.D., Mr. H. J. Paterson, F.R.C.S., Sir Thomas Stanton, M.D., Sir Cuthbert Wallace, Bt., P.R.C.S., Sir William Willcox, M.D., Sir Alfred Webb-Johnson, F.R.C.S.; with Colonel A. H. Proctor, M.D., I.M.S. (ret.), as Dean and Secretary to the Governing Body.

COMBINED HOSPITALS UNIVERSITY ENTRANCE SCHOLARSHIPS

As a result of the examination held for the University Entrance Scholarships, offered by St. Bartholomew's Hospital Medical College, Guy's Hospital Medical School, and St. Thomas's Hospital Medical School, the following awards have been made:

H. V. Morgan (Gonville and Caius College, Cambridge), Scholarship at St. Bartholomew's Hospital; L. W. Smith (Sidney Sussex College, Cambridge), Exhibition at St. Bartholomew's Hospital.

G. E. H. Enderby (St. John's College, Cambridge), Scholarship at Guy's Hospital; G. T. G. Thomas (Gonville and Caius College, Cambridge), Exhibition at Guy's Hospital.

J. L. Pinniger (St. Edmund Hall, Oxford), Scholarship at St. Thomas's Hospital; M. G. Smith (Emmanuel College, Cambridge), Exhibition at St. Thomas's Hospital.

The Services

MEDICAL DIRECTOR-GENERAL, R.N.

Surgeon Vice-Admiral P. T. Nicholls, C.B., has been appointed Medical Director-General of the Royal Navy.

OPERATIONS IN PALESTINE

The names of Major H. Alcock, R.A.M.C., Group Captain K. Biggs, M.C., R.A.F.M.S., Wing Commander G. P. O'Connell, R.A.F.M.S., Squadron Leader G. E. Church, R.A.F.M.S., and Flight Lieutenant C. A. Rumball, R.A.F.M.S., have been brought to notice by the Air Officer formerly Commanding the British Forces in Palestine and Transjordan, in recognition of distinguished services rendered in connexion with the operations in Palestine during the period April to October, 1936.

Medical Notes in Parliament

The Summer Adjournment of Parliament is due to begin on July 30 and to end on October 21 unless the Speaker and the Lord Chancellor in the public interest call both Houses together at an earlier date. A new session is expected to be opened by the King on October 26.

The Collecting Charities (Regulation) Bill was read a first time in the House of Lords on July 22 on the motion of Lord Kennet, who, in introducing the Bill, explained it was to provide for the better regulation of collections for charitable, benevolent, or philanthropic purposes from house to house or in any place of entertainment or refreshment.

In the House of Lords, on July 26, the Finance Bill and the Milk (Amendment) Bill were read a second time. On the following day the Local Government Superannuation (Scotland) Bill was read a third time and passed.

Debates arranged in the House of Commons this week were concerned with the Mines Department, the co-ordination of defence, the cost of living, and Dominion affairs.

The Milk (Amendment) Bill passed through the report stage in the House of Commons on July 21 and was read a third time on July 23. On the latter day it was read a first time in the House of Lords.

The Royal Samaritan Hospital for Women Glasgow Order Confirmation Bill was considered by the Commons on July 21 and was read a third time on July 22, without amendment.

The Liverpool United Hospital Bill, as amended in committee, was considered on report in the House of Commons on July 22 and further amendments were made. The Bill was read a third time on July 26.

The Lords amendments to the Matrimonial Causes Bill were approved in the Commons on July 23. No allusion was made to lunacy as a ground for divorce. Also, on July 23, the Lords' amendments to the Cinematograph Films (Animals) Bill were accepted, and on July 26 the Lords' amendments to the Coal Mines (Employment of Boys) Bill were agreed to.

Pensions of Local Government Officers

In the House of Lords on July 19 the Local Government Superannuation Bill was considered in committee.

On Clause 5 (Power to admit employees of statutory undertakers and certain associations) Lord ADDISON moved to add a provision that where a local authority under Section 101 of the Local Government Act, 1929, made a grant to a voluntary organization for the provision of maternity and child welfare services, the provisions of Subsection (1) of Clause 5 should apply in relation to that organization and to health visitors and superintendents of welfare centres employed by those organizations as they applied in relation to statutory undertakers and to employees of those undertakers. Local authorities were empowered, when they came to an arrangement with voluntary organizations employing midwives, to arrange that the midwives so employed should be incorporated in the superannuation scheme as and when the local authorities took over the voluntary organizations. The discharge of duties under the Midwives Act was a statutory obligation on the local authorities, and the voluntary organizations in this case were performing these duties on behalf of the local authorities. The case was identical with that of officers employed in maternity and child welfare services. The officers in maternity and child welfare services employed by infant welfare associations were overlooked in the House of Commons, and it was to remedy that omission that he moved the amendment.

VISCOUNT GAGE asked Lord Addison not to press the amendment at this stage of the Bill. The clause as it stood was accepted by the Government as an amendment in the House of Commons. It related only to midwives employed by a voluntary organization with whom the authority responsible for midwifery services had made arrangements under the Midwives Act of last year. The duties imposed on the local authority, and consequently the services required of these midwives, were definite and specific; they were to be, so to speak, "on call," as and when required, to attend women needing the midwifery service for which the local authority was responsible. Their salaries were such as might be determined by the agreement and, in effect, the local authority indirectly paid those agreed salaries through the voluntary organization—an important point in the superannuation scheme. They were as nearly as might be in the same position as midwives directly employed by a local authority. The position of health visitors doing maternity and child welfare work was analogous, but not identical. The financial arrangements between the authority and the voluntary body were not the same. Services were not similarly specified, salaries were not specifically controlled, and subsidies were not so directly related to salaries. It was considerations of this kind which led the majority of the Selby-Bigge Committee to reject suggestions designed to secure the same object as this amendment. If an attempt were made to cover the case which Lord Addison cited, amendment of the Bill would logically have to be carried much further than he proposed. They could hardly differentiate between health visitors engaged on child welfare work and those similarly engaged on work in connexion with the blind, the tuberculous, and the mentally deficient as employees of voluntary bodies whose financial relations with local authorities were for the most part indistinguishable in principle from those of child welfare organizations. He did not wish Lord Addison and those for whom he spoke to regard this as necessarily the last word on the subject for all time. The Minister of Health had undertaken to explore the possibilities in another matter affecting the superannuation of nurses and health visitors. Consultation with the local authorities and others concerned might throw a different light on the considerations which, as at present envisaged, compelled him to ask that the amendment should not be pressed.

Lord ADDISON withdrew the amendment.

The Bill passed through committee.

The Bill passed through the report stage on July 22.

Marriage Bill

In the House of Lords, on July 19, Lord ELTISLEY moved the third reading of the Matrimonial Causes Bill. Lord DARYNGTON, in opposing the motion, said that it would be a very big step to make insanity a ground for divorce. Many of them had known of cases where men had returned to sanity after ten or even fifteen years.

The Bill was read the third time by 79 votes to 28, and passed. Among the Peers who voted for the third reading was Lord Dawson.

Animal Diseases and the Veterinary Service

During the debate on the second reading of the Agriculture Bill in the House of Lords on July 20 Lord ADDISON expressed the hope that some of the money voted to the eradication of disease would be devoted to research. With very inadequate finance an Agricultural Research Committee had been established on the lines of the Medical Research Committee. If, for a long time past, research into animal diseases had been organized and well directed, with pay such as would attract the right young men into it and would keep them in it, we should have been much further forward than now. He hoped that the expenditure under the Bill would not take the form of paying too much for animals found to be diseased, but would aim at seeking to remove the causes of disease, which could only be done by large-scale, patient encouragement of research.

Viscount BLEDISLOE hoped the time had come when the status of veterinary surgeons in this country would be improved. There were countries in which in some cases the medical and veterinary professions merged one into the other, as in Denmark, and in many countries there was not that disparity of status which unfortunately existed in this country and which kept some of the ablest and most scientifically minded men out of that branch of the medical profession.

The EARL OF GLASGOW said that in the more progressive counties in Scotland, where the local authorities had developed a co-ordinated medical, veterinary, and bacteriological service, they were concerned that the proposals of the Bill might seriously affect not only the veterinary services but the health services generally. In those health services the veterinary officer was only one link in the chain of control, the other links being the sanitary inspector and the county medical officer of health. Now it was proposed to break this chain, but, important as animal disease might be, public health was of more importance.

The House of Lords went into committee on July 22 on the Agriculture Bill. On Clause 18 Lord CRANWORTH moved to insert:

"The Chief Veterinary Officer of the Ministry of Agriculture shall supervise and direct such veterinary officers in the discharge of their duties and shall be responsible directly to the Minister in relation thereto."

The EARL OF FEVERSHAM said the matter had already been discussed in the House of Commons. Reference had been made to the practice followed in the Ministry of Health, but there was no statutory provision that compelled the Minister of Health to appoint a chief medical officer or said that the chief medical officer was to have direct access to the Minister. This was done in accordance with administrative convenience and at the wish of the Minister himself. It was the permanent secretary who was responsible for the efficient administration of the Department and who in turn was responsible to the Minister. It would be contrary to precedent for the chief veterinary officer of the Ministry of Agriculture to be responsible for other than his own veterinary work and that of the staff under him. There was no doubt that whenever representation to the Minister was necessary the chief veterinary officer would have access to him at any time to raise a point for which he was responsible.

The amendment was withdrawn.

On Clause 32 (Application to Scotland) Lord ROWALLAN moved to add a new paragraph to provide that the functions of the local authorities under the Diseases of Animals Act, 1894-1935, should be transferred to the Minister. He said that under the Bill three duties of local authorities under the Diseases of Animals Act would be transferred to the central veterinary service. These were routine veterinary inspection of dairy herds under the Milk and Dairies Legislation, tuberculin testing at veterinary inspection under the Milk (Special Designations) Order of the Department of Health for Scotland, and diagnostic inquiries into the various scheduled diseases, including tuberculosis.

Lord FEVERSHAM said it would cut right across the intentions of the central veterinary service if it were contemplated that the numerous activities of local authorities under the Diseases of Animals Act were to be effected by the central service. Grave difficulties would arise in administration of what was to be a service directed essentially to the better eradication of animal diseases.

The amendment was withdrawn.

The EARL OF GLASGOW moved to insert in Clause 32 (Application to Scotland) the following new paragraph:

It shall be the duty of officers appointed by the Minister to furnish any information reasonably required by the local authority or its medical officer of health in regard to any disease of animals affecting or likely to affect the health of persons resident in the area of the authority, and to trace the course of infection wherever reasonably practicable.

Lord STRATHCONA said it was recognized that the services of a veterinary inspector were and would still be required at times by local authorities to enable them to discharge their

functions in relation to public health. Provision was made in Clause 18 requiring the Minister to make arrangements for placing the services of veterinary inspectors at the disposal of local authorities. The services of veterinary inspectors would be made available for inspections of cattle carried out in consequence of notifications received from medical officers of health under the Milk and Dairies Acts or the Infectious Disease (Prevention) Act, 1890, that consumption of milk from a certain specified herd was likely to cause tuberculosis or was suspected to have caused some other infectious disease.

The EARL OF FEVERSHAM said that where a medical officer had been informed of a case of tuberculosis of bovine origin the inspectors, whether full-time or part-time, under the veterinary service would act in the closest co-operation with the medical officer in tracking the herd from which the disease arose. He hoped that practice would be followed a great deal more than it had been in the past. It not only benefited the large centres of population but the agricultural industry. It would be a means whereby the veterinary service could trace the disease which it wished to eradicate. He could give the most explicit assurance that this would be carried out.

The amendment was withdrawn.

Consideration of the Bill in committee was then concluded.

Factories Bill

The report stage of the Factories Bill was taken in the House of Lords on July 22. On Clause 2 (Overcrowding) the House agreed to an amendment moved by the EARL OF MUNSTER authorizing the chief inspector by certificates to exempt any workroom in which explosive materials are manufactured or handled from provisions laid down in the clause.

On Clause 42 (Washing facilities) an amendment was accepted on the motion of the EARL OF MUNSTER to provide that the facilities for washing "shall include soap and clean towels or other suitable means of cleaning or drying." The Earl of Munster also moved to insert a subsection providing that the Home Secretary might by regulation exempt factories from any of the requirements of the clause in cases of difficulty in obtaining an adequate supply of water or where accommodation was restricted but adequate and suitable washing facilities were otherwise conveniently available. The proviso was accepted.

On Clause 43 (Accommodation for clothing) an amendment was accepted allowing the Home Secretary to exempt factories from any of the requirements of the clause in special circumstances specified in the Regulations.

Lord FARINGDON moved to provide on Clause 53 (Underground rooms) that no underground workroom should be excepted from the clause unless certified by the inspector for the district to be suitable for the purpose on hygienic grounds, and in particular as regards construction, light, ventilation, and adequate means of escape in case of fire. The EARL OF MUNSTER said the clause as it stood would be more effective in securing improvement in underground rooms. The issue of positive certificates by inspectors tended to tie the hands of the staff in future in raising standards. The amendment was negatived.

After Clause 54 (Basement bakehouses) Lord FARINGDON moved to insert a new clause prohibiting baking between 11 p.m. and 5 a.m. except as allowed by special order of the Home Secretary. The EARL OF MUNSTER said the report of the Committee on Night Baking had been very recently received and demanded a more thorough examination than had so far been possible. It would not be possible for the Government to entertain any question of legislation on the subject during the present session. The Minister of Labour was willing to enter into negotiations with representatives of the two sides without delay to establish some joint machinery whereby the trade might devise means for ameliorating conditions.

The amendment was negatived.

On Clause 73 (Reduction of weekly hours of work of young persons under 16) Viscount SAMUEL moved to provide that after three years from the commencement of the Act the maximum weekly hours for young persons under 16 should be reduced to 40, while 44 should be the maximum in lieu of 48 in the exempted trade. The EARL OF MUNSTER said it would be impossible to go further at the present time than the proposals in the Bill, but the Government expected at no distant date to make a further advance. The proper way to deal with the matter was to consider it in the light of the experience which would be gained during the next few years when industry had adjusted itself to the reduced hours laid down in the Bill.

Lord Samuel's amendment was defeated by 50 to 14.

On Clause 101 (Certificate of fitness for employment of young persons) an amendment was accepted on the motion of the EARL OF MUNSTER to insert the following new subsections:

"Where the examining surgeon so directs in the certificate, any such condition as aforesaid shall, so far as relates to the employment in respect of which the certificate was issued or other employment in a factory in the occupation of the same occupier, continue to have effect when the young person has attained the age of 16; but unless such a direction is made the condition shall cease to have effect when the young person attains the age of 16, and shall in any case cease to have effect when the young person attains the age of 18.

"Where a certificate under this section is subject to a condition requiring re-examination after an interval specified in the certificate, the examining surgeon on such re-examination may vary the certificate or may revoke the certificate as from such date as he may direct; and if the certificate of a young person is revoked before he attains the age of 16 he shall not remain in any employment to which the certificate relates, and subsection (1) of this section shall thereafter have effect as if no certificate had been issued in respect of that young person."

The amendment was agreed to.

A new clause was added dealing with the application of the Act to electrical stations, including the application of the provisions of Part IV with respect to special regulations for safety and health.

The report stage was completed.

The House of Lords read the Factories Bill a third time on July 23.

"Deplorable" Housing Conditions in Carmarthen

Mr. JAMES GRIFFITHS inquired on July 22 whether the attention of the Minister of Health had been called to the report made by the medical officer of health for the county of Carmarthen, drawing attention to the urgent need for a maternity home in the county, and to the deplorable housing conditions in some parts, in particular to a case in which a midwife had reported that she had been compelled to use a step-ladder to reach a patient in one house; and whether, having regard to the high incidence of maternal mortality and of tuberculosis in the county, he would cause an inquiry to be made into the housing conditions there. Sir KINGSLEY WOOD replied that his attention had not been drawn to the report. Provision of a maternity home was being actively considered by the Carmarthen County Council in conjunction with the Llanelly Town Council. He was aware of the housing conditions in the county, and was arranging for his officers to confer in the matter with the local authorities concerned.

Rehabilitation After Accidents

Sir ARNOLD WILSON, on July 26, asked the Minister of Health what, if any, steps he had in contemplation to give effect to the recommendation of the interdepartmental committee on the rehabilitation of persons injured by accidents, with particular reference to the treatment of the 200,000 cases of fractures which occurred annually. Mr. BERNAYS replied that the Minister had already sent copies of the interim report of this committee to the county and county borough councils in England and Wales, with a covering circular. In this report the committee expressed the hope that they would be in a position to present a further report without delay, and the Minister did not propose to take any further general action on this subject until he had received that report.

Report of Committee on Night Baking.—Replying, on July 22, to an inquiry by Mr. Banfield about the report of the Committee on Night Baking, Sir SAMUEL HOARE said the committee, by a majority, advised against statutory prohibition of night baking. Its view was that such prohibition would fall far short of providing comprehensive and effective relief to the night baker from the serious social disadvantages under which he laboured. The situation presented in the report demanded a more thorough examination than had been possible, and he could not at present make any final announcement of the Government's views on the main issue. In view of the nature of the report it would not in any case be possible for the Government to entertain any question of legislation on the subject during the present session. The committee had suggested that some recognized body should be set up on which representatives of both sides of the trade might meet together to thrash out difficulties and devise means for amelioration of conditions. The Government was prepared to take action to give effect to this.

Industrial Accidents Increase.—Answering Mr. Alfred Short on July 22, Sir SAMUEL HOARE said he much regretted the increase in industrial accidents during 1936 as compared with 1935. As the Chief Inspector pointed out in the introduction to his report, the increase in the number of accidents was partly due to increased employment. Statistics over a period of years showed that the rate of accidents in proportion to the number of persons in employment was decreasing. If any large reduction of accidents was to be obtained it must be through the exercise of increased care by both employers and workpeople. This could best be secured through the development of safety organizations. The Factory Department had made every effort in the past to promote such development, and would continue to do so.

Compulsory Pasteurization.—Mr. WM. LEACH asked the Minister of Health on July 22 to have a searching inquiry made into the allegations against raw milk, "in view of the many loopholes in the evidence adduced in support of the allegations against raw milk in connexion with outbreaks of scarlet fever and typhoid fever," before he sanctioned any general claim for the compulsory pasteurization of milk. Sir KINGSLEY WOOD replied that he was satisfied that in all recent cases of this kind which had been investigated by his department, and in which the outbreak was traced to the consumption of raw milk, the evidence on this point was conclusive. He recalled that the Cattle Diseases Committee of the Economic Advisory Council, which reported in 1934, reviewed the question of the danger of the spread of these diseases through the medium of milk before it recommended compulsory pasteurization in large towns. He did not consider it necessary to institute any further inquiry into this question.

The Paratyphoid Outbreak in Liverpool.—Asked on July 22 what was the cause of the Liverpool outbreak of paratyphoid fever in January last, Sir KINGSLEY WOOD said the medical officer of health of the city was of opinion that the outbreak was probably caused by the infection of food by a carrier of the disease.

Tuberculosis Statistics.—Sir KINGSLEY WOOD furnished on July 22 the following statistics on the incidence and mortality:

Tuberculosis (All Forms)

	Cases	Deaths
Norway (1934)	5,521	3,225
Japan (1934)	*	131,525
Germany (1934)	*	47,179
Switzerland (1935)	*	4,035
England and Wales (1935)..	59,623	29,201

*Information not available.

Notes in Brief

During 1936 six persons under 16 years of age were killed and 1,188 injured (disabled for more than three days) at mines under the Coal Mines Act in Yorkshire.

Mr. Chamberlain told Mr. B. V. Kirby, on July 14, that he could hold out no hopes of special facilities being given for the passage of the Local Authorities (Hours of Employment in Connexion with Hospitals and Institutions) Bill.

Medical News

The House of the British Medical Association, including the Library, will be closed from 6 p.m. on Friday, July 30, to 9 a.m. on Tuesday, August 3 (Library 10 a.m.).

The Royal College of Physicians of London will be closed from Monday, August 2, to Saturday, September 11, both days inclusive.

In our advertisement columns this week there appears a vacancy for the University Chair of Pharmacology, tenable at the College of the Pharmaceutical Society of Great Britain, at a salary of £1,200 per annum.

The sixteenth Carlsbad international postgraduate course, with special reference to balneology and balneotherapy, will be held at Carlsbad from September 12 to 18. Further information can be obtained from Dr. Edgar Ganz, Carlsbad.

The twenty-first International Congress against Alcoholism will be held at Warsaw from September 12 to 17 at the University Józef Pilsudski. Among the subjects to be discussed are alcohol and work: the campaign in Poland against alcoholism: the action of alcohol on the brain, and beer as the cause of psychoses; racial, environmental, and age factors; the work carried on in Germany, the Ukraine, and the United States; fiscal considerations and sociological difficulties; and the possibilities of international collaboration. The preliminary programme can now be obtained from the general secretariat of the congress, 24, Chocimska Street, Warsaw.

The Minister of Health has sanctioned the borrowing of £488,666 by the Lancashire Mental Hospitals Board for works in connexion with the extension of the Brookhall certified institution for mental defectives, to provide accommodation for 1,326 additional patients, bringing the total accommodation of the institution up to 2,098. The new accommodation will include a hospital, school, workrooms, recreation hall, staff cottages, and administrative buildings.

Lord Nuffield and Mr. Edward Meyerstein have been made vice-presidents of Papworth Village Tuberculosis Settlement. In 1937 Lord Nuffield has given £25,000 to the settlement, and Mr. Meyerstein £20,000.

Miss Hurdon, M.D., C.M., retires from the directorship of the Marie Curie Hospital, Fitzjohn's Avenue, N.W., at the end of this year. Dr. M. D. Gilmour has been appointed to succeed Miss Hurdon as director from January 1, 1938.

Dr. Leslie Winter Dryland and Lieut.-Colonel Josiah Walker, M.C., T.D., have been appointed Deputy Lieutenants for the County of Northampton.

Dr. William J. Kerr of San Francisco was elected president of the American College of Physicians at the annual meeting recently held at St. Louis.

Sir Herbert Samuelson, acting on medical advice, has resigned the office of Chairman and Treasurer of University College Hospital, which he has held since 1927. Sir Courtauld Thomson will hold these offices pending the appointment of a successor.

The issue of *Il Policlinico* (Sez. Prat.) for July 12 contains a sympathetic obituary notice of Sir Squire Sprigge, late Editor of the *Lancet*.

The June issue of *Norsk Magazin for Laegevidenskapen*, the organ of the Norwegian Medical Association in Oslo, is dedicated to Francis Harbitz, professor of morbid anatomy and forensic medicine, on the occasion of his seventieth birthday, and contains a bibliography of his writings from 1895 to 1937.

The Air Ministry has notified aircraft owners that it intends to make the carrying of oxygen compulsory during flights by commercial aircraft at altitudes of 15,000 feet.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Attiology Westcent, London.*
SECRETARY, *Mediseera Westcent, London.*

The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh;* telephone: 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin;* telephone 62550 Dublin).

QUERIES AND ANSWERS

Successive Miscarriages

Dr. O. SYDENHAM writes: I should be very glad if any of your readers could suggest treatment for a patient who has had five successive miscarriages at ages varying from nine weeks to four months. There is no physical abnormality, and her Wassermann reaction and the husband's are negative.

Weight of Twins

Dr. H. J. CLUTTERBUCK (Llanelly) writes: I have to-day delivered a multipara of twin girls, both being breech presentations. The first child weighed 9½ lb. and the second one 8½ lb. In my fairly long experience of midwifery I have never seen such splendid specimens, and I should like to know what is the record weight for twins born alive.

Agranulocytosis and Rheumatism

Dr. C. J. YOUNG (Bradford) writes: With reference to the question asked by Mr. L. A. Riddell (*Journal*, July 24, p. 197), the possibility implied was considered, but rheumatic fever has not so far been incriminated as a cause of agranulocytosis.

LETTERS, NOTES, ETC.

Medical Books for a Mission Hospital

Dr. HOPE TRANT (Mwenzo Hospital, P.O. Isoka, Northern Rhodesia) writes: I ask leave to use your columns to beg for discarded medical books for this mission hospital. There are probably among your readers practitioners who take a pride in keeping their medical libraries up to date, or who, for various reasons, must keep abreast of the latest developments. May I ask these, when they are replacing their older editions with newer ones, to be so kind as to put aside the older ones for us. The Livingstonia Mission, to which this hospital belongs, has a chain of native hospitals in Northern Rhodesia and Nyasaland. They are run on pitifully small grants ranging from £40 to £200 per annum, and, as the medical missionaries' salaries are also very small, there is little or no money for the purchase of new medical books. On isolated stations medical works are our consultants and guides, and if these are antiquated and out of date, so will our practice become. If, therefore, any of your readers would be kind enough to send us, by book post to the above address, medical books of any kind, but preferably not older than 1926, they would earn our heartfelt thanks. Should duplicates be received, they will be passed on to another station.

Education for Nursing

At the opening meeting of the International Council of Nurses Quadrennial Congress Mr. Kenneth Lindsay, M.P., Parliamentary Secretary to the Board of Education, said that the Board was doubly interested in the nursing profession. In the first place, the local education authorities throughout England and Wales employed a nursing staff equivalent to 2,574 whole-time nurses, who assisted the medical officers at school inspections and worked in the school clinics, and also followed up the work in the schools by visits to the children's homes and by interviews with their parents. The Board was naturally concerned with the education of so large a number of women in the employment of the authorities, and too much thought could not be given to providing the training which would best fit them for the special duties required in the school medical service. In the second place, the Department was interested in the education of nurses because it was anxious that the schools should help the nursing profession as far as possible by supplying the kind of girls that were needed.

Bonomo and the Itch-mite

Dr. CONOR J. O'L. MAGUIRE (Co. Mayo) writes: Reading your annotation on "Bonomo and the Itch-mite" (*Journal*, July 17, p. 124) suggests that it may be of interest to know that the parasitic origin of scabies was well known in the west of Ireland, and that the knowledge must have dated very far back. I remember when a boy seeing women searching the hands of children who had scabies with a fine sewing needle and picking out the mite (or, as they called it, the fleshworm) on the point of the needle. These women were illiterate Irish-speaking people, to whom the knowledge must have been handed down through generations. There is an old Irish proverb relating to the itch-mite which is called *Frigh*: "Is lugha na frigh ughdhar an droch-adhbar"; which is translated: "Smaller than the itch-mite is the beginning of evil" (or malignant disease).

Thinking and Trying

In the "Nova et Vetera" article on page 120 of our issue for July 17 it was stated that Sir David Wilkie, in his address on "The Scottish Tradition in Surgery," connected John Hunter's advice, "Don't think; try it," with immunization of human beings by giving them cow-pox. Professor J. A. Nixon, however, with a desire to put the story in its right setting, informs us that Baron gives the whole letter in his *Life of Edward Jenner* (vol. 1, p. 33), showing that Hunter was referring to some observations on hedgehogs. The letter runs:

> "I thank you for your experiment on the hedgehog; but why do you ask me a question by the way of solving it? I think your solution is just, but why think,—why not try the experiment? Repeat all the experiments upon a hedgehog as soon as you receive this, and they will give you the solution."

Cheap Milk for Mothers and Children

A leading article in the *Journal* of July 17 discussed the memorandum on cheap milk for mothers and children issued by the Children's Minimum Council. The Secretary now informs us that there has been such a demand for this memorandum that the Council has decided to publish it in pamphlet form, and it will be on sale at the office, 72, Horseferry Road, S.W.1 (price 6d. a copy).

Bermondsey Public Solarium

The laying of the foundation stone of the Bermondsey Public Health Centre was reported in the *British Medical Journal* of September 28, 1935, and the Centre was officially opened by the mayor on November 7, 1936. We have now received a thirty-two-page booklet describing the new light treatment department, or solarium, which occupies almost the entire first floor of the Public Health Centre. A light treatment department was first introduced in Bermondsey in 1926, when the capacity of the department was 350 per day. Now it is 1,600, and up to fifty patients can receive treatment simultaneously with the present apparatus. The booklet is issued by Hanovia Ltd. of Slough, who designed and installed the equipment for the new department.

Dr. H. V. CRABTREE (Torquay) wishes to announce that he is no longer associated in partnership with the Southern Medical Agency, and that in consequence of his withdrawal all correspondence for that agency should be addressed to 1, Albert Street, Birmingham.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

85 Diphtheritic Endocarditis

G. J. BUDDINGH and K. ANDERSON (*Arch. intern Med.*, April, 1937, p. 597), who record an illustrative case, state that only six examples of acute vegetative endocarditis caused by the diphtheria bacillus have hitherto been reported. In three of these cases the micro-organisms, while presenting the morphological and cultural features of the diphtheria bacillus, were not virulent to guinea-pigs. The authors' patient was a boy, aged 16, who suffered from rheumatic heart disease, and whose principal symptom was repeated epistaxis which required packing. Death took place after seven months' illness with symptoms of ulcerative endocarditis. At necropsy a large friable fibrinous vegetation from which virulent diphtheria bacilli were grown was found along the edges of the mitral valve; the portal of entry was most probably the nasopharynx, in which ulceration had been caused by the packing.

86 Cramp in the Leg

J. WILDER (*Wien. klin. Wschr.*, June 11, 1937, p. 895) has studied for many years the occurrence of cramp in the calves, and has found this phenomenon to be more common than is usually supposed. A maximal tonic contraction of a muscle takes place, which lasts for from one to six minutes, giving rise to intense pain which leaves the muscle tender for several days but which does not impede locomotion. Powerful passive stretching of the muscle may cut the attack short. Various aetiological factors are cited in the literature; these include metabolic disturbances, such as gout, diabetes, kidney disease, and pregnancy; poisons—for example, alcohol, lead, and arsenic; vascular diseases; static and dynamic factors, as, for instance, flat-feet and occupational dysfunction; neuritic diseases; and avitaminoses. Wilder examined 2,443 cases, and found a history of cramp in 33 per cent. of healthy persons and 40 per cent. of diseased persons. The symptoms usually occurred in the fourth decade, and slightly more often in men than in women; manual and sedentary workers were equally affected. High uric acid values were more common in cases with cramp than in normal cases. Normal diuresis was found in 31 per cent. of these cases, increased diuresis in 24 per cent., and decreased diuresis in 46 per cent., indicating a renal factor in the aetiology of the condition. Cramps were more often noted in alcoholics than in teetotallers. In a series of 1,413 patients suffering from various diseases Wilder found that this condition was common in those with arteriosclerosis, neurosis, chronic arthritis—especially spondylarthritis—and flat-feet. In certain conditions—as, for example, hyperthyroidism—cramps were less often found than in healthy persons. In many cases diathermy and a vegetarian diet, given to lower the hyperuricaemia, controlled the cramp. The author believes that it is due to a lowering of muscular tone, and that irritation of the peripheral nerves and the accumulation of uric acid in the blood are exciting factors.

87 Hypertension in Young Adults

M. A. TOURNIARE (*J. Méd. Lyon*, June 5, 1937, p. 331) draws attention to a not uncommon condition occurring chiefly in young persons, aged between 20 and 26, which he terms "hypertension sympathique solitaire." Fifteen cases have been studied in the past six years, and the disease was latent in five; the remainder complained of dyspnoea and palpitations, and a few of precordial pain following exercise, emotional disturbance, or a meal. The systolic blood pressure was found to be moderately increased; the diastolic pressure was in all cases normal. In some cases the blood pressure was raised following exercise, but fell after a period of rest. In no case could cardio-vascular disease be discovered, and in three cases the basal metabolic rate was raised. Tourniare points out that this condition must be differentiated from true juvenile hypertension, in which the diastolic readings are high and do not fall, even after long periods of rest. The patients complain of the classical symptoms of arterial hypertension, and there is usually hypertrophy of the left ventricle. In the former the condition is stationary, and never ends in cardiac failure. In the latter the condition is progressive and the prognosis grave. The author believes that the former type of hypertension is due to a simple hyperactivity of the sympathetic nervous system and belongs to the group which includes nervous tachycardia, and is characterized by hypertension, tachycardia, a raised metabolic rate, and the absence of hormonal dysfunction; these symptoms occur either alone or in conjunction with one another. He is of the opinon that "hypertension sympathique solitaire" is a result of a functional disturbance of the vasomotor centre and the hypothetical centre which governs the basal metabolism. Tourniare states that the sole treatment required is that of progressive readaptation of the heart to effort, aided in severe cases by radiotherapy as used in nervous tachycardia. Rest, cardiac tonics, drugs for lowering the arterial tension, and sedatives for the sympathetic nervous system are all measures which the author condemns.

Surgery

88 Fibrocystic Disease and Hyperparathyroidism

J. BAUER and A. JUNG (*Rev. Chir.*, Paris, April, 1937, p. 284) report an interesting case of a woman of 34 years who complained of a violent pain in the right thigh and hip after a fall. A diagnosis of a neoplastic metastasis in the right femur was made radiologically, and radiotherapy was given with some success. Two years later there were similar pains in the left thigh, and both hips were treated by radiotherapy with no result. There was a history of an early fracture of the right radius which had left a deformity, although function was good. Menstruation had not begun until the age of 20, and had now ceased. The patient was married, but she had no children. Radiological examination showed a generalized osteoporosis and the presence of numerous areas of bone-absorption. These appearances suggested that the patient was suffering from generalized fibrocystic osteitis. Radiography showed the characteristics of fibrocystic disease, and laboratory tests confirmed this diagnosis. Although no parathyroid tumour could be seen or felt it was assumed that there was one, and operation revealed a large adenoma in the region of the right inferior thyroid artery, which was removed. Pain disappeared after operation, but a spontaneous fracture occurred in the left femur and was put up in extension. The day after the operation the sign of Chvostek was seen, first on the left side of the face, then on the right, and there was paraesthesia in the arms and leg. Gluconate of calcium was given intravenously and by the mouth. A typical attack of tetany developed, and there was a sudden alteration in the blood calcium content, which fell to 70 milligrammes the day after operation. Ammonium chloride was then given, and later a coffee of gluconate of calcium. The condition of the patient gradually improved and the fracture united satisfactorily. The authors consider that this case illustrates the influence of the parathyroid hormone on the osteoclastic resorption of bone.

89 Carcinoma of Vater's Ampulla

G. NEMÉNYI (*Zbl. Chir.*, June 5, 1937, p. 1337) describes a new operative technique for carcinoma of Vater's ampulla. He covers the stump of the pancreas with the descending part of the duodenum, the anterior wall of which remains attached to the horizontal inferior part of the duodenum in the form of a flap. In this way the pancreas is covered with a relatively mobile piece of intestine lined with peritoneum. Instead of the blind occlusion of the superior horizontal part of the duodenum combined with a posterior gastro-enterostomy, the author recommends an anastomosis between the horizontal superior part of the duodenum and the jejunum. The jejunal loop used for the anastomosis is also provided with a Braun's anastomosis in order to prevent a back-flow into the duodenal segment overlying the head of the pancreas, since this is likely to give rise to pancreatitis.

90 Enlarged Supraclavicular Glands

H. SCHNEIDER (*Med. Klinik*, May 21, 1937, p. 699) states that the presence of carcinomatous metastases in the left supraclavicular fossa from a primary tumour in the stomach, intestine, or uterus has been recognized since the time of Virchow. The glands are enlarged, painless, and firm; they lie superficially, and are easily moved under the skin. In Schneider's opinion they are uncommon, but they may be present when a primary carcinoma cannot be found clinically. In the presence of the glands the primary tumour is usually regarded as inoperable, but the author believes that such a decision is untenable. He cites cases in the literature and reports a case of his own in which primary carcinoma existed together with enlarged supraclavicular glands, which were not metastatic but tubercular. He suggests that in all cases a gland should be excised and examined histologically, so that an operable tumour may not be overlooked and the patient labelled as incurable. He points out that carcinoma and tuberculosis quite often coexist. In some cases carcinoma occurs in old healed tuberculous foci; in others metastatic and tubercular glands occur together; a new tuberculous lesion may be implanted on a carcinoma; and chronic tuberculosis and carcinoma do occur together.

91 Embolism after Injecting Varicose Veins

A. WESTERBORN (*Acta chir. scand.*, May 1, 1937, p. 321) calculates that, between 1927 and 1934, in all the ninety-three Swedish hospitals about 30,000 patients were given intravenous injections for the treatment of varicose veins. There were eleven deaths from pulmonary embolism, of which six were verified at necropsy. There were also six cases of pulmonary embolism with recovery. The mortality was therefore 0.036 per cent., or, if two of the doubtful fatalities be excluded, 0.03 per cent. For the purpose of comparison the author has collected from eighty-two Swedish hospitals the records of 6,994 operations for varicose veins from 1921 to 1925; this length of time was chosen because it approached most closely to the subsequent injection period. There were eighteen deaths from pulmonary embolism, making the post-operative mortality from embolism 0.26 per cent. The author has correlated the fatal and non-fatal cases in his own material and in the world literature with the various drugs injected, and he has not found any significant relationship between the type of solution employed and the incidence of embolism. This may be due, however, to the fact that the emboli in question were derived from secondary coagulation thrombi and not from the original injection thrombus; in none of the author's six cases coming to necropsy had the original injection thrombus become detached. He traces post-injection pulmonary embolism to an infection, either local or general, to defective circulation, and to an individual predisposition to thrombus formation. Old age is also an important factor; all the author's patients were over 45. The influence of a defective circulation is increased by immobilization, and so he advises that patients should be kept out of bed as much as possible after an injection.

92 Painful Calcanean Spur

H. SPITZY (*Münch med. Wschr.*, May 21, 1937, p. 807) reports the results of a simple surgical operation carried out in seventy cases of painful calcanean spur. He considers that the pain is mainly due to traction by muscles and fasciae, and only partly to the pressure caused by the weight of the body on the foot. He therefore cuts through the muscles and fasciae at their point of attachment to the spur by means of a tenotome. The technique, which is very simple, is described in detail. Approximately two-thirds of the patients treated in this way were cured; nine cases came back with other complaints, such as flat-foot, arthritis of the foot, etc.; and in two cases the operation failed.

Therapeutics

93 Gold Salts in Chronic Carditis

M. WYBAUW (*Scalpel*, Liége, June 12, 1937, p. 749) gives a detailed report of eleven cases of chronic progressive carditis in adults in which treatment by gold salts was given with good results. The majority of cases occurred in women, and there was often a family record of tuberculosis or rheumatism. The onset of the cardiac lesion was due to varying causes such as angina, pleurisy, pleuropneumonia, or rheumatism. In some instances no such cause could be traced, and the patients had previously been in good health. The symptoms were loss of weight, anorexia, profuse sweating, and muscular asthenia. Acute cardiac pain was common and was paroxysmal, while palpitations and dyspnoea were usually present. Diagnosis of the simple forms of infective endocarditis may be uncertain, but radiology and electrocardiography are indispensable in determining the degree of myocarditis and in demonstrating the condition of the heart muscle. The laboratory tests were also of diagnostic value, and showed the sedimentation rate to be increased, while leucocytosis, lymphocytosis, and eosinophilia were generally present. In the eleven cases reported myochrysine was given in eight instances, oleochrysine in three, allochrysine in one, and both oleochrysine and myochrysine in another case. The immediate results were successful, and the general condition of the patients improved. Cardiac function was better, pain was relieved, and the dyspnoea was diminished. Treatment appeared to have arrested the development of the disease, although it did not cure it. In many cases improvement continued, although the end-results of the treatment have yet to be estimated. Particulars of the dosage and the general treatment are given.

94 Acute Osteomyelitis

G. BAGGIO (*Rif. med.*, May 29, 1937, p. 779) reviews the literature and records eleven cases of osteomyelitis affecting the femur, tibia, scapula, rib, or ilium in which no operation was performed, and there was only one death. Cardiac stimulants were administered, an early assimilated diet was given, and the affected part was immobilized and continuously treated with hot fomentations. In all but the single fatal case the acute inflammation subsided spontaneously either by the evacuation of an enormous quantity of pus through the skin or by absorption. While admitting that his cases are few in number and that further investigation is desirable, Baggio maintains that osteomyelitis may be cured in the acute stage without any surgical operation.

Ophthalmology

95 Aetiology of Squint

A. BIELSCHOWSKY (*Amer. J. Ophthal.*, May, 1937, p. 478) points out that there is still no satisfactory explanation squint, instancing the frequent failure of Donder's accommodative theory. Three factors form a basis of investigation: (1) mechanical factors, (2) excessive innervation, and (3) a combination of both. Each may produce a periodic squint, but it is only in the presence of a weak fusion faculty that this condition becomes permanent. Of normal persons 80 per cent. have a latent squint, which may develop if the fusion faculty is suspended. Prolonged excessive innervation or mechanical factors may result in secondary changes in the muscles. Ocular torticollis is due to trochlear paresis, congenital or acquired, or to an anomalous insertion of the internal rectus. The author stresses the importance of heredity; the parents do not necessarily show a visible squint, but there are neuropathic tendencies. Failure to obtain binocular vision after operation or training may be due to horror fusionis or aniseikonia.

96 Uveitis

A. L. BROWN (*Amer. J. Ophthal.*, June, 1937, p. 583) has used typhoid H antigen intravenously, together with paracentesis, with good results in the treatment of all forms of uveitis except the syphilitic or tuberculous types. Acute affections of the uveal tract responded best. Probably the antibodies present in the eye interfere with the activator as it reaches the uvea, or they unite with available receptors and render the activators inert. The same treatment has been used as a prophylactic against sympathetic ophthalmia in cases of traumatic laceration of the ciliary body.

97 Pathogenesis of Acute Glaucoma

A. BRAV (*Med. Rec.*, June 2, 1937, p. 447) is dissatisfied with most of the theories advanced on this subject. He believes that acute glaucoma is caused by increasing pressure on Schlemm's canal from hypertrophy of the ciliary processes. The proper use of optical corrections, which had been prescribed first before the age when prodromal symptoms might be expected, would prevent the onset of this condition. Eserine, by pulling upon the ciliary body, and iridectomy, by producing a cyclodialysis, both release pressure on the canal of Schlemm.

98 Spasmodic Retraction of the Upper Lid

J. VOISIN (*Arch. Ophthal.*, Paris, May, 1937, p. 391) distinguishes between an enlarged palpebral fissure which is self-evident and that elicited on examination of the muscular movements. The term "retraction" should be reserved for the former class, of which a special section is here considered. The retraction is usually slight, exposing a little sclera above the cornea. It is seen in many cases allied to Graves's disease, in irritation of the cervical sympathetic, and some dental affections, and as a sequel to encephalitis, cerebral lesions, cerebral tumour, hydrocephalus, and syphilis. It may be brought about by a hypertony of the smooth or the striated muscle actuating the upper lid, and may be due to a process of decerebration or to an irritation.

99 Fundus Lesions in Polycythaemia

M. COHEN (*Arch. Ophthal.*, Chicago, May, 1937, p. 811) differentiates primary polycythaemia from the secondary type due to congenital heart disease, emphysema, stenosis of the pulmonary artery, and dehydration of the tissues, and from the hypertonic type which is associated with arteriosclerosis and cardiac and renal disease. The associated cyanosis of the retina is only visible in the main blood vessels, the condition of the rest of the fundus being obscured, except in albinos, by its pigmentation. Sometimes the cyanosis is most marked in the physiological cup. Any lesion of the fundus is due to venous stasis; there were no lesions in the cases of secondary polycythaemia in the author's series. He reports oedema of the disk, retinal haemorrhages, white lines along the veins, and venous thrombosis. The prognosis depends upon the severity of the disease in the primary, and of the exciting condition in the secondary, type. In the former venesection, phenylhydrazine, and irradiation are helpful: in the latter the causative disease must be attacked.

Obstetrics and Gynaecology

100 Lightening

RUDOLF (*Surg. Gynec. Obstet.*, May, 1937, p. 906) discusses the phenomenon of lightening during the last weeks of pregnancy. He suggests five mechanisms by which the presenting part might descend into the pelvis. The first is the formation of the lower uterine segment, which is progressively demonstrable in frozen sections from the second month to term, and clinically recognizable as Hegar's sign. The measurements compare fairly accurately with those taken at Caesarean section. At the thirty-sixth week the lower uterine segment relaxes so as to accommodate the descent of the presenting part in response to intra-abdominal pressure. Relaxation is shown by the flattening of the cervix and the shortening of the distance between cervix and fundus. Nevertheless, lightening is sometimes experienced even though the head remains high. The second mechanism is the relaxation of the soft parts, due possibly to "relaxin," though this has not yet been demonstrated in the human female. When the cervix shows no appreciable descent and the foetal head is high but can be pressed into the pelvis relaxation has failed to take place; this abnormality is functional, not mechanical. Mobility of the posterior attachments is the third mechanism. The yielding of the muscle fibres in the posterior ligaments allows for the noticeable increase of anteflexion and anteversion, the anterior attachments providing a pivot. After labour has begun the posterior wall has to be pulled up to the level of the anterior attachments. This is made possible by a further yielding of the utero-sacral ligaments and an equal dilatation of the lower segment, together with the straightening of the birth canal. The fourth mechanism is the relaxation of the abdominal muscles, which occurs gradually or suddenly, as, for example, after a meal. The author suggests that the stimulus comes from pressure of the descending part upon the uterus or intrapelvic soft tissues, by way of the segmental reflex arcs which innervate the abdominal muscles, and the sensory influences which keep them at a lower tone than usual. The last mechanism is the cephalo-pelvic relation, which is mechanical and, if faulty, can be diagnosed by inability to press the presenting part into the brim. This demonstration of the sequence of the vertical changes in the three portions of the uterus shows the purpose of the phenomenon of "lightening" to be preparatory to labour and its value as a clinical guide.

101 Intravaginal X-Ray Treatment

F. ERICHSEN (*Zbl. Gynak.*, June 5, 1937, p. 1330) is satisfied that he has had better results in the treatment of inoperable cervical carcinoma since he introduced six years ago a supplementary x-ray treatment by a Schaefer-Witte tube introduced into the vagina. Primary parametrial or secondary pelvic wall deposits are thus more accessible, and in contrast to radium treatment the use of a very high irradiation dosage is compatible with the protection of neighbouring healthy tissues. The general scheme of treatment is: (1) radium, 4,000 to 5,000 milli-

gramme-hours being given; (2) percutaneous *x*-radiation, 1,800 *r* being applied from four to six front, back, and side fields, and 800 *r* from a perineal field; this is alternated with (3) 1,600 to 2,000 *r* at a depth of 5 cm. directed to the right and left pelvic walls from the intravaginal water-cooled tube. Increase beyond the last-named dose is useless if not harmful, and the whole treatment occupies about forty days. Disturbances of rectal and vesical function may follow, but no fistulae developed; the lateral vaginal walls showed transitory appearances of membranous inflammation. In inoperable (Groups III and IV) patients thus treated, 38 per cent. were living and symptom-free from one and a half to four years later, as well as three out of twelve patients who were treated for local recurrences.

102 Endometrioma

ROCMANS and PETITFRERE (*Brux. méd.*, May 2, 1937, p. 1001) define an endometrioma as a tumour which possesses the characteristics of endometrium but which occupies an abnormal position. It occurs most often in young women and may be situated in various regions. Two cases are reported, in one of which the tumour was on the upper part of the broad ligament and in the other it was adherent to the recto-vaginal septum. In the first case the patient had suffered from pain in the right iliac fossa for four years. This pain, which radiated to the right hip and the lumbar region, became severe enough to necessitate operation. A tumour the size of a large nut was removed from the broad ligament, and was found on microscopical examination to have the characteristics of an endometrioma. In the second case the patient had complained of indigestion for three years, particularly at her menstrual periods, with vomiting and lumbar pain. Appendicectomy, together with the removal of the left adnexa, was carried out, and a small cystic nodule was felt in the pouch of Douglas but was not removed owing to adhesions. A year later this tumour had grown and was adherent to the posterior vaginal wall and the adjacent tissues. There were symptoms of tenesmus and some menstrual irregularity. A posterior colpotomy was performed, which gave access to the tumour. It was found to be an endometrioma, but was too adherent to be removed. Two tubes of radium were inserted, and a month later menstruation became normal, the symptoms disappeared, and the size of the tumour began to decrease. The origin of these tumours is discussed and the various theories which have been put forward are considered. The method of treatment must vary according to the localization and fixity of the tumour, the age of the patient, and the risk of injuring the reproductive organs.

Pathology

103 Simple Blood Sedimentation Test

STEIGER (*Münch. med. Wschr.*, June 11, 1937, p. 939) points out that the blood sedimentation test has proved its value in the discovery of pathological processes even when there is no clinical evidence. Its technical difficulties according to the standard methods are great, and the test cannot be performed in practice. He suggests a simple modification which gives fairly accurate results. An ordinary blood pipette graduated up to 100 mm. is used. Sodium citrate solution, 3.8 per cent., is drawn up to the 25 mm. mark and then blown on to a watch glass. The patient's finger is cleansed with ether and blood taken with a needle. The blood is drawn into the pipette up to the 80 mm. mark and then mixed with the citrate solution by blowing it in and drawing it up again into the pipette. When the blood has been thoroughly mixed with the citrate solution it is drawn up to the 100 mm. mark; a small bubble of air is allowed to remain at the tip of the pipette, and the end is sealed with candle grease or collodion. It is then hung up and the sedimentation value read off at the end of an hour. A fall of 10 mm. is normal, of 20 mm. increased, and a greater fall is pathological. The advantages of this method are that it can be performed quickly in any surgery during the routine examination of the blood, it requires no elaborate preparation, is accurate in its results, and can be used frequently during the course of an illness to estimate prognosis.

104 Weil-Felix Reaction

A. P. DE RODA (*J. Philipp. Isl. med. Ass.*, 1937, **17**, 147) has made some interesting observations on the frequency of Weil-Felix reactions in the Philippines. Blood serum from 500 febrile cases was tested against *Proteus* OX 19, OX 2, and OX *K*. Altogether 256 sera agglutinated one or more strains in a titre of 1 in 100 or over. Of these, 209 (82 per cent.) reacted at 1 in 100 to 1 in 200, while forty-seven (18 per cent.) reacted at a titre of 1 in 500 or over. The highest titre observed was 1 in 5,000. Most of the cases had been diagnosed clinically as typhoid fever or influenza. The author regards those sera agglutinating at 1 in 500 or over as coming from undoubted cases of typhus fever. A considerable proportion of sera agglutinated more than one type of *Proteus* X. Thus, of the forty-seven sera agglutinating one organism to 1 in 500 or over, ten agglutinated OX 19 only, two OX 2 only, twelve OX *K* only, fifteen OX 19 and OX 2, four OX 2 and OX *K*, and four OX 19, OX 2, and OX *K*, the titre to the second or third organism being 1 in 100 or over. Of the forty-seven typhus cases, thirty agglutinated *B. typhosum* to a titre of 1 in 50 or over. These findings are of importance in showing (1) the existence of previously unrecognized typhus fever in the Philippines, (2) the high titre required in the Weil-Felix reaction before a positive diagnosis could be made, and (3) the frequency with which more than one type of *Proteus* X was agglutinated. The typhus fever, it may be added, was of a benign type; only three of the forty-seven cases died.

105 Diabetes Insipidus

G. MONASTERIO and M. LUCARELLI (*Rass. Fisiopat. clin. terap.*, April, 1937, p. 205) record their observations on four cases of diabetes insipidus in patients aged from 18 to 47. Besides some considerable changes in the metabolism of water and salts, which are characteristic of the disease, a disturbance of the glucose regulation, occasionally of the lipoid exchange, and rarely of the energy exchange, may take place. The functional disturbance of the diencephalo-pituitary system is not limited to the regulation of the hydrosaline exchange, but it may also involve the regulation of other exchanges, especially that of glucose. The assemblage, in a very narrow space, of the centres regulating the various exchanges and of the secretion of the different hormones from a single gland, the hypothesis, so closely connected anatomically and functionally with the diencephalon, account for the fact that the disturbances of the exchanges in diencephalo-pituitary syndromes are usually more or less complex.

106 Kahn and Meinicke Reactions

A. S. AZZI and A. DEL FRADE (*Arch. Soc. Estud. clin. Habana*, March, 1937, p. 187) made a study of the relative sensitiveness of the Kahn (standard), Meinicke (M.K.R.II) and Sellek Frade modification of Meinicke's test in 100 congenital syphilitic children. Positive results were obtained in 19 per cent. of the Kahn tests, in 19 per cent. of the Meinicke tests, and in 95 per cent. of the Sellek Frade modification of the Meinicke test. In seventeen cases concordant results were obtained with all the tests. Of the seventy-seven cases in which the Sellek Frade reaction was positive, forty-three showed probable evidence of syphilis, while the remaining thirty-four were apparently normal. This is perhaps due to the fact that congenital syphilis in Cuban children at the present time is of an attenuated character, and the severe forms described in the textbooks are rare.

patient's respiration becomes regular and deep. This is misleading to a beginner, who may imagine that it indicates the automatic breathing characteristic of the third stage of anaesthesia already described. The only reliable guide to the onset of anaesthesia is the change in respiration to irregularity and/or stertor—a change which is certain to take place if air leaks are absent. The operation may be started at this point, and thereafter the anaesthetist alternates between "air" and "rebreathing" in such proportion as to avoid the convulsive bilateral twitching which indicates a commencing jactitation on the one hand and purposeful reflex movements on the other. Slight cyanosis is usual when anaesthesia has become established, but depends upon the type of patient. An anaemic girl may actually jactitate without any colour change; while a plethoric alcoholic may be almost black before reaching the stage of unconsciousness. The eye signs, although usually stressed, are so variable that in my opinion they are best ignored. The blood pressure is always raised during the administration of gas and air owing to the inevitable partial asphyxia which accompanies it.

Nitrous Oxide and Oxygen

The induction of anaesthesia is effected with pure gas until just before the "end-point" previously described. Oxygen is then added to the gas in accordance with the requirements of the individual patient. It must be realized that some degree of anoxaemia will be present in the normal subject unless fairly heavy premedication or basal narcosis has been used. When this is the case, however, it should be possible to keep most patients at a continuous level of quiet anaesthesia with little or no cyanosis. Opinions differ as to whether a slight degree of cyanosis is detrimental to patients with a normal haemoglobin value provided that the airway is clear. Respiration is fairly deep with the usual technique of partial rebreathing, but if complete rebreathing with CO_2 absorption is adopted respiration resembles that of natural sleep, and a very perfect anaesthesia can be secured. The corneal reflex will be brisk throughout the administration, and the blood pressure will be either normal or slightly raised if appreciable anoxaemia is present. Complete muscular relaxation cannot be obtained with pure nitrous oxide and oxygen unless some type of local analgesia is added or recourse is had to "secondary saturation." The latter technique will not be described here as it is unsuitable for the general practitioner, and necessitates an apparatus capable of inflating the lungs instantly with oxygen under pressure.

It must be realized that there is a very narrow margin with pure gas and oxygen, and a mixture which is slightly too rich or too poor in oxygen will eventually cause retching or actual vomiting. The beginner will find that he requires the help of a small quantity of ether added to the gases, but as his experience increases this necessity diminishes, with consequent benefit to the patient. If complete muscular relaxation is imperative sufficient ether is added to secure it, in which case the patient will show the signs of a semi-closed ether narcosis.

Ethylene and Acetylene

Ethylene-oxygen anaesthesia resembles nitrous-oxide-oxygen anaesthesia except that muscular relaxation is better and a rather higher percentage of oxygen can be used. The same remarks apply to acetylene. Since these gases are seldom employed for anaesthesia in Great Britain they will not be discussed further.

Cyclopropane

Owing to its high cost cyclopropane is always given by the closed-circuit technique, quite a simple apparatus being adequate. This gas is an extremely potent anaesthetic, and approximately 85 per cent. oxygen can be administered. Good relaxation can be obtained with this mixture, so that cyanosis should never occur. The second stage of anaesthesia is usually unnoticeable, the induction being rapid and smooth. Since cyclopropane causes no irritation and is a respiratory depressant it is easy for the inexperienced anaesthetist to give an overdose. In this case the breathing becomes imperceptible, but a few compressions of the rebreathing bag and the addition of oxygen soon restores normal rhythm. The blood pressure usually rises, and vascular oozing from the skin and superficial tissues is increased. A careful watch should be kept on the pulse, and if there is a pronounced degree of bradycardia, tachycardia, or arrhythmia the gas concentration should immediately be reduced.

Ethyl Chloride

Ethyl chloride is usually employed as a "single-dose" anaesthetic of short duration for children, and may be given by the open or closed methods. Although the child may show apparently little change for the first few moments, actually the induction of anaesthesia is extremely rapid, and the third stage may be reached within a few seconds of the cessation of talking or moving. Muscular spasm, particularly laryngeal and masseteric, may be marked in the second stage, especially if air is limited, as in the closed technique. In order to prevent clenching of the jaw an oral prop should be inserted before administration. Directly respiration becomes quiet and regular the mask should be removed, and a variable period of anaesthesia will ensue. It is possible to supplement the dose of ethyl chloride from time to time, but it is difficult to maintain an even level of anaesthesia for long, and it is extremely easy to give an overdose.

Open ethyl chloride is also useful to induce anaesthesia in children, a change-over to ether being made directly respiration becomes quiet or stertorous. Ether must be used freely at this stage, or the child will come round from the one drug before being anaesthetized with the other, in which case there will probably be coughing.

Di-vinyl Ether

Di-vinyl ether is extremely volatile, and is best given with oxygen in a closed inhaler or added in minute amounts to mixtures of nitrous oxide and oxygen. Induction is rapid, and the drug differs from di-ethyl ether in being about four times as potent, less irritating to the respiratory passages, and less likely to cause nausea and vomiting. Muscular relaxation is variable, but usually good.

Di-ethyl Ether

Induction of anaesthesia with open ether is a lengthy and trying procedure for both patient and anaesthetist. The closed and semi-closed methods, using the expired carbon dioxide to stimulate respiration, reduce the induction period considerably, especially if nitrous oxide or ethyl chloride is administered at the beginning. Even so, the second stage is apt to be marked, particularly in robust and alcoholic males. When the plane of surgical anaesthesia is established with open ether respiration becomes quiet and rather deep, the colour is pink, and the blood pressure slightly raised. Salivation and the secretion of mucus may be troublesome unless an adequate dose of

atropine or scopolamine has been given at least half an hour before induction. If good relaxation is essential the anaesthesia must be progressively deepened until the laryngeal muscles are paralysed, unless previous cocainization has been performed. After this level is reached the anaesthesia can usually be lightened appreciably. Although there is a large margin of safety with di-ethyl ether it causes an appreciable metabolic upset, as shown by raised blood-sugar and blood-urea values and post-operative albuminuria.

Two curious manifestations are occasionally seen during ether narcosis. A mild and innocuous tremor may occur during the initial stages. This generally disappears as anaesthesia becomes deeper. The more serious ether spasm is as a rule confined to the stage of deep narcosis and begins in the face muscles, ending as generalized epileptiform convulsions. The cause remains obscure, and if the usual remedies fail to stop the twitching, calcium gluconate should be injected intravenously.

Chloroform

Some degree of analgesia is common in the first stage of chloroform narcosis; the second stage is not so marked as that of ether, and there is less tendency to laryngeal spasm. The danger period of primary cardiac failure has been proved to be at the end of the second stage, just before full surgical anaesthesia is reached. A "pre-fibrillation phase" can often be demonstrated at this point by the electrocardiograph. For some imperfectly understood reason there appears to be little risk of primary cardiac failure in parturient women. Since chloroform is a respiratory depressant and does not appreciably irritate the air passages, the third stage is marked by quiet and shallow respiration. Salivation is usually absent and muscular relaxation is excellent. The blood pressure is somewhat lowered. The pupil is small and tends to become larger and inactive in overdose, while it becomes larger and active with a positive corneal reflex if anaesthesia gets lighter. The movement of swallowing may accompany these signs. The margin of safety is much smaller than with ether, but in true overdose the respiration fails first and allows time for restorative measures to take effect before secondary cardiac failure develops. Chloroform is an extremely toxic drug, and can cause grave metabolic changes. Chloroform-ether mixtures will cause deeper respiration in proportion to the amount of ether present, but it should be noted that they give no immunity from the risk of primary cardiac failure.

CHEAP MILK FOR MOTHERS AND CHILDREN

DEPUTATION TO MINISTRY OF HEALTH

SIR KINGSLEY WOOD, who was accompanied by Mr. ROBERT BERNAYS, Parliamentary Secretary to the Ministry of Health, received on July 27 a deputation from the Children's Minimum Council to urge that milk should be provided for nursing and expectant mothers and children under school age of working-class families at 1½d. a pint, and that the milk should be free where the family income fell below a scale to be determined by the Ministry. This "positive milk policy" was referred to in a leading article in the *British Medical Journal* of July 17 (p. 121).

Policy of Children's Minimum Council

MISS ELEANOR RATHBONE, M.P., introducing the deputation, said that it was supported by twenty-nine societies, including nearly all those working for child welfare. Health authorities were unanimous as to the great need for increased milk drinking, especially by mothers and young children. The great obstacle was the high price of milk. The deputation proposed that the cheapened supply asked for should be secured by diverting some of the milk now sold for manufacturing purposes at about 5½d. a gallon. Producers and distributors should be asked to supply milk under the scheme at a lower price than that now charged in the retail trade. The remaining deficit should be covered by a subsidy which, on a basis admittedly hypothetical, might amount to about £1,600,000 per annum. The Minister was reminded that a scheme roughly on these lines had been submitted three years previously, but though sympathetic consideration was promised no practical advance had been made.

Mr. C. S. ORWIN, Director of the Agricultural Economics Research Institute of Oxford, said that the recent survey issued by his institute had been quoted as belittling the probable effects on consumption of a reduction in price. The survey showed that the price of milk was of great importance, but also that ignorance of its food value and prejudice were deterrent factors. A propagandist and educational campaign was most important and should therefore accompany any scheme for a supply of cheap milk.

The Minister's Reply

Sir KINGSLEY WOOD said in reply that he was in full agreement with the main objects and the general aim of the deputation. The Government's general policy was to ensure a maximum supply of milk for the consumer consistent with a reasonable remuneration to the producer, to improve the purity of the milk supply and also to continue and, where practicable, extend their policy of increased consumption of milk among those sections of the population for whom it was of particular value.

Milk was one of the most valuable of human foods, particularly in the diet of mothers and young children. It was largely on that account that the milk-in-schools scheme had been inaugurated, and it was satisfactory that over two and a half million children were participating in it to-day. Sir Kingsley Wood said in pursuance of this policy he had recently called the attention of local authorities to the recent report of the Advisory Committee on Nutrition, and particularly to its recommendations as to the nutritional value of milk. They had been requested to review their arrangements for the supply of milk and food to expectant and nursing mothers and young children, and their special attention had also been drawn to the importance of a sufficient supply of milk being made available throughout pregnancy and for children up to the age at which they entered school. The authorities were responding to these suggestions, and a number were already extending their provisions. It was to be noted that at the beginning of 1937 406 of the 418 maternity and child welfare authorities in England and Wales were supplying milk either free or at less than cost price in necessitous cases to expectant mothers, 406 to nursing mothers, and 404 to children under 5 years of age. Closer supervision of the nutrition of children was also being secured by the provision of more nursery schools and nursery classes.

Under the recent revision of the Government grants to local authorities increased money had been made available to them for the improvement of their services, those whose needs were the greatest receiving increased assistance from the extra five million pounds which was now available. The Minister also desired to add that he attached the greatest importance to an improvement in the safety and cleanliness of the milk supply. The question of further schemes for the supply of milk, either free or at a reduced price for mothers and young children, had been under active consideration by the Government in connexion with its long-term milk policy. He could not anticipate any statement that would be made to Parliament, but he could say that the Minister of Agriculture and Fisheries still hoped that it would be possible to make a statement before Parliament rose for the recess.

ONE HUNDRED AND FIFTH ANNUAL MEETING

of the

British Medical Association

HELD IN BELFAST, JULY, 1937

THE SECTIONS

SUMMARY OF PROCEEDINGS

During the next few months there will be published in the BRITISH MEDICAL JOURNAL *the opening papers communicated to the Scientific Sections of the Annual Meeting at Belfast. The reports of discussions, continued from last week (p. 240), are intended to give members who were not present a general idea of the proceedings.*

SECTION OF MEDICINE

Thursday, July 22

Cholecystitis

With the President, Professor W. W. D. THOMSON, in the chair, a discussion on cholecystitis was opened by Professor J. W. MCNEE, who claimed that disease of the gall-bladder was the commonest of all organic troubles of the digestive tract. Piersol of Philadelphia had found that gall-bladder disease was diagnosed in 16.3 per cent. of patients admitted to a gastro-enterological clinic. Cholecystitis was by no means confined to middle-aged women who had borne children, but might occur in young men and women, and even children. A sedentary occupation causing biliary stasis undoubtedly conduced to infection, which would be due usually to streptococci, coliform organisms, or occasionally *B. welchii*. From a diagnostic standpoint the opener was concerned essentially with catarrhal cholecystitis. He felt that a history of flatulent dyspepsia, even without abdominal pain or tenderness, was significant; but he considered that *x*-ray evidence was an unreliable basis upon which to found a diagnosis in early cases. On the other hand duodenal intubation was a method of great importance; failure with this method was sometimes due to the use of the wrong type of tube, and to inexperience; properly used, it was often the only certain means of establishing the diagnosis. Professor McNee held that medical drainage of the gall-bladder could be secured by the administration of small quantities of concentrated magnesium sulphate solution before breakfast. He did not think that restriction in diet was advisable, apart from the prohibition of cooked fat and fried foods, which often aggravated the flatulent dyspepsia.

Sir ARTHUR HURST emphasized the frequency of gall-bladder disease by stating that as many patients were treated for this at New Lodge in the last ten years as were treated for gastric and duodenal ulcers combined. He was convinced that infection of the gall-bladder arose through ascending infection of the bile duct; such a method of infection would be favoured in any condition, such as gastric influenza or food poisoning, that produced temporary achlorhydria and consequently a multiplication of bacteria in the duodenum; in pregnancy achlorhydria was not uncommon, and the association with cholecystitis was well known. Sir Arthur stressed Murphy's sign as an important diagnostic test, and he shared Professor McNee's view that the cholecystogram might give little help in certain cases of catarrhal cholecystitis. He insisted that examination of the bile in suspected gall-bladder disease was as important as examination of the urine in investigating renal conditions. Bile from a morbid gall-bladder would contain excess of mucus, while microscopical examination would reveal columnar cells in groups and leucocytes in the more severe infections; pigment granules and lipoid globules might be seen, and the presence of large but broken cholesterol crystals was pathognomonic of cholecystitis. Culture revealed *B. coli* most frequently. On treatment, the speaker quoted Venables's results, which showed that the bile flow produced by oral magnesium sulphate was almost as great as that by intubation; besides magnesium sulphate on waking, he advised the administration of a tablespoonful of olive oil before each meal, and the use of hexamine in doses of 100 grains t.d.s., the urine being previously rendered alkaline and kept so during the treatment, which should continue for six weeks.

Sir DAVID WILKIE (Edinburgh) doubted whether data founded on culture of bile could be accepted. He considered that cholecystitis was a "slow, indolent, intramural, blood-borne infection"; at operations he had taken cultures from the bile, the wall of the gall-bladder, and the cystic gland, and had found streptococci in many cases, but *B. coli* in few. The indications for surgery were: (1) repeated biliary colic; (2) colic with continuing dyspeptic symptoms; (3) acute obstructive cholecystitis; (4) the suspicion that *B. welchii* infection was present; (5) gall-bladder disease at later ages; (6) stone in the common duct; and (7) when the gall-bladder was a probable septic focus for some other condition. His mortality statistics from operations for cholecystectomy and cholecystostomy were below 2 per cent. and 5 per cent. respectively. In referring to findings at operation, Sir David mentioned the frequency of associated gall-bladder disease and duodenal ulcer.

Radiology of the Gall-bladder

Dr. T. GARRATT HARDMAN (Dublin) referred to cholecystography as an outstanding advance in the diagnosis of gall-bladder disease; he did not consider the test was infallible, but with care in administration and radiological technique it was possible to make correct inferences in a high proportion of cases. It was necessary to make a complete *x*-ray investigation of the alimentary tract whenever clinical findings were at variance with those of cholecystography. This method was not only of help in diagnosing inflammation of the gall-bladder but also in determining the presence of stones, and sometimes benign or malignant growths. *X* rays might be proved fallacious when a normal picture was followed by the discovery of a pathological organ at operation; occasionally no filling was obtained, and yet a healthy gall-bladder was found at laparotomy. This might be due to deficient liver function, rapid emptying of the gall-bladder, failing of absorption of the dye, or vomiting soon after taking dye. In Dr. Hardman's experience confirmation of radiological inferences had been forthcoming in 88 per cent. of cases.

Cardiac Pain in Gall-bladder Subjects

Dr. CHARLES MILLER described the clinical syndromes in which cardiac pain might be associated with gall-bladder lesions. A sense of dying was sometimes experienced in cases of distension of the gall-bladder, and this symptom, as well as recurring anginal pain, might be relieved by suitable operation. He had made a study of the morbid anatomy of the cardiovascular system in patients suffering from non-malignant gall-bladder disease. Statistical examination of his figures had shown that there was a special liability for the subjects of gall-bladder disease between the ages of 50 and 60 to suffer cardiovascular degeneration, while for males alone the same was true between the ages of 40 and 70.

DR GEORGE BATTEN commented on the number of patients with gall-bladder disease who remained symptomless for many years. He also asked what treatment should be adopted when stones and symptoms due to them recurred after operation. DR. JOHNSTON (Westmorland) felt that his experience had brought him more and more in favour of surgery, and he described some cases bearing on operative treatment. DR. G. E. NESBITT (East London, S. Africa) agreed that intubation had its difficulties, and inquired regarding matters of technique. He threw doubt on the relation of the gall-bladder to cardiac symptoms, and also on the connexion between cholecystitis and migraine.

DR HAROLD COOKSON (Bournemouth) considered that there was less shock in acute gall-bladder syndromes than in coronary thrombosis, and that in the former group the pain might disappear suddenly. Possibly there was a reflex mechanism connecting the gall-bladder and the heart analogous to the coronary constriction that might occur in pulmonary embolism. DR. L. E. ACOMB (Newport, Mon.) mentioned the diagnostic importance of scapular pain, particularly if it was aggravated by stooping. He was rather doubtful about the value of radiology. DR. N. E. WAYFIELD (Great Bookham) considered that pain in the region of the liver might be due to transient hepatitis from the ingestion of fat foods. DR. CRAIG asked how *B. welchii* infection might be suspected before operation.

DR. J. S. MCKELVEY (Saintfield, Co. Down) commented on the frequency of gall-bladder trouble in the young, who were inclined to hurry their meals and eat too much. Belladonna and hydrated magnesia formed a good combination. DR. E. R. CULLINAN agreed that duodenal intubation was most important for diagnosis. As to the association with migraine, he thought it was doubtful whether this or cholecystitis was the primary trouble. Very often attention to the gall-bladder would bring relief from migrainous attacks.

SIR DAVID WILKIE answered several questions that had been put. Although a single stone in the common duct was associated with jaundice, multiple stones might not be. He thought that so-called bilious attacks had nothing to do with the gall-bladder.

PROFESSOR MCNEE, in conclusion, mentioned that the end of the duodenal tube should be pyriform in shape, with the blunt end foremost. The diversity of opinion regarding the infecting organism might possibly be due to the stage at which cases were being investigated. Perhaps coliform organisms related more to early infections. He thought that there were no medical remedies equal to magnesium sulphate and olive oil, and he still felt sceptical as to the value of hexamine.

SECTION OF SURGERY

Thursday, July 22

Preceding the main discussion a series of short papers were read.

Duodenal Regurgitation

PROFESSOR J. R. BRAITHWAITE (Leeds) enlarged on some points in duodenal regurgitation. He said that while physiologists had noted and investigated bile regurgitation they had done little in regard to pancreatic juice, which probably formed 80 per cent. of the regurgitant fluid. Gastroscopy was proving beyond doubt not only that duodenal regurgitation did occur, but that it was more frequent and copious than had been supposed. Bile represented only 10 per cent. of the fluid, the chief constituent being pancreatic. He was obsessed with a theory that regulation of bile might have beneficial effects on [illegible] and had at times performed cholecystduodenostomy in these cases. The results had been gratifying, but in many cases recurrence had taken place after eighteen months, when the anastomosis had been found to be closed. Re-anastomosis was as successful. If he could rely on a patent anastomosis he would advocate the operation for duodenal ulcer without stenosis, but, because of the incidence of carcinoma, he advocated partial gastrectomy for gastric ulcer. He had been talking about an operation in which bile regurgitation only was employed; he had not had the courage to divide the duodeno-jejunal junction, close both ends, and perform a posterior gastro-enterostomy, the only procedure which would allow complete duodenal regurgitation. In conclusion Professor Braithwaite asserted that duodenal regurgitation could no longer be considered an accidental phenomenon, but was well worthy of serious and widespread investigation.

Treatment of Severe Burns

PROFESSOR A. K. HENRY spoke on factors in the successful treatment of severe burns based upon findings at the Kasr-el-Aini Hospital, Cairo. Regarding the basic treatment as the application of a 5 per cent. aqueous solution of tannic acid, he emphasized the necessity of cleaning the surrounding healthy skin; otherwise sepsis often appeared at the edges of the crust. He employed a 1 per cent. solution of brilliant green in 30 per cent. alcohol, but owing to the rate of retraction of the crust, even within an hour or two, it was necessary to repaint frequently. In the treatment of the associated shock he had at one time waited for sufficient improvement before instituting the local tannic acid treatment. So many had died that, wearying of this attitude, he had set a limit of one hour. Whatever the state then the tannic acid was applied, and he had had the satisfaction of seeing many patients recover who otherwise, he was sure, would have died. In regard to the toxaemia of burns, it had been found that the blood in some of these cases contained four times the normal amount of histamine and that this increase did not occur till the fourth day after the accident, the most dangerous period where initial treatment has been successful. He associated the histamine increase with the increase of acid in the gastric juice. Massive doses of soluble alkali had given strikingly good results.

Steinach Operation for Prostatic Symptoms

MR. J. G. YATES BELL, in a paper upon the Steinach operation for the relief of prostatic symptoms, said that Niehans had ligatured the vasa efferentia between the testis and epididymis and claimed to produce an increase of the internal secretion of the testis and a diminution in prostatic hypertrophy. The theories underlying were: first, as claimed by Niehans, an endocrine effect, and, secondly, a vasomotor reflex due to the pressure of the ligature on a sympathetic ganglion. He, Mr. Yates Bell, because of late beneficial effects in two cases, subscribed to the former theory. Niehans had claimed to have relieved nearly 400 patients by ligature without much mention of failure or case selection. Elliot Smith reported good results in a small series of advanced prostatic cases, with, however, some failures. The speaker had done the operation in twenty-eight instances, in seven of which, however, other surgical procedures, such as litholapaxy, were involved, so that in only twenty-one cases was the uncomplicated operation performed. Of these fifteen were successful, two were doubtful, and four were complete failures. The greatest successes were in the cases of early obstruction. The majority of these had already had medical treatment without success. He thought the indications for the operation were: (1) in slight cases to prevent further enlargement, (2) early cases with residual urine under four ounces but established symptoms, (3) as an accompaniment of some such procedure as litholapaxy when the stones are associated with prostatic hypertrophy. The contraindications, he considered, were: (1)

established prostate cases where delay would involve risk of damage to renal function, and (2) patients with atrophic testes. He pleaded for careful case selection.

Cutting of Sphincter of Oddi for Relief of Pain

Professor E. W. ARCHIBALD (Montreal) spoke upon section of the sphincter of Oddi for relief of pain following cholecystectomy and recurring pancreatitis without stone and for subacute cholangitis. He said that following the demonstration that the direct passage of bile to the pancreas because of an impacted stone in the ampulla of Vater produced pancreatitis, he had assumed, because of the large number of cases of acute and chronic pancreatitis which were unassociated with stones, that the same theory of retrojection of bile might hold, due to spasm of the sphincter of Oddi. Later he realized that mere distension of the common bile duct and gall-bladder by spasm of the sphincter could cause pain. Where attacks of pain occurred after removal of the gall-bladder, in the absence of signs of organic cause, they would be explained by the common bile duct failing to take up back pressure as well as with the help of the gall-bladder. Where signs of organic cause were not present he advised, first, medical treatment consisting of frequent feedings and the exhibition of bile salt tablets. If this failed operation was indicated. At operation search should be made for organic causes; none being found, the procedure was section of the sphincter of Oddi. He demonstrated an instrument which, passed down the common bile duct, elevated the sphincter so that it could be got at through a half-inch incision in the duodenum.

Obstructions of the Common Bile Duct

With Professor P. T. CRYMBLE, President, in the chair, the discussion on obstructions of the common bile duct was opened by Professor E. R. FLINT, whose paper appears in this week's *Journal* at page 253.

Mr. HOWARD STEVENSON (Belfast) emphasized that in these cases one was dealing with a widespread disordered metabolism, and endorsed Professor Flint's advocacy of pre-operative preparation. Regarding drainage of the common duct, he was much more in favour of external than internal drainage, because of its decompression effect and because of the ability to introduce a tube for immediate feeding into the duodenum. Where internal drainage was instituted he had a distinct objection to the use of rigid instruments, and preferred weighted gum-elastic probes.

Mr. G. GORDON-TAYLOR, after paying a tribute to Professor Flint's work in this field, declared his almost entire agreement with the opening remarks. He, however, disliked high spinal anaesthesia in these cases; in his experience such had been associated with too high a rate of chest complications. Mr. Gordon-Taylor deprecated the growing tendency to explore the common bile duct where there was no reason for this in simple cholecystectomy. Such an additional operative step not only added to the risk but entailed additional discomfort to the patient. In the matter of suture or drainage of the common duct after choledochotomy his bias was towards external drainage, especially in obese patients. He recalled two cases in which the duct had been carefully sutured after a negative exploration, but the suture line had burst open on straining after several days. Mr. Gordon-Taylor referred to the frequent association of *B. welchii* with gall-stones and pancreatitis. He advocated the use of cyclotropin in cases of common duct obstruction associated with infective cholangitis and pre-operative irradiation of the splenic area to diminish the tendency to bleeding. In conclusion, he thought that more courage was required in dealing with malignant disease of the common bile duct, particularly at its lower end, the most common site.

Professor A. H. BURGESS (Manchester) agreed with Mr. Gordon-Taylor that choledochotomy for diagnostic purposes was too often done. In the absence of an indurated pancreas the hepatic and common ducts could be adequately palpated between the forefinger introduced into the foramen of Winslow and the thumb in front of the small omentum. After choledochotomy he invariably instituted external drainage.

Mr. NORMAN C. LAKE said that Professor Flint's mention of arthritis prompted him to postulate that the gall-bladder was a commoner site of focal infection in the abdomen than any other organ, although most cases of osteo-arthritis were of a wear-and-tear nature rather than infective. He declared a preference for high spinal analgesia.

Professor C. F. M. SAINT (Capetown) said that a likelihood of bleeding could be detected by a rising bilirubin content of the blood, and that a delayed sedimentation rate was similarly informative. He advocated the use of a Murphy button in cholecyst-enterostomy as allowing of better haemostasis. The PRESIDENT described a case of obstruction of the ampulla due to an adenoma in which local excision gave a good result.

SECTION OF PHARMACOLOGY AND THERAPEUTICS

Thursday, July 22

Treatment of Circulatory Failure

At the second session of the Section of Pharmacology and Therapeutics, including Anaesthesia, Professor DAVID CAMPBELL, Vice-President, occupied the chair.

Dr. J. CRIGHTON BRAMWELL (Manchester), in opening a discussion on the treatment of circulatory failure, compared the variations in the cardiac reserve in healthy individuals with those in patients suffering from heart disease. In the latter, while the basal disability was determined by the structural lesions, additional impairment of cardiac function was consequent upon toxic and nervous causes. He suggested that the term heart failure should include angina, and he pointed out that the general indications for the treatment of angina of effort and of congestive heart failure were the same. He contrasted the clinical features of right and left ventricular failure, and described the three principal manifestations of the latter condition—namely, paroxysmal dyspnoea, gallop rhythm, and pulsus alternans. Rest and skilled nursing and, above all, early diagnosis were the fundamental considerations in the treatment of acute heart failure. When convalescence was complete the patient's future activities should be carefully regulated in order to prevent a further breakdown. While avoiding all sudden and severe forms of exertion, he should be advised to take regular exercise within the limits of his tolerance. Stair climbing should be eliminated and special precautions taken in the event of intercurrent infections, since these added greatly to the burden of the damaged heart. The associated anxiety factor should not be forgotten, and cerebral depressants were valuable drugs for the treatment of the nervous aspect of the condition. Dr. Bramwell was inclined to regard the major surgical procedures at present in vogue for the treatment of heart failure as still in the experimental stage, but he was convinced of the value of venesection both in acute pulmonary oedema and in acute cases of congestive heart failure. In ischaemic heart failure the basal disability was dependent upon disease of the coronary arteries, but much could be done to relieve the impairment of myocardial efficiency produced by nervous and toxic factors and to lighten the additional load due to obesity and other complications. The object of treatment was to enable the heart to balance its budget by increasing its assets and by reducing its liabilities.

Professor K. D. WILKINSON (Birmingham), discussing the effect of digitalis, said that this drug was the most

THE SECTIONS: SUMMARY OF PROCEEDINGS

valuable of all in the treatment of heart failure. It might prevent and would generally alleviate this condition, and it should be given in adequate doses to all cases of congestive failure whatever the rhythm of the heart. The best preparation for oral administration was the powdered leaf in doses of 1 to 4 grains a day, but strophanthin or digoxin 0.25 mg. might be given intravenously in emergency. It might be necessary to give one of the preparations in large doses so that speedy control of a failing rapid heart might be established, but the very necessity for such action suggested that an impending case of heart failure had not been recognized. In these circumstances 6 grains of the powdered leaf could be given at once, a further 3 grains in six hours, and another 3 grains within the first day. Or if the condition was more urgent 0.25 mg. of strophanthin or digoxin could be given intravenously and repeated in two hours. The average daily dose of leaf needed to control the ventricular rate in fibrillation was about 3 grains, but much less might be adequate and much more might be necessary.

Dr. S. B. BOYD CAMPBELL (Belfast) said that peripheral failure could be treated by increasing the blood volume and the chloride deficiency by intravenous injections of saline with or without glucose or by transfusion of whole or citrated blood. In the collapse associated with thyrotoxicosis the addition of collosol iodine and calcium gluconate to the injected saline was often useful. Digitalis was of limited value in peripheral failure, but strychnine, caffeine sodium benzoate, and adrenaline could be prescribed with advantage. Regarding the treatment of oedema, Dr. Campbell said that he had found the newer mercurial diuretics of considerable value. A satisfactory diuresis could be produced by the use of novurit suppositories when injections were not tolerated. Acupuncture was useful in cases of generalized oedema, and this could safely be performed by making fifteen to twenty small punctures down the front of each leg. The risk in tapping the abdomen was slight, but great care must be taken when tapping the chest in cases of heart failure.

Dr. A. R. GILCHRIST (Edinburgh) said that dietetic measures were a subsidiary but important aspect of the treatment of many forms of heart disease. The heart could be regarded as a sensitive index of the degree of nutrition as witnessed in such extreme states as war oedema and anorexia nervosa on the one hand and in obesity on the other. An excessive calorie intake was much the more common, and treatment for obesity was of the greatest importance in cardiac patients, particularly in those with anginal symptoms. In congestive heart failure rest was promoted by a low caloric diet, and help was obtained by restricting the daily intake of fluid to about one litre. A low salt intake was also of value in certain types of congestive failure, for this reduced thirst and facilitated drug action. Dr. Gilchrist suggested that, in congestive failure, disorders of inorganic metabolism in the periphery could not be disregarded, and he believed that attention to this aspect by restriction of salt and fluid played a useful and important part in treatment.

DR F. P. POULTON said that, when there was evidence that pulmonary oedema was associated with weakness of the heart in general, efficient oxygen treatment was of great use. This form of therapy was also of value in arteriosclerotic heart disease rather than in the valvular disease of young subjects. The closed method of administering oxygen by a closed tent was more efficient than open methods such as Campbell's mask and the double nasal tube and catheter. With the closed type of tent it had been shown that an oxygen figure of 40 per cent. could be obtained with a flow of 11 litres per minute, and that this could be increased to 50 per cent. with a flow of 12 litres per minute. With the St. George's Hospital type of tent, however, it had been shown that, with a flow of 6 to 8 litres per minute [illegible] per cent. of oxygen in the pocket at the bottom [illegible] at the end of half an hour the percentage [illegible] was 20 to 25.

Dr. GEORGE GRAHAM referred to some observations on a patient with typical paroxysmal attacks of pulmonary oedema. The blood pressure rose soon after the onset of the attack, and the haemoglobin value rose from 80 to 135, showing a great increase in the concentration of the blood. The acute onset of the symptoms and the rise in blood pressure suggested that spasm of the pulmonary veins and *not* left heart failure was the causal condition. The symptoms were relieved by the subcutaneous injection of 1/2 c.cm. of adrenaline, repeated twenty minutes later, and he suggested that this agent should always be employed after the preliminary use of morphine. Care should be taken not to inject adrenaline into a vein.

Dr. M. ASTON KEY (Southsea) said he had found the newer mercurial diuretics to be of very great value and, for oral administration, apocynum was not without its uses. He had always found Nativelle's granules a satisfactory preparation of digitalis. Dr. A. FULLERTON (Batley) inquired if icoral or cardiazol were of value in the treatment of peripheral failure. Professor J. H. GADDUM explained that Nativelle's digitalin was a mixture of glucosides with a preponderance of digitoxin. Digoxin was prepared from digitalis lanata.

Dr. J. F. COLTMAN (Calcutta) believed that pitressin was of value in peripheral failure, and he advocated a preliminary estimation of the specific gravity of the blood before the intravenous injection of saline in order to give some idea of the quantity required. Professor CAMPBELL observed a time lag between the result of pharmacological investigation and its clinical application. He believed that a more accurate classification of cases would lead to a more accurate use of drugs.

Therapeutic Use of Magnesium Trisilicate

Dr. NATHAN MUTCH contributed a paper with this title. He said that medicinal magnesium trisilicate had been defined as a compound represented by the formula $H_4Mg_2Si_3O_{10}$, and giving the pure diffraction radiogram of the natural mineral sepiolite No. 1. The ratio $MgO:SiO_2 = 1:2.24$. It had been shown that many of the marketed brands of magnesium trisilicate failed entirely to conform to these basal requirements, mainly in respect of the $MgO:SiO_2$ ratio. This substance, which was non-poisonous, could be employed in therapeutics in order to secure continuous control of gastric acidity in hyperacid states without the production of systemic alkalosis. The silica deposited as a result of interaction between the gastric hydrochloric acid and magnesium trisilicate was free for absorption purposes in the small intestine.

Dr. POULTON said that test meals performed before and after the operation of gastrojejunostomy for ulcerative conditions showed no difference in the degree of gastric acidity, and he therefore expressed the view that a mechanical factor was mainly involved in the causation of these states. Professor CAMPBELL inquired if magnesium trisilicate gave quick and permanent relief. In reply, Dr. MUTCH stated that this drug, although it possessed potent adsorptive properties, was put forward as a means of continuously controlling gastric acidity.

COMBINED SECTIONS OF OBSTETRICS AND GYNAECOLOGY, AND NUTRITION

Thursday, July 22

Nutritional Needs in Pregnancy

With the President of the Section of Obstetrics and Gynaecology, Professor C. G. LOWRY (Belfast), in the chair, a discussion on the nutritional needs in pregnancy was opened by Sir ROBERT MCCARRISON (Oxford), Dame LOUISE MCILROY, and Dr. G. C. M. M'GONIGLE (Stockton-on-Tees), whose papers appear in this week's *Journal* at

pages 256, 258, and 259. Dr. M'Gonigle was prevented from attending, and his paper was read by Professor D. C. HARRISON (Belfast). The discussion was continued by Dr. LUCY WILLS, who dealt with osteomalacia and with the needs for calcium and phosphorus. She said that the healthy non-pregnant woman required 0.55 gramme of calcium a day, but in pregnancy the requirement was about 1.6 grammes. The diets of many women contained less even than the former figure. The needs of pregnancy could only be met by ensuring the intake of at least a quart of milk per day, together with either exposure to sunlight or the intake of vitamin D. She pointed out the frequency of occurrence of osteomalacia in pregnancy in Eastern countries, and stated that although osteomalacia was rare in this country the frequent occurrence of negative calcium and phosphorus balances led to osteoporosis and carious teeth in nursing mothers and to rickets and ill-developed teeth even in breast-fed infants.

Dr. MARGARET I. BALFOUR dealt with some practical means of securing better nutrition. She pointed out difficulties in the way of giving extra milk or extra meals to pregnant women of the poorer classes, and commented on the success of the scheme initiated by the National Birthday Trust Fund for providing vitamin supplements. The mortality among 7,000 women taking the supplements had been 1.69 per 1,000, as compared with 6.69 per 1,000 among a comparable group of 14,000 women not taking supplements. The cost had worked out at 2s. 6d. a head per month.

Sir FRANCIS FREMANTLE (Hatfield) put forward a plea for greater emphasis on the need for adequate rest in the working day of the expectant mother. Only in this way could the mother assimilate her food properly. Dr. E. H. M. MILLIGAN (Glossop) had studied the budgets of fifty-two families, and found the income per head in the family to be 4s. 6d. On this sum it was impossible to afford a quart of milk a day. Sir MANGALDAS V. MEHTA (Bombay) reported on the high incidence in Bombay of maternal mortality due to nutritional anaemia. The diet of the poorer women consisted largely of polished rice and gravy.

Mr. L. CARNAC RIVETT criticized the opener's statement that the problems of nutrition in pregnancy were the same as those of the ordinary woman. He felt that the value of milk had been much overstressed. Colonel C. H. REINHOLD, I.M.S. (Punjab), claimed that there was more than one dietary factor involved in the production of osteomalacia.

Professor A. LEYLAND ROBINSON (Liverpool) thought it was wrong to say that the nutrition of a pregnant woman was the same as that of a non-pregnant woman. The presence even of an early foetus made a profound difference to metabolism. It was a great mistake to attempt to treat early toxaemias of pregnancy by partial starvation. Professor LOWRY said that there was nothing lacking in the vision of the medical officers of health, but they were often hampered by the committees which controlled them.

Sir ROBERT MCCARRISON, in closing the discussion, felt that the goal to be aimed at was the rearing of healthy women who could take pregnancy in their stride. Ultimately the crux of the problem of nutrition was an economic one. Dame LOUISE MCILROY stressed the element of neurosis due to household worries in the development of vomiting of pregnancy. It must not be treated by starvation, and fluids must be pressed.

Vitamin E in Habitual Abortion

Mr. D. W. CURRIE (Leeds) read a paper on the use of vitamin E in the treatment of habitual abortion. He reviewed the experimental evidence which had led up to the clinical tests. Some people have said that the vitamin is only necessary in the first three months of pregnancy. In his own series the results had been very good, although most of his patients had not started taking the vitamin until after the third month. They had been given 3 minims daily of wheat-germ oil, and only women who had had two abortions previously were considered in the result. Thirty-seven women, who had had only fifteen viable children out of 121 pregnancies, after treatment gave birth to thirty-six children with only three abortions and four deaths after birth.

Food Intakes of Pregnant Women at Different Economic Levels

Dr. R. A. MCCANCE, in a paper on the actual food intakes of pregnant women at different economic levels, said that in the past most studies had related solely to family diets. It was very difficult to calculate the actual intake of individual members of the family from these family figures. He and his colleagues had weighed the actual intake of each food constituent in the daily diet of pregnant women. He had studied three economic groups in which the income per head in the family after deduction of rent had averaged respectively 8s., 14s., and 26s. 5d. In every respect there was a progressive improvement in the intakes over the three groups. The intake of milk, calcium, and phosphorus was well below the recommendations of the League of Nations Report, even in the highest economic group. He had no political axe to grind, and put the figures forward as a basis for scientific consideration of the problems of nutrition.

SECTION OF DISEASES OF CHILDREN

Thursday, July 22

Dilatation and Elongation of the Colon

With Dr. H. MORLEY FLETCHER, President, in the chair, a discussion on dilatation and elongation of the colon was opened by Professor J. R. LEARMONTH (Aberdeen), the text of whose paper was published in the *Journal* of July 24 (p. 154).

Mr. F. A. R. STAMMERS (Birmingham) pointed out that surgeons in operating upon the abdomen for various conditions had many opportunities of observing anatomical variations in the arrangement of the intestine, and yet in none of these instances did these patients necessarily or commonly suffer from constipation. Hence if the neuromuscular mechanism was physiologically normal it probably did not greatly matter what the shape or length of the bowel was. If diet or defective hygiene led to constipation, however, then some anatomical abnormality of the large bowel might aggravate the resultant constipation. Mr. Stammers pointed out that the milder degrees of dilatation of the colon might not be accompanied by constipation at all, and it was the increasing size of the abdomen which caused patients to seek advice. With reference to the neurogenic factor in the causation of megacolon the speaker mentioned two examples of disorders affecting the lumbosacral region of the cord followed by dilatation of the colon. Accepting the theory of the neurogenic origin of megacolon, he continued, he employed section of the sympathetic nerve supply when medical means had failed. He thought the best operation was to expose the upper part of the presacral plexus, and dissect out and remove fibres ascending from this up to the inferior mesenteric artery and surrounding it for about one inch. Mr. Stammers summarized the results in eight patients thus treated, the youngest of whom was operated upon at the age of 1 year. He thought that patients requiring operation were usually less than 5 or 6 years of age, and on the whole the earlier in life operation was performed the more likely was cure to result, because there would be less change in the wall of the bowel.

Dr. T. PEARSE WILLIAMS emphasized the embryological double origin of the colon in relation to the function of

the distal colon as a storehouse for waste matter. Elongation of the large bowel was usually confined to this portion, the sigmoid loop remaining in later life what it was normally in the infant. This elongation might be the only determinable factor in some cases of constipation, and the type of constipation which occurred was prone to be associated with definite abdominal symptoms, especially colic. French writers, said Dr. Williams, had named the condition "dolichocolon," but not every long colon was associated with constipation, nor was every constipated child the owner of a long colon. Nevertheless, in his opinion unexplained constipation in young children should be investigated radiologically both by an opaque meal and by an opaque enema. Treatment should be non-surgical, and should be by means of diet, habit control, and physiological laxatives.

Dr. ROBERT MARSHALL (Belfast) asked what purgatives or laxatives were best employed in the conditions under discussion, and also what exactly was the best sort of diet to order. *Mr. G. D. McFADDEN (Belfast)* raised the question of the actual effect of the sympathetic and parasympathetic nervous systems upon the movements of the distal colon. In his experience section of the sympathetic nerve supply did not produce an emptying of the colon, but more frequently a moderate degree of atonic dilatation. He agreed as to the importance of through-going barium meals. Professor JOHN MORLEY (Manchester) pointed out how surgical opinion of the subject of anatomical variations in the large bowel in relation to symptoms had changed in recent years. He thought that what mattered much more was training in the earliest weeks of life. In true megacolon the effects of sympathectomy were dramatic, but he had considerable misgivings about the permanency of results. Professor L. J. WITTS asked what happened to children with megacolon who were not operated upon. He commented upon the inefficiency of the average radiological technique in examination of the bowel.

Sir ARTHUR HURST (Windsor) explained his views on the development of megacolon as a result of achalasia of the anal sphincter. Certain later developments might lead to an apparent kink at the pelvi-rectal junction, but he was now convinced that this was not a separate entity. Radiological examination should be made in the erect posture, and Sir Arthur agreed as to the importance of an opaque meal as well as an enema to get a true picture of the conditions present. He was opposed to surgical measures, treating his patients by dilatation of the anal sphincter. In early cases this was sufficient, but occasionally an "air-lock" in the upper part of the pelvic colon might occur, and operations to remedy this state of affairs might be necessary. Dr. ROBERT HUTCHISON deprecated so much investigation of cases of constipation, especially if surgery was now held to be seldom indicated for enlarged or elongated colon. He thought that many of the abnormalities in childhood were outgrown, but volvulus might occur if there were redundant loops of bowel present. The PRESIDENT described the termination of certain cases of megacolon with diarrhoea and coma.

Scarlet Fever

Professor SEYMOUR BARLING (Birmingham), Vice-President, took the chair, and Dr. W. R. F. COLLIS (Dublin) read a paper on the modern control of scarlet fever. He thought that the present terminology was misleading, for tonsillitis with erythema was called scarlet fever, and pharyngitis (caused by the same streptococcus) without a rash was regarded as a mild complaint for which no special measures were undertaken. Isolation of cases of clinical scarlet fever for six weeks did not stop the spread of the disease, and in a recent school epidemic Dr. Collis had attempted to follow the course of all cases by means of throat swabs. He thought that control of scarlet fever, including pharyngitis caused by the haemolytic streptococcus, should be by means of throat swab [illegible].

Dr. A. GARDNER ROBB (Belfast) was against the use of throat swabs, and stated that he was more alarmed by the problem of nasal infection. Dr. J. D. ROLLESTON also protested against a bacteriological conception of scarlet fever, and he did not approve of swabbing throats of scarlet fever patients before discharge from hospital.

Cleft Palate

Mr. W. E. M. WARDILL (Newcastle-upon-Tyne) read a paper on cleft palate. He explained his approach to the operation, holding that functional results were all that mattered, and he had devised his operation so that the child then grew up naturally without after-training in speech. His procedure consisted essentially in narrowing the nasopharynx. Gramophone records were played to demonstrate the speech results obtained.

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE

Thursday, July 22

Mental Effects of Head Injury

The second session was presided over by Professor LAMBERT ROGERS (Cardiff), when the subject for discussion was the mental manifestations of head injuries.

Professor E. MAPOTHER confined himself for the most part to problems of incidence and diagnosis. There was, he said, a great dearth of reliable information about the probable future course of head injury cases, and there were no figures for the amount of consequent mental disorder. The Board of Control statistics had, however, revealed no clear evidence of any rise in mental disorder in spite of the increase in road casualties. In military medical circles there seemed to be a conflict of opinion: some had claimed a rise in the incidence of psychosis following head injuries in warfare, while others had found very little trouble of this kind. There was a similar disagreement in reports from other quarters. Both psychosis and schizophrenia of psychiatric form were probably traceable to head injuries. Statistics from a group of mental hospitals south of the Thames pointed to an incidence figure of about 3 or 4 per 1,000; this was probably an underestimate, since many psychotic patients in whom the symptoms were not very troublesome were kept at home. In 5,000 private patients mental disorders had been traced to head injuries in 123 instances; ninety-two of these were undoubtedly of traumatic causation, and the remainder were probably so. The mental irritability after an accident was of doubtful pathogenesis, but constituted an important factor in prognosis. Professor Mapother thought that post-traumatic psychosis represented the last of a series of stages of degeneration of mental function. In traumatic psychasthenia there was some weakness of the higher mental states; the patient was detached from the outer world, and his internal mental mechanism was affected.

Dr. J. PURDON MARTIN approached the neurological aspect of head injuries by detailing the mental symptoms in various classes of cases and their physical accompaniments, and discussing their physiological nature and the pathological changes. He defined "unconsciousness" as the lack of conscious memory, but pointed out that the recovery of memory might often be very gradual, the patient remaining amnesic with regard to a variable period before the accident. Mental activity was at first low, and the early improvement was sometimes of the nature of conditioned reactions. Confusion and disorientation as regards time were frequent, especially when subarachnoid haemorrhage had occurred. Physical activity might be fully restored long before spontaneous mental activity had regained the normal in all respects. After being irritable, resentful, and abusive, the patient often became elated and childishly happy as the result of frontal lobe disturbance.

and this elation persisted for weeks or months, masking an anxiety state. The general tendency was for such mental symptoms to progress towards recovery within six months with some residual symptoms. In some cases, however, partial recovery was followed by dementia, especially in those aged over 55. Subarachnoid haemorrhage was the most likely cause of many symptoms. The degree of meningeal haemorrhage was an important causative factor. Traumatic neurasthenia was an unfortunate term for many cases of receding dementia with a basis in cerebral injury. True neurasthenic symptoms might be superimposed on a clinical picture of slight persisting dementia, but the prognosis was generally good. Gross hysterical manifestations after injury usually resulted from pre-existing tendencies in persons of poor mentality, but might be symptomatic of a degree of persisting traumatic dementia; minor manifestations might have an "escape" significance. Sometimes the injury seemed to precipitate an attack of depression in a patient whose mental constitution was of the cyclothymic or manic-depressive type.

Dr. F. E. PILKINGTON suggested a few lines of psychiatric treatment. He condemned the *laissez faire* attitude as being as bad as indiscriminate therapeutic activity. There were still persistent symptoms several years later in patients discharged as cured, so the present cheerful attitude towards prognosis could not be justified, especially since elation was common in the convalescence of head injury cases. Treatment in an ordinary medical or surgical ward was undesirable, as was also the environment of a mental hospital ward. One member of the medical team should be a psychiatrist, or the patient should be removed to a voluntary psychiatric clinic. Prolonged rest should never be synonymous with neglect—actual, or even imagined by the patient. Adequate sleep must be secured, by hypnotics if necessary, and the luminal group was useful; bromide treatment was especially dangerous in arteriosclerotic cases. The fear of becoming insane was not uncommon. Suitably designed reassurance might be very valuable, even when there was obvious organic damage. Compensation hysteria was a purely psychogenic phenomenon with a purposive objective, and it seemed to be becoming more common. It should be treated by a final lump sum settlement after the diagnosis had been complete and accurate.

Dr. H. HILTON STEWART (Belfast) discussed the mental changes in children. He offered a classification of groups according to the symptoms and the organic changes. In compensation hysteria the symptoms were often suggested to the children by the parents. The explanation of behaviour changes was far from clear, but some organic factor often unmasked a personality abnormality due to the environment. The evidence was sometimes difficult to elucidate, but it ultimately became clear and satisfying. The family background was an essential field for exploration in cases of head injuries in children. Mr. C. E. WINTERSTEIN said that boxing might have neurological and psychological sequels. Here compensation hysteria could be excluded. In fifty treated cases the consequences had been classifiable as: (1) the immediate ones after a single punch; (2) the remote effects of repeated injuries. In the first group a knock-out had been followed by loss of reflexes and amnesia; the latter might be strictly limited to the event, but retrograde amnesia varied in length. Sometimes also there might be an anterograde amnesia extending over the period when normal activities had been resumed for a long time. A post-traumatic state of this kind was not uncommon in head cases generally. The speaker contrasted this with the symptoms in trunk injuries ("punch drunkenness"), but mental dullness was commoner in patients of low intellectuality, who were more susceptible to punch drunkenness than were those with more sensitive temperaments. The cause of punch drunkenness was repeated multiple injuries; the syndrome was not progressive, and decreased when boxing stopped.

Dr. W. RITCHIE RUSSELL (Edinburgh) remarked that the phenomena of concussion originated from a jarring of the tissues of the brain affecting conductivity, but not demonstrable pathologically. Transient cerebral anaemia was probably not so directly associated. Crushed head injuries were often not followed by loss of consciousness. This jarring might be more severe in more serious accidents, and nerve elements be severed thus. Slight impairment of the higher cerebral functions was a common post-traumatic finding in minor accidents. Very young children who had just begun to speak retrogressed in this respect about six months after a head injury or encephalitis; this was due to impairment of vulnerable cortical control centres in early life. Some permanent impairment of the higher cerebral functions was much commoner than was generally supposed, and ought to be more carefully considered in assessing the after-effects of severe head injuries. The duration of retrograde amnesia was another important point. Dr. Ritchie Russell doubted whether cerebral irritability was so often due to subarachnoid haemorrhage as had been stated. Dr. JOHN THOMPSON (Belfast) held that more cognizance ought to be taken of interference with the blood supply to the cerebral cells, especially in elderly persons. This condition probably caused many symptoms, including the emotional changes.

Mr. W. MCADAM ECCLES pleaded for care in the use of terms in the law courts. Unconsciousness was a term hard to define. Could it be acknowledged as the condition when a person who had had a head injury did not realize what was happening around him? "Fits" might be much less than those of epilepsy, but they should not be lightly disregarded. Dementia should not be lightly mentioned, since it appeared to be looked upon as most serious and to preclude recovery. Traumatic neurasthenia was a very real condition to the patient, and often to his friends, but it was probably true that it dated from lack of proper early treatment of the head injury, often only a slight one, and maintained by the delay, often legal, in settlement of the claim. It was necessary, therefore, to be clear, decisive, and full of common sense in dealing with the mental effects of a head injury.

Dr. R. G. GORDON (Bath) said that in the lesser mental effects very obvious symptoms were mental inactivity and easy fatigability. These symptoms were probably due not to gross or even pathological changes such as could be seen at post-mortem examination, but to biochemical changes at the synapses analogous to those in the peripheral nervous system in myotonia. If success were ever reached in finding a method of estimating such central synaptic changes, a pathological interpretation of the symptoms might emerge. In children there were often obsessive phobias, but in some of these cases there was a neuropsychic habit fostered by the anxiety of the parents. It was important to remove these by early psychotherapy; otherwise, by accretions of other emotional experiences, they might become permanent obsessions. Sir E. FARQUHAR BUZZARD (Oxford) dealt with anterograde amnesis. He related a personal incident of a football accident which had been followed by loss of memory for the remainder of the match. He added that retrograde amnesia might provide some measure of the severity of a concussion. Professor A. A. MCCONNELL (Dublin) referred to some statistical evidence which had been forthcoming, and touched on the post-mortem evidence in these cases. He concluded that the question of prognosis would often be very difficult. Professor ROGERS thought that cerebral oedema was a very important consideration, and referred to a series of cases dealt with at Cardiff. Treatment by general dehydration of the body by magnesium sulphate had proved to be most effective.

Replying to the discussion, Professor MAPOTHER emphasized the importance of schizoid psychoses as common sequels of head injuries. He referred to the question how far the actual organic damage was related to the subsequent mental symptoms, and concluded that such relation was very small. In many cases gross injuries had given rise to few psychological sequels, and slight injuries to serious ones. Much turned on the previous life and

mental outlook of the victim. Amnesia was an extremely complex state. Retrograde and traumatic amnesias might be largely a matter of the patient being unwilling to think. The spread of popular psychology had much to do with the victims of accident cases complaining of loss of memory. Dr MARTIN agreed that dementia was a most unfortunate term in this connexion and that it would be better to speak of traumatic psychasthenia. In head injuries the emotional state (elation) differed from that which was found in vascular lesions of the brain.

SECTION OF OPHTHALMOLOGY

Thursday, July 22

Squint and Heterophoria

With the President, Mr. J. A. CRAIG (Belfast), and subsequently Dr. P. J. HAY (Sheffield) in the chair, Mr. W. H. McMULLEN opened a discussion on squint and heterophoria, with special reference to orthoptic treatment.

After reviewing the historical development of the subject he discussed the current theories on the causation of squint. The fact that concomitant squint frequently came on after acute illnesses had been used to support the view that squint was of muscular origin, either as a congenital weakness exaggerated by the illness, or perhaps as an acquired condition similar to post-diphtheritic paralysis. But all the evidence was against squint being due to a paresis of muscle, and, furthermore, in an obvious congenital or a very early squint paresis of muscle does not lead to constant squint. The accommodation theory advanced by Donders found its support in the often-repeated observation that squinters had high hypermetropia. None the less there were squinters with myopia, and not all hypermetropes were squinters. As recently modified the emphasis in this theory was on excessive convergence; this produced separation of the two images, and so helped by suppression to overcome diplopia. The view steadily gaining ground was the one which saw squint as a defect in vision faculty. It might, however, be held that the lack in binocular vision was the result and not the cause of squint, for in orthoptic clinics it was often found that good binocular vision gained by training could rapidly be lost in cases of persistent heterophoria. Moreover, cases with good fusion faculty were occasionally seen. Anisometropia had been blamed by many observers; but here again binocular vision might be present in spite of a high degree of this defect. The significance of heredity was assessed differently by different observers, and was intimately linked with the question of the nervous factor. In fact, some cases of squint fell within the province of the psychiatrist. The influence of environment was admitted by most observers; the affection seemed to be commoner among the poor. No agreement was yet possible on the question of the relation of amblyopia to squint. There was much evidence to support the view that amblyopia arose *ex anopsia*, but the possibility of macular haemorrhages in infancy could not be ignored. The recent developments of orthoptic training had a long history, going back quite clearly to Javal, and perhaps earlier to Roux in 1814. One point of significance that had emerged from the latest work was that squint training was possible at a later age than that which Worth had considered the upper limit, the age of 6 probably being the ideal. Mr. McMullen concluded with an account of the development of the orthoptic clinic in the Royal Westminster Ophthalmic Hospital and the reasons for the establishment of an Orthoptic Board.

Concomitant Squint

Mr. G. G. PEARSON followed with a paper on general considerations in the treatment of concomitant squint. He said that orthoptic training could not as a rule be undertaken in the case of children under 4 years old, nor in those of [illegible] mentality. Vision in the poorer eye had to be no less than 6/18, and the refraction fully corrected in all cases. Occlusion of the better eye was a valuable procedure, and in his exerience only less than 10 per cent. of squinters with amblyopia failed to recover sufficient sight to fit them for orthoptic training. He discussed the different methods of occlusion, such as the use of atropine in mild cases, and stripping the correcting lens, the Chavasse glass, the Doyne occluder, and adhesive plaster, in the more severe forms. Before orthoptic treatment could be usefully undertaken abnormal retinal correspondence had to be eliminated; where this could not be achieved orthoptic treatment would not help, just as it would fail where there was complete lack of the fusion sense and marked incomitance or vertical deviation. Generally forty-eight sittings were given, but the cases had to be kept under observation afterwards, as some required supplementary treatment. Good cosmetic and functional results could be expected in over half the cases by orthoptic treatment, which, incidentally, had raised the criteria of success. He considered that a standard method of recording results was most desirable, and submitted a scheme of his own.

Problems in Squint Training

Miss MURIEL A. PUGH, in discussing some problems in squint training, said that there were more unsolved problems in squint training than was usually admitted. Although squint cases could be trained to a considerable degree of binocular vision, it was often found that one eye remained dominant, and that this dominance was due not to a difference of visual acuity, but to the ratio of light values. The exophoria group exhibited the dominant eye, which also showed a parallelism between the lateral and vertical deviation—different in kind from the relation of hyperphoria to lateral phorias in the concomitant squints. Vertical phorias presented most difficulty. There seemed to be more than one type, and it was often difficult to assess the origin and history of the trouble. She held that special orthoptic clinics and expensive apparatus were not necessary for the treatment of many of the simple squints with true projection, and for the heterophorias which were likely to react to exercise. Simple stereoscopes used with the specially designed charts to correct either esophoria or exophoria, and the careful use of vertical prisms in the stereoscope in the cases of hyperphoria which were likely to react, gave as good results as more elaborate instruments, which were essential in cases of complicated deviation or marked defect in the binocular vision.

Heterophoria in Binocular Disharmony

Wing Commander P. C. LIVINGSTON read a paper on the role of heterophoria in binocular disharmony, with special reference to air pilotage. He classified heterophoria as symptomless and symptom-producing; either might be inherent or acquired. The one great cause of inherent heterophoria was dominant macular reception; where rivalry was present symptoms developed. Acquired heterophoria might come on at any period in life. He held that the part played by heterophoria in the induction and maintenance of a psychological state was not emphasized enough. Of the symptom-producing phorias heterophoria and exophoria with weakness of convergence were the most important with regard to air pilotage. He stressed the significance of the development of heterophoria as a result of prolonged fatigue from concentrated flying, from tropical asthenia, from malaria, or from head injury. Heterophoria thus produced did not tend to persist once the primary cause had been removed. These cases were generally those of inherent heterophoria becoming manifest under strain. One had to avoid the mistake of trying to develop a theoretical ideal; inherent heterophoria with dominant macular reception should be treated by an attempt to overcome a manifest phoria. Treatment of symptom-producing phorias always required a complete survey of the patient's mental framework. Orthoptic training was valuable as part of this scheme,

but it constituted a part only. The paper was illustrated by films bringing out the difficulties met with in flying.

In the discussion that followed Mr. J. D. M. Cardell suggested that measles and whooping-cough might produce squint through a lesion of the fusion centre, and that in other cases aniseikonia might have a bearing on the aetiology. Mr. W. B. Inglis Pollock (Glasgow) said that the avoidance of amblyopia involved early treatment by training or operation. Mr. R. Affleck Greeves discussed the general factor in squint, and believed that nasopharyngeal sepsis tended to be overlooked. Mr. N. Bishop Harman emphasized the more critical and confident attitude of the modern outlook on squint. He held that the correction of heterophoria was one of the most grateful tasks in ophthalmology. Mr. D. D. Stenhouse Stewart (Hull) discussed acquired heterophoria, and instanced cases of its disappearance after the removal of an exciting cause. Dr. T. Stewart Barrie (Glasgow) thought that whilst orthoptic treatment had a definite place, its value was limited by the age factor and the necessary selection of material. Mr. J. W. Killen (Londonderry) pointed out the dangers involved in too radical operative disturbance of the extra-ocular muscles. Mrs. Beatrice H. Lynn (Belfast) and Mr. H. Caiger (Sheffield) discussed points in the technique of orthoptic training.

Ectopia Lentis with Arachnodactyly

Miss Euphan M. Maxwell (Dublin) reported in detail a case of ectopia lentis associated with arachnodactyly. Her patient, a boy of 10, showed typical skeletal changes, a miotic pupil, subluxated lens, and extrasystoles. She discussed the theories of arachnodactyly, and drew attention to the view that arachnodactyly and other mesodermal syndromes have a common underlying factor (see *Journal*, July 3, p. 22). Her paper was illustrated by lantern slides.

Mr. Arnold Sorsby drew attention to the development of acute glaucoma in such cases owing to dislocation of the lens into the anterior chamber. Lieut.-Colonel R. E. Wright, I.M.S., stressed the unsatisfactory operative results in this complication. Mr. J. A. Corkey (Belfast) gave details of a family with arachnodactyly under his care. Dr. E. J. Primrose (Glasgow) emphasized the partial character of the syndrome in some cases.

COMBINED SECTIONS OF RADIOLOGY AND PATHOLOGY

Thursday, July 22

Bone Tumours

With the President of the Section of Radiology, Dr. J. C. Rankin, in the chair, Dr. R. E. Roberts (Liverpool) opened the discussion on bone tumours with a plea for the orderly interpretation of films. He had devised a scheme that included a list of changes in structure and in contour of bones in diseased conditions, which he submitted to the meeting. Most innocent tumours, such as chondromata and traumatic osteomata, had typical radiological appearances. Some malignant conditions were also typical, but many were very difficult. Dr. Roberts showed a large number of films illustrating these points, together with case histories. Biopsy, he thought, was often misleading, and *x*-ray treatment helped in the diagnosis in many cases. He had purposely avoided reading his original paper, which would be published later, and had confined himself to the demonstration of films.

Professor J. S. Young (Belfast) speaking of the responsibilities of the pathologist, said that at the Royal Victoria Hospital, Belfast, open biopsy was a routine in all doubtful bone tumours. Many workers were violently opposed to this. It was essential to diagnose bone sarcoma before it metastasized. If radiography failed to make a sure diagnosis only two procedures remained—serial radiography and biopsy. Biopsy might increase the risk of dissemination of tumour cells, but, by the delay involved, serial radiography involved a similar risk. Bone tumours grew under mechanical restraint, and it was fair to assume that the hydrostatic pressure was higher than in soft tissue tumours. When haemorrhage occurred this pressure increased, with further danger of forcing tumour cells into the vascular channels. He thought that the hydrostatic pressure was more important in this respect than vascularity. He regarded Hoffmann's method of biopsy as 100 per cent. dangerous because of the haemorrhage which took place within the growth. Open biopsy was attended by no rise in pressure. Wood's experiments with rats showed that open biopsy was not attended by increased liability to metastasis. Of the seventy-four five-year cures in the American Registry of Bone Sarcoma no fewer than twenty had been subjected to biopsies, curettages, explorations, and excisions. The microscope was an instrument of much greater precision than the radiographic machine. Serial radiography and the radiodiagnostic test were dangerous because of the delay involved. In every case which could possibly be a bone sarcoma, open biopsy should be performed.

Mr. Harry Platt (Manchester) was unable to be present, his paper being read by Mr. H. O. Clarke (Manchester). Diagnosis of bone tumours, he said, should be based on history, clinical signs, *x*-ray changes, and biopsy. Responsibility for diagnosis and treatment rested entirely with the surgeon. Bone tumour cases should all be dealt with at special clinics because of the comparative rarity of such cases. The dangers of biopsy were mythical, and it was a valuable aid to diagnosis. He performed the operation under a tourniquet, cauterized the deeper part of the wound, and closed the capsule. All bone tumours should be removed surgically. Certain early giant-cell tumours should be curetted and others excised. Amputation should be performed in sarcoma of long bones, combined with *x*-ray treatment of the chest and Coley's fluid.

Dr. J. F. Brailsford (Birmingham) said that the clinician was becoming increasingly anxious to pass the responsibility of diagnosis on to the radiologist. In spite of a negative Wassermann reaction bone lesions might be syphilitic. The radiodiagnostic test was not dangerous unless the surgeon refused to intervene when radiation treatment failed. He thought biopsy was dangerous, since release of pressure caused more rapid growth. Less than 5 per cent. of the American cases survived ten years, and this was such a low proportion that he thought here was room for error. Histology might be misleading, sometimes because material was removed from the wrong place. The radiologist should be consulted about this. Necrotic neoplastic material might be mistaken for pus. Dr. Brailsford showed several films of cases in which the radiologist had been proved right and the surgeon and pathologist wrong.

Professor M. J. Stewart (Leeds) thought that immediate biopsy (frozen sections) was unfair to the pathologist, who had to give a far-reaching decision in a few minutes. The sections were never so good as paraffin sections. Different pathologists sometimes gave various opinions on the same section. Even the benign giant-celled tumour was sometimes difficult to diagnose; in order to be sure the matrix must not be unduly cellular, and the giant cells must be widely and uniformly distributed. Mr. F. C. Pybus (Newcastle-on-Tyne) said that in 1929 he had acquired a pair of mice of the Simpson strain, which was prone to develop mammary carcinoma. In one of the descendants a sarcoma of the sternum had occurred, and he had succeeded in producing a strain which was liable to osteoplastic bone sarcoma. They developed metastases in the lungs, liver, spleen, and kidney. The advantage of this animal experimentation was that it provided ample material in the case of a disease which was comparatively rare. He proposed to investigate the causal factor in these mice.

Mr. Stanford Cade recalled that seventeen years ago, at a meeting in London, one of the speakers summed up

the question of bone sarcoma by saying that all the patients died. Since that was so the danger of biopsy was a negligible factor. The difficulty about biopsy was that it often failed to make a diagnosis in otherwise doubtful cases. He disagreed entirely with Mr. Platt and Dr. Brailsford, and thought that both diagnosis and treatment of bone sarcoma were primarily radiological. If radiation failed surgery should be used. There should be a panel of skilled pathologists to whom sections in bone sarcoma cases could be submitted. Surgical measures rarely cured bone sarcoma or delayed the onset of metastases. Prophylactic x-ray treatment of the lungs was useless because when metastases later appeared in the lungs it was impossible to deal with them. At the Westminster Hospital all cases were treated by *x* rays or by radium beam therapy, or by both. Calcium in large doses should be administered to all cases.

Mr. R. C. ELMSLIE congratulated Dr. Roberts on his schedule. He thought, however, that increased calcification and decalcification were misleading terms, as was osteitis fibrosa. He agreed with Professor Young that biopsy should be done and a large piece of tumour removed. Immediate biopsy was unfair to the pathologist. Benign giant-celled tumours should always be treated surgically. He agreed with Mr. Cade that some form of bone sarcoma registry was necessary.

Dr. ROBERTS, in reply, said that he had included decalcification and increased calcification in his schedule because he had occasionally seen cases where those terms would apply. He thought that closer co-operation was needed, particularly between pathologist and radiologist.

Professor YOUNG, in his reply, criticized the surgeons because they sometimes removed tissue which was not representative of the tumour and blamed the pathologist for the result. He disagreed with Mr. Cade about the treatment of bone sarcoma. All except one of the cures in the American Registry were treated surgically. Dr. Brailsford had said that relief of pressure resulting from biopsy brought about more rapid growth. This did not matter, since surgical removal would be undertaken at once. He regarded Dr. Brailsford's tendency to speak in terms of radiopathology as dangerous. He thought that histopathology was much more reliable.

SECTION OF TUBERCULOSIS

Thursday, July 22

Surgical Treatment of Apical Cavities

With Dr. A. TRIMBLE (Belfast), a Vice-President, in the chair, Dr. CARL SEMB (Oslo) opened a discussion on the surgical treatment of apical tuberculous cavities.

In the treatment of pulmonary tuberculosis thoracoplasty meant first and foremost cavity therapy. It should achieve: (1) complete collapse of the cavity; (2) selective collapse of the diseased part of the lung alone; and (3) the operative risk must be small—the mortality should not be greater than 3 per cent. Dr. Semb stressed the importance of accurately localizing the cavity before operation, and discussed the mechanical principles underlying thoracoplasty. He preferred the term "relaxation therapy" to collapse therapy. In performing thoracoplasty the aim should be to mobilize the lung in a manner similar to artificial pneumothorax, so as to enable it to retract concentrically towards the hilum. He described the "ordinary" methods of thoracoplasty. Even those most extensive could not in all patients produce enough collapse of cavities in the upper lobe. There were definite disadvantages, too, in combining these thoracoplasties with extrafascial apicolysis: the latter might be difficult, sometimes impossible to perform, and the collapse was not so complete. He had devised a modification with more satisfactory results. The apicolysis was carried out in the extrafascial plane, was combined with a radical rib resection according to the extent of the apicolysis, or more, and a new extrafascial space was prepared by cutting periosteum of ribs and other structures in such a manner that they were not loosened from the surface of the lung. The dropped upper lobe stayed put, instead of being "pulled" up again by the ribs later, as in extrapleural apicolysis. Moreover, no "dead extrapleural space" was left.

Dr. Semb described the technique and possible complications of his operation, and insisted on the importance of performing it in stages. He discussed the factors by which one must be guided in deciding the "size" of these stages. Evulsion of the phrenic nerve should not be done previous to a thoracoplasty. It increased the risk of post-operative complications. It might, however, give effective collapse when carried out afterwards. His results of the operation in over 250 patients since 1932 were: mortality within two months, 6 per cent.; dead later, 5 per cent.; complete collapse (as judged by radiography) in 90 per cent.; and tubercle bacilli disappeared from the sputum in 86 per cent. The results were even better since 1934, when he began using systematically small and several stages: among a total of 149 patients the mortality within two months was 3 per cent.; dead later, 3 per cent.; radiological complete collapse in 93 per cent.; and disappearance of tubercle bacilli in the sputum in 91 per cent.

Mr. J. E. H. ROBERTS agreed that many surgical procedures used at present did not give complete collapse of the cavity. An artificial pneumothorax often produced a collapse that was not selective, though it completely collapsed the cavity. These cases were sometimes not satisfactory also because the lung remained adherent at the first dorsal vertebra—when the lung was allowed to re-expand the cavity was apt to become patent again. He had rarely seen an apical cavity closed as the result of phrenic evulsion. The cavity had failed to close in at least half the patients treated by apicolysis and plombage. Some patients were too ill to undergo even the first stage of Semb's operation. The shock following the latter was due to the rib resection and not to the apicolysis. This was in favour of the method recently advocated—extrapleural apicolysis and maintaining the extrapleural space by the repeated introduction of air as in ordinary artificial pneumothorax. He had adopted this method in fourteen patients with encouraging immediate results. If the lung re-expanded in spite of refills, gomenol should be introduced.

Dr. ANDREW MORLAND said that in deciding what cavity demanded surgical collapse the probable mode of origin of the cavity must be considered. Where there had been extensive destruction of lung tissue spontaneous healing was less likely than in those cavities in which the inflation element predominated. Artificial pneumothorax should always be tried first. It might succeed in the most unhopeful-looking cases. His own experience with apicolysis had been most unfortunate. There could be no doubt that a cavity constituted a much greater danger to life than a thoracoplasty. It was important to choose the right time to operate. Dr. Morland discussed the contraindications. Tuberculosis elsewhere was not necessarily a contraindication. He thought that a preliminary phrenic evulsion might assist in resting the lung, and render the patient fitter for the major operation.

Mr. GEORGE A. MASON (Newcastle-on-Tyne) stressed that each case required treatment on its merits. He referred to methods of the future—tying the pulmonary vein, lobectomy or pneumonectomy, and direct drainage of cavities. When section of adhesions was not possible in a contraselective pneumothorax the phrenic nerve should be paralysed—temporarily at first, for healing of the cavity was obtained in only half such cases. The dangers of thoracoplasty carried out later were greatly increased when the diaphragm was paralysed. The maintenance of a contraselective pneumothorax until the completion of an upper thoracoplasty was of definite benefit. He spoke in favour of apicolysis with plombage in suitable patients.

Dr. G. S. TODD (Midhurst) emphasized that not all cavities needed surgical treatment as soon as they were discovered. The presence of cough and sputum, and thick walls, were, however, indications for surgery. He spoke in favour of phrenic evulsion for apical cavities when they were small and thin-walled. He was not convinced of the advantages of the crush operation. The danger of basal spread after thoracoplasty in patients who had had the nerve paralysed was probably exaggerated. The results of apicolysis with plombage had been most disheartening. After Semb's operation, which took longer than the simple thoracoplasty, convalescence was much more stormy. He had seen three patients in whom as the result of the operation the cavity had been merely pushed down into the middle lobe.

Mr. H. MORRISTON DAVIES (Ruthin) also referred to the possibility of the cavity being merely pushed downwards. The comparison between the principles underlying artificial pneumothorax and Semb's operation was not quite accurate. In surgical procedures it was essential to have compression as well. In the ordinary thoracoplasty it was important to allow torsion of the costal cartilages to take place. It was therefore a wrong principle to remove too much of each rib. The transverse processes should be removed, but scoliosis should be prevented. He spoke emphatically in favour of phrenic paralysis in selected cases. Mr. G. R. B. PURCE (Belfast) said it was surprising what could be achieved with adhesion section and phrenic paralysis in patients who had an ineffective pneumothorax. Dr. L. S. T. BURRELL advocated the trial of conservative treatment before resorting to surgery. The mere presence of a cavity was not an indication for collapse treatment. Dr. BEHRENS (Davos) described the method of extrapleural artificial pneumothorax.

Dr. J. CROCKET (Glasgow) then read a paper on artificial pneumothorax, with special reference to bilateral collapse. It appears in this week's *Journal* at page 261.

SECTION OF DERMATOLOGY

Thursday, July 22

Autophytic Dermatitis

With the President, Dr. G. B. DOWLING, in the chair Dr. HENRY MACCORMAC opened a discussion on autophytic dermatitis.

Dr. MacCormac said this condition was far from uncommon, and in its various forms might deceive every class of practitioner, including dermatologists. The number of recorded cases was now considerable. By the application of various external agents, or even by rubbing the skin, it was possible to produce a variety of dermatological conditions. The appearances might mimic various skin infections. The most important guide, however, to correct diagnosis lay in their inaccuracy of reproduction of a recognized disorder. A true occupational dermatitis might be deliberately aggravated or extended at will by the patient concerned. Admission to an institution and the application of occlusive dressings would, by the rapid healing of lesions which had persisted for months or years, reveal their true nature. At other times an inspection of the patient's belongings would be rewarded by the discovery of the causal agent. Sometimes, however, these occlusive dressings appeared to aggravate the eruption, and the speaker had devised a wire cage into which a part of a limb could be inserted and locked. The individuals who resorted to these deceptions were of different patterns, falling into groups which could usually be clearly separated: (1) The hysterical group, divided into (*a*) purposeless eruptions and (*b*) purposeful eruptions; (2) the malingering group; (3) the mischief group; (4) the phantom dermatoses. Group 1 (*a*) represented the most characteristic and deceptive class. There was no apparent object to be gained, and personal appearance might be severely damaged. Patients in this group were nearly always young unmarried women. In the most severe cases submission to surgical mutilation was not uncommon. He described several cases of his own and others to illustrate some of the features observed. Group 1 (*b*) were usually women of mature age who had been, or had become, difficult or unreasonable. There was an attempt to evade unwelcome duties, with simulation of illness to gain pity. Two cases of this nature were described. Group 2 consisted of those who wished to gain a monetary or other advantage, or to avoid a disagreeable duty. This kind of deception was met with during the war, and was often very difficult to detect. Thus a piece of tinfoil stretched over the skin and multiple punctures made through it rubbed over with sand, could produce a perfect imitation of a boil. Another example was the deliberate aggravation of an occupational dermatitis by a workman long after removal from contact with the supposed irritant. It would, however, be wrong and unjust to suspect as fraudulent more than a very small minority of this class of case. Group 3 cases were usually children, who as a class often enjoyed mystifying their elders. Either this fact or the natural instinct for mimicry would probably explain the epidemics of supposed alopecia areata which had been described in certain schools. Occasionally, however, an autophytic dermatitis might be observed in a child where a spirit of mischief seemed sufficient to explain the circumstances. Every practitioner had encountered the Group 4 type of patient who complained of a rash which he (the patient) thought was obvious, but of which the unbiased observer could see little or nothing. At the consultation, in the presence of an expert, the true state of affairs was seen. Such conditions might be closely related to the phantom dermatoses where the patient's imagination inflicts an eruptive process upon the skin. These conditions were apparently a form of hallucination.

Recognition and disclosure of the true state of affairs, Dr. MacCormac said, usually raised new and perplexing problems. The dermatologist could rarely satisfactorily explain the patient's perverted behaviour to the relatives. Nothing was gained by confronting the individual with the deception. The result was always an indignant denial. It was essential to be certain before expressing an opinion, as no diagnostic error was ever more resented. He had himself investigated the after-history of eleven young women who had had hysterical eruptions. All but one had ceased to inflict lesions on the skin, and some of the replies revealed the curious fact that the knowledge of what they did had been submerged or completely forgotten.

Dr. R. D. GILLESPIE said that he defined autophytic dermatitis as a "self-inflicted lesion where the patient persisted in denying the fact of self-infliction." This excluded "reflex" scratching of existing lesions and lesions produced by fidgety manipulation. It included, on the other hand, cases in which the primary interest need not have been that of self-deception. There was, he said, no single specific psychological mechanism even in the restricted sense of his definition. The more frequent motives were the avoidance of some difficulty or the gaining of attention, with which was mingled self-pity, and sometimes also resentment and revenge. But these motives could not be understood apart from the personality and general circumstances of the patient's life. In the group of neurotic personalities, especially the hysterical, the inner needs of the patient were of outstanding importance, and there might be little or nothing in the external circumstances to help to explain the condition. The suggestion that the lesions were inflicted in a "dissociated" state of mind usually had slender evidence to support it, even where there was a history of hysterical fits or similar phenomena. In one case of this nature evipan semi-narcosis proved useful in eliciting facts which had previously been withheld. In another group the lesion represented the "resolution" of motives—that is, it achieved

a compromise between the compulsive desire to inflict injury on another and self-punishment for this compulsion. In a further group the chief motives were exhibitionistic and erotic. In many of these cases the nearest relatives might be either reluctant, or even openly refuse, to accept the proper diagnosis. It might then be necessary to carry conviction to this quarter before the patient would cease to inflict self-injuries.

The PRESIDENT asked, What was the ultimate prognosis in these cases? In reply Dr. MACCORMAC said that complete recovery was usual. Dr. W. G. HARVEY (Dublin) doubted if trichotillomania was really a single entity. He thought that in some cases it might result from intolerable itching. Patients with exceptional vulnerability of the skin might present special difficulties—for example, cases of eczema or epidermolysis bullosa. Dr. H. R. FREDERICK (Port Talbot) described a case in which the hope of financial compensation seemed to be the most important factor. Dr. R. T. BRAIN mentioned the common forms of artefact lesions (excoriations, bullae, necroses), and referred to the difficulty in discovering the noxious agents employed. In two of his cases these had proved respectively to be smelling-salts and a blistering fluid contained in an old eau-de-Cologne bottle. Dr. MASON BOLAM (Newcastle) said that out of 17,000 new patients who had attended the Royal Victoria Infirmary in the last five years only twenty-five were diagnosed as suffering from autophytic dermatitis. Of these, twenty-one were females, and the average age was 19½. Dr. A. C. ROXBURGH and Dr. MCCARVILL (Dublin) also took part in the discussion.

Virus Diseases of the Skin

Dr. R. T. BRAIN, in a paper on the methods and difficulty of treating virus diseases of the skin, pointed out that in virus diseases specific therapy followed the usual bacteriological procedures, and depended upon the use of vaccines and sera. Unfortunately evidence existed which indicated that in some virus infections specific antibodies were practically ineffective when the virus had once reached a susceptible cell. Methods of producing active immunity in virus diseases were: (1) Vaccination with living virus: (*a*) human strain (for example, herpes); (*b*) with a virus modified by animal passage (for example, vaccinia); (*c*) attenuated by time or temperature (for example, rabies); (*d*) neutralized with immune serum (for example, distemper). (2) Vaccination with killed virus: heat, formalin, or phenol, and a further modification of virus absorbed on inert protein or other material. Methods of raising the antibody content of the blood in herpes by inoculation with living virus and dead vaccine were discussed, and the speaker said that some good results had been obtained. Specific therapy had been tried without any success in the case of warts and molluscum contagiosum. Some of the common non-specific methods of treating herpes, warts, and molluscum contagiosum were briefly mentioned, and reference was also made to the use of posterior pituitrin extract and sodium iodide in the treatment of zoster.

Minor Methods in Dermatology

Dr. F. A. E. SILCOCK (Leicester), in a paper on some minor methods in dermatology, first referred to triethanolamine. This was a trihydroxy-triethylamine which he thought was an agent of possible dermatological value. It was a clear syrupy liquid resembling glycerin in appearance, and had a specific gravity of 1130. It was alkaline in reaction, was almost odourless, and mixed freely with most liquids. It was an excellent emulsifier for soaps, creams, etc., and owing to its low alkalinity and resulting stability of emulsion was without caustic action on the skin. It would saponify some fats in the cold. Triethanolamine was a common ingredient of many cosmetics, and could be used advantageously in many dermatological conditions. He had found it useful in the removal of excessive horny and sebaceous material in cases of acne vulgaris or those with an oily type of skin. He described several formulae he had employed for this purpose. A piece of cotton-wool was moistened with the solution and then rubbed firmly over the affected areas for a few seconds till a thin soapy lather appeared. It was then rinsed off and the skin dried. There was only a slight temporary tingling sensation. The method was useful as an adjunct to *x*-ray treatment or as an alternative when such treatment was contraindicated. The speaker also described the use of trichlorethylene, which was not only useful as a domestic cleaner but also as a degreasing and cleansing agent. It was non-inflammable and mildly antiseptic, with a Rideal-Walker coefficient of 0.9. Dr. Silcock, in dealing with the treatment of herpes zoster, said that Head and Campbell had suggested that the pain in this condition resulted from nervous impulses passing from the posterior root ganglion in the sensory nerve. Goodpasture, however, found that it was due to the passage of the virus itself in the nerve sheath. The pain could be relieved in many of these cases by the intramuscular injection of "P.B.A." (percaine 0.5 per cent., benzyl esters 10 per cent., carbolic acid 1 per cent., in an oily base). He injected 2 c.cm. round the affected nerve; this could be repeated a few days later if required. The relief of pain sometimes occurred in a few minutes and was maintained for several days. In other cases he had found a four-fifths pastille dose of *x* rays useful when applied locally to the affected areas of skin. In the presence of vesication he used a 1/2 mm. or 1 mm. aluminium filter. He then showed several gadgets he had found useful, including a modified crochet-hook for removing the lining membrane of sebaceous cysts, some skin punches, and a small scalpel useful for the treatment of warts. He also demonstrated the use of vacuum-filled capillary glass bottles for the application of pigment solutions to local areas, and an apparatus for repeated intramuscular injections.

Dr. ROBERT KLABER mentioned two isolated cases in which ill effects had followed the use respectively of triethanolamine and trichlorethylene.

In the afternoon Dr. IVAN H. MCCAW gave a demonstration of cases and of pathological specimens in the King Edward VII Hall at the Royal Victoria Hospital. This was followed by a discussion, in which several members took part.

INTERNATIONAL SHORT-WAVE CONGRESS

[FROM A CORRESPONDENT]

The International Short-Wave Congress, held in Vienna from July 12 to 18, was an event of great interest and importance, and was attended by some six hundred doctors, physicists, and biophysicists from every country in Europe, from America, Egypt, and Japan. In three or four years of rapid development the value of short and ultra-short high-frequency currents in medicine, surgery, and gynaecology has become firmly established. In England, however, we have been strangely slow to take up this form of treatment, owing partly to insular prejudice, partly to questions of finance, and partly to the lack of medical interest in physiotherapy in our teaching hospitals.

Section of Physics

The Congress comprised three Sections: Physics, Biophysics, and Medicine. The Physics Section, presided over by Professor Esau of Jena, whose researches enabled Schliephake to evolve the principles of short-wave therapy, discussed the future possibilities of television, questions of interference, the part played by ultra-short waves in aviation, chemistry, and recent ionosphere work. The rest of the time of the section was devoted to practical

questions regarding distribution, absorption, and measurement of energy in the short-wave field and the recently invented instruments for measurement, output, and dosimetry. The generation of centimetre and millimetre and hectomicron waves by the magnetron, and the value of these waves for scientific measurement, were also discussed.

The shortest wave-length produced hitherto in America measures 6 mm., but Professor Esau has succeeded in obtaining one of 4.9 mm. The energy of these tiny waves is of course infinitesimal, but it is hoped in the near future, by the aid of certain optical instruments, to increase the output of energy ten million times.

Biophysical and Medical Section

In the Biophysical and Medical Section the three chief problems were (1) dosage, (2) specific electric effects other than that of heat, and (3) selectivity of wave-length. Two papers of much interest in this section came from the Institute of Medical Research at Frankfurt, from Professor Rajewesky, who succeeded Dessaur there, and from Dr. Schaefer. The former discussed the electrical properties of biological tissues at various frequencies, and showed the value of such measurements in revealing the microscopical structure of living tissues and in distinguishing between the normal and the pathological. Dr. Schaefer demonstrated the influence of human-cell and animal-cell structure on the energy distribution of ultra-short high-frequency currents, and both he and Dr. Pätzhold showed the dependence of depth effect on adequate spacing.

The president of the Medical Section, Dozent Liebesny, demonstrated the importance of "athermic" treatment in acute inflammations and in tuberculous conditions by films and on living patients who had suffered from various forms of surgical tuberculosis and were all cured by athermic short-wave treatment.

Section of Medicine

The Medical Section dealt with results and methods of applying short-wave therapy to acute and chronic diseases, and many papers were of great interest and value. The discussion was opened by Professor Schliephake, who laid stress on the chief indication for short-wave therapy—that is, acute inflammations and suppurative conditions in the skin, sinuses, antra, lungs, and pelvis. The secret of success in applying short-wave therapy to these conditions is mild dosage and low intensity. He considers that the improved results from this athermic treatment give another proof of the value of specific action other than that of heat.

It is impossible in this limited space to mention all the interesting papers read in the Medical Section; two were outstanding—one by Professor Wintz of the Erlangen Frauenklinic, the other by the Berlin ophthalmic surgeon Gutsch. Professor Wintz admitted that the first results of short-wave therapy at Erlangen had been disappointing owing to deficient technique, to the use of unsuitable and too long wave-length, and, above all, to the low output of the apparatus then available. With these it was impossible to attain success in deep-lying organs.

For the last two years, however, apparatus of adequate output has been supplied; great advances have been made, and the results of short-wave therapy are now so good that it has become the most important form of treatment at Erlangen. Its chief indications are acute inflammatory processes, adnexitis, parametritis, and inflammatory tumours of the adnexa, including those due to gonococcal inflammation. He finds it also of value in many conditions of endocrine failure, hypoplasia, amenorrhoea, etc., also in menopausal disturbances not due to toxic factors. This form of therapy is contraindicated in all tuberculous infections of the genital tract and in malignant disease.

Complete details of the Erlangen technique were given for both acute and chronic conditions, such as wave-length, time, dosage, the best possible couch for treatment, position of patient, etc. Athermic therapy is of value on commencing treatment of acute cases. In all chronic forms of disease, however, heat is a necessity. Everything depends on the correct technique and on accurate medical observation.

Dr. Gutsch of Berlin gave an interesting survey of 700 eye cases treated successfully in his clinic by short waves. Here again good results are obtained in acute inflammatory conditions: serpiginous ulcer and hypopyon, abscesses of orbit and vitreous, post-operative inflammations, and infected wounds. In all these conditions the results of short-wave therapy are far superior to those of diathermy in rapid relief of pain and inflammation and in the homogeneous depth effect.

The best results of all, Dr. Gutsch considered, were attained in the posterior orbit—that is, in diseases of the iris, choroid, and retina. These parts, hitherto inaccessible to most forms of local treatment, respond particularly well to short-wave therapy: the active hyperaemia, and rapid resorption of exudate and haemorrhages and oedematous swellings, are remarkable. He gave details of the technique worked out by experiment on his own eyes and those of his co-workers. Athermic treatment with the ultratherm is the rule, and the 6-metre wave-length has on the whole been found most suitable. No bad effects of any sort have been observed. His good results were confirmed by workers in Mellor's eye clinic in Vienna, where, however, apparatus of lower output—namely, 30 watts—is used for most eye conditions.

During this crowded and interesting week all the members of the congress were magnificently entertained by the Government of Austria in the beautiful castle of Schönbrunn, the home of the Hapsburgs, and also by the Mayor of Vienna at the great historic Burg of Falkenstein. The Vienna Congress of 1937 has left us with much evidence as to the properties of short and ultra-short high-frequency currents, and has given a great impetus to the future development of short-wave therapy.

A TOUR OF SCANDINAVIAN HOSPITALS

Representatives of the Westminster Hospital who left England in July at the invitation of their chairman, Mr. Bernard Docker, to visit Scandinavian hospitals had a most interesting trip. The party included Mr. J. D. C. Couper, a member of the building committee, Mr. E. Rock Carling, the senior surgeon, Mr. Charles M. Power, the secretary, and two governors, Mr. John Docker and Mr. Edward Joynson. Great hospitality was shown by Government health officials, hospital authorities, and the leading medical men of each city visited.

Visit to Stockholm

Three days were spent in Stockholm, where Sven Ahlbom, architect of a new general hospital of 1,200 beds, which will be ready for occupation in six months, showed them every detail of this building. Much time was also spent in studying, with the aid of the architect-engineer, Hjalmar Cederstrom, the plans and models of another new hospital of 1,500 beds now being built by the municipality. A morning with Professor Berven at the Radium Institute, which will be removed to the nearly completed new general hospital, revealed remarkable work done under difficult conditions. A State-aided "follow-up" system organized for cancer patients enables former patients to return for examination.

In new Swedish plans the delegates found marked resemblance to the plans for their own new hospital, especially in the matter of small wards and the out-patient scheme, which will bring out-patients and in-patients together under one administration. It was noted also that Sweden has the same problem as this country, inasmuch as there is now hospital provision for the rich and the poor, but a marked lack of provision for the middle class.

Helsingfors, Tallin, Danzig

At Helsingfors Professor Wichmann's gynaecological hospital was the chief object of interest. Professor Wichmann came back specially from Copenhagen to spend the evening discussing his hospital and the problems connected with his work. The Red Cross emergencies hospital was also inspected.

At Tallin, Estonia, an interesting private nursing home and a military hospital of 350 beds were inspected, and the visitors found in Professor Stamm a most enthusiastic surgeon and authority on hospital planning. At Danzig Professor Volthard and Professor Klose took a great deal of trouble to explain the organization of the city's hospital services. The Municipal hospitals supplied material for observation and comparison, and the visitors were much impressed by the extensive well-organized and equipped radiographic department.

Copenhagen

Copenhagen, with the inspection of four hospitals, completed the tour and provided possibly the most interesting feature of it, the orthopaedic hospital there being alone regarded as sufficient recompense for the whole of the trip. The visitors had as their guide Chief-Surgeon P. Guildal, adviser to the Danish Board of Health, who took the main part in planning this great hospital centre. At Copenhagen the visitors also saw the Finsen Institute, and found much of interest in Professor Lomholt's work and description of this organization, which now includes the magnificently equipped new radium centre recently opened by the King of Denmark.

A report prepared by Mr. Bernard Docker, Mr. Rock Carling, and Mr. Power will be available for the use of other British hospitals seeking information about the practice and equipment of the hospitals seen on this tour.

RESEARCH FELLOWSHIPS IN TROPICAL MEDICINE

The Medical Research Council, on the advice of its Tropical Medical Research Committee, has made the following awards:

Senior Fellowship.—Frank Hawking, D.M., D.T.M., assistant lecturer in pharmacology, Welsh National School of Medicine, Cardiff. This is tenable for three years, for investigations to be made mainly in the Tropics. Dr. Hawking will work in Africa on the chemotherapeutic treatment of sleeping sickness.

Junior Fellowships.—David Alexander Cannon, B.Sc., M.B., Ch.B.; John Leslie Dales, M.B., Ch.B., assistant pathologist, Royal Hospital, Sheffield; Ian Wilson MacKichan, M.B., B.Ch., house-surgeon, London Hospital. These are also tenable for three years during the first two of which the holders will undergo training in this country in tropical medicine and in the use of research methods.

The Joint Tuberculosis Council announces that arrangements have been made with Dr. W. J. Fenton, the dean of Brompton Hospital, for courses of fourteen sessions in artificial pneumothorax work, each course to extend over a fortnight. The classes will be held on Mondays at 10 a.m. and 2 p.m., Tuesdays at 10 a.m., Thursdays at 6.30 p.m., Fridays at 10 a.m., and Saturdays at 10 a.m. and 2 p.m. Included in the courses will be four lectures on the general aspects of artificial pneumothorax therapy and detailed instruction in screening. After the members of the class have had a few days' experience of the practice at Brompton Hospital they should perform the actual refills, and, if possible, an induction themselves. Each course will be limited to four members. The duration of the classes will vary with the number of cases to be dealt with, but an average of two hours is a near approximation. The fee for the course is £5 5s., and all applications should be addressed to Dr. William Brand, Secretary to the Board for Postgraduate Courses, Joint Tuberculosis Council, 5, Cavell Church Place, Epsom, Surrey.

Local News

INDIA

The Armies in India

Volume II of the annual report of the Public Health Commissioner with the Government of India for 1935, which has recently been published, deals with the health of the British and Indian Armies in India, and reveals that in both cases there was a reduction in disease. In that year the combined ratio for the British Forces of those constantly sick in hospital and under treatment as out-patients was 47.42 per 1,000 of the strength, as compared with 49.19 in 1934. The decrease in the incidence of cerebrospinal meningitis continued; triple concentrated serum was the usual treatment, but in three cases iodine was also given intravenously with complete success. The incidence of sandfly fever remains unaltered, and no good system of prophylaxis has been discovered, nor have attempts to infect mice with material from human cases and so to secure a fixed virus proved successful. It is noticeable that, both with barracks and bungalows, the majority of men occupying old buildings with mud walls invariably succumb, whereas in new or well-repaired buildings the occupants escape, provided rubble heaps and other potential breeding places in the vicinity are removed. Some caution seems to be called for in the differential diagnosis of fevers of the typhus group; this at present turns on laboratory findings and is rendered uncertain by the possibility that enteric group infections might have some influence on proteus OX agglutinins in the serum. It is considered, therefore, that at present search must be continued for the enteric group of bacilli even in the various OX positive cases, especially in those in which the disease is mild and there is no rash. Further investigations in regard to this problem of diagnosis are proceeding. An outbreak of cutaneous and faucial diphtheria in a battalion engaged on the North-West Frontier in the autumn of 1935 presented some curious features. Abrasions of the skin caused by the rocky country were found in some cases to be harbouring Loeffler's bacillus, and there was also faucial diphtheria in some though not in all. For the treatment of these cutaneous cases diphtheria antitoxin was injected intramuscularly and also applied locally as a dressing. In most instances the ulcers were healing by the fourth day, and diphtheria bacilli could no longer be recovered from them. In some, however, the organism persisted in spite of there being a healthy granulating surface and serum treatment being prolonged; the best results here were obtained by applying mucidan as a dressing. The incidence of the enteric group of fevers increased slightly in the British Forces as compared with 1934, which was the lowest on record; in the Indian Forces there has been a progressive incidence since 1932, which is only partly explained by the fact that previously some cases of typhus were included as the result of faulty diagnosis. There has been very greatly improved bacteriological investigation of these cases during the last ten years. In 1935 there were nine deaths among the British and thirteen among the Indian troops, and in nineteen of these death occurred before the end of the second week, suggesting either an overwhelming infection or an ambulant type of the disease. Both the admission and death rates in men under one year's service in India fell markedly in 1934 and 1935 as compared with men whose service had been longer, and it is concluded that this fall may reasonably be attributed to the T.A.B. vaccine manufactured at the Royal Army Medical College since 1933. The case mortality was, however, disappointingly high during 1934 and 1935, mainly owing to the type of case previously described. The percentage of cases occurring within the first six months after reinoculation has remained almost constant during a period of seven years

at just above 30 per cent., which still appears unduly high, but no explanation is at present forthcoming. The incidence of dysentery remains stationary, and reasons are given in the report for fearing that this will continue to be the case until efficient sanitary services and a sanitary conscience have been developed, not only in military establishments but throughout the country. One of the striking features of the post-earthquake period in Quetta was a dramatic fall in the dysentery incidence among the troops. For several years previously the incidence in that station had been high and was actually increasing in spite of the most stringent precautions in the military area. The fact that from 1930–5 there were 21,000 fewer admissions for dysentery among Indian troops reflected the steadily improved sanitation among them since the post-war period, but, as in the case of British troops, it is feared that the position has now become stationary. Quetta was the second worst station in respect of malaria in 1934, but headed the list in 1935 with Peshawar and Agra second and third respectively. Efforts are being made to secure more protection in the new cantonment at Quetta, but unfortunately the main breeding stations lie outside military control. Very great improvement in this respect was noted in Delhi for 1935. Since the use of plasmoquine in the Army in India became almost universal the chronic relapsing cases of benign tertian malaria have almost disappeared; this treatment is generally preceded by atebrin.

Public Health in Bombay

In his report for the year 1935–6 Dr. J. S. Nerurker, executive health officer for Bombay, states that the excess of births over deaths was unequalled before 1931, the number of live births being now the highest on record since 1866, when such statistics began to be noted. The death rate was higher than in the previous year, owing largely to an epidemic of small-pox with 402 deaths, and increases in the mortality due to respiratory diseases and tuberculosis, dysentery, measles, and cerebrospinal fever. There were decreases in respect of plague, influenza, ague, and malaria. The population of Bombay is now much in excess of the census figures obtained in 1931. The previous negligence in registering births has been overcome to some extent by the provision of maternity benefit for the labour classes, which constitute 74 per cent. of the population of the city. The death rate among infants under the age of twelve months has increased in the poorer classes, mainly in consequence of respiratory diseases and immaturity; special efforts are being made to combat this by providing municipal district nurses, attendance at confinements, necessaries and comforts during the puerperium, maternity homes, and infant welfare centres and milk depots. The small-pox epidemic was responsible for 1,248 deaths, as compared with 152 in 1934; emphasis is placed by Dr. Nerurker on the vital importance of revaccination, which at present is optional in Bombay. The figures for the attendances at venereal clinics show that the proportion of new patients having primary syphilis and acute gonorrhoea is rising. Pre-nuptial examination is also becoming more popular. Difficulty is still experienced, however, in convincing patients of the need of submitting to the long treatment and the repeated tests for ensuring cure. The quantity of milk available is said to be inadequate, and its quality leaves much to be desired, though strenuous steps are now being taken to rectify these deficiencies. Dr. Nerurker concludes by stating that the principal causes of the insanitary conditions which maintain the death rate at a high level, even in non-epidemic periods, are the insufficiency of the sewers, the continuance of the basket privy system of conservancy, the density of houses and persons per acre, and the overcrowding in rooms and tenements. The water supply is adequate, the whole being chlorinated throughout the year, and no provision being made for filtration. The medical department is actively engaged in propaganda work and health education.

SCOTLAND

Edinburgh Venereal Diseases Scheme

The annual report for 1936 of the City and Royal Burgh of Edinburgh Venereal Diseases Scheme records the transfer of the wards and clinics at the Royal Infirmary to the new pavilion, which is shared with the department of dermatology. The number of beds available for venereal cases at the Royal Infirmary is now thirty-eight, and a further fifty-two are distributed among other hospitals in the city. In-patients treated during the year show an increase of 20 per cent. over 1935. It is stated that in female cases of severe gonorrhoea or syphilis a spell of intensive treatment in hospital is beneficial, shortening the subsequent period of out-patient attendance, and minimizing the risk of complications, which are especially prone to occur at the menstrual periods. An increase in the number of admissions to the two maternity hospitals indicates a greater interest in ante-natal examination, foreshadowing a diminished incidence of congenital syphilis and ophthalmia neonatorum. The report, stressing the difficulty of combating gonorrhoea, points out that the early symptoms in women are often extremely mild, and that, without microscopic examination, many cases must be overlooked. Also contraceptive practices, which now enjoy a wide vogue, give an impression of security against infection which may not be justified. It is suggested that, from the point of view of prevention, the provision of a hostel for the reception of infected girls is desirable. By this means girls could be removed from the streets during the period of infectivity. With regard to treatment of this disease the administration of acriflavine compounds, in addition to the usual routine irrigations, is producing encouraging results, the tendency to cause jaundice, noticeable in earlier preparations of this type, having so far diminished that no case of jaundice has yet appeared in the course of the investigation which is still proceeding.

Weil's Disease in Aberdeen

The annual report for 1936 of the medical officer of health for the City of Aberdeen includes an account of a special investigation into Weil's disease conducted by Dr. John Smith, regional bacteriologist. The incidence of this disease among fish workers in the city has created a special problem for the health authorities during recent years (*British Medical Journal*, 1934, 2, 1137, and 1936, 2, 1048). During the year under review sixteen cases came to the knowledge of the department, all occurring among employees of the fish trade. Each patient received institutional treatment, and there was one death—a male adult. In the previous year the number of cases was forty. It is stated that Dr. Smith's investigation has been directed towards producing an active immunization of the workers. Experiments on guinea-pigs demonstrated the development of a solid immunity, following the vaccination of the animals with living non-virulent strains or with killed emulsions of virulent strains of *L. icterohaemorrhagiae*. In view of this satisfactory outcome of animal experiments it was decided to test the effect of leptospiral vaccines on selected hospital patients. Mild cases of scarlet fever were chosen, in which the illness had, for all practical purposes, terminated within forty-eight hours of admission of the patient, the majority of whom were children between 8 and 14 years. Three series of patients were vaccinated, each series with a different preparation. Little local disturbance and no general reaction accompanied the vaccinations. In none of them, however, did vaccination stimulate the production of demonstrable immune bodies to the extent that might have been expected. The findings indicate the need for increased dosage to stimulate the further production of immune bodies. It is suggested that their presence, even in small

amounts, should be sufficient to give ample protection, since in the case of patients in the early stage of a leptospiral infection treatment with a dosage of anti-leptospiral serum, insufficient to produce demonstrable foreign immune bodies in blood samples, shows definite clinical evidence of its curative effect. It would therefore appear desirable to vaccinate workers whose daily duties expose them to a possible attack of leptospirosis.

ENGLAND AND WALES

The Hospitals of London

King Edward's Hospital Fund for London has issued a *Statistical Summary* for 1936 (1s., or 1s. 5d. post free, from 10, Old Jewry, E.C.2) of the income, expenditure, work, and costs of 145 London hospitals, from which it appears that there were increases in subscriptions, donations, and receipts on account of services rendered, the total amounting to £3,798,842 ordinary income, as compared with £3,647,311 in 1935. The income from legacies showed a definite fall, however, and the total general fund income amounted to £4,195,925, as compared with £4,196,170 in the previous year. The total general fund expenditure rose from £4,075,115 to £4,259,598, and thus there was a net deficit for the year under review of £63,673, as compared with a net surplus of £121,055 in 1935. This publication comprises an analysis of the general fund income and expenditure of the 145 hospitals, with statistics relating to bed accommodation, patients, and the cost of working, together with particulars of pay-beds and hospitals for infant welfare. It thus enables a financial computation to be made of the position of these hospitals at present, and certain detailed and general deductions can be drawn. Public benevolence towards the sick poor and accident cases still continues at a most meritorious height, but the inevitable expenses show no sign of any reduction, nor is it possible to envisage such relief in the immediate future. There are more in-patients and out-patients; the cost of their treatment has naturally increased slightly, but it would seem that all possible economies are being introduced. The figures for renewals and repairs have somewhat increased, as have also those for provisions, salaries, and domestic activities. These figures do not include capital sums required for rebuilding or for buying new apparatus, and it must be realized that the requirements of this kind will not decrease in the near future but are more likely to extend. The hospital economy committee of the King's Fund is doing its best to assist hospitals in any difficulties experienced in putting into operation the methods of internal control outlined in the appendix to the Revised Uniform System of Hospital Accounts, and the general public may rest assured that everything possible is being done to ensure that all financial assistance is being utilized wisely and well. There are now 18,200 beds available, nearly 200 more than in 1935.

Distribution of Measles Serum

The London Fever Hospital, Liverpool Road, N.1, has asked us to point out that, owing to the great difficulty in obtaining a large amount of convalescent measles serum, its small supply, while always available for the general public, has to be reserved for young children and more especially for weakly and ill children in whom an attack of measles would be dangerous. It is impossible to supply this serum for every contact. The hospital has asked us to point out this to avoid in future the irritation of disappointment of a refusal when general practitioners wish [illegible] older people. The resident medical officer is, however, always glad to hear of cases in which the serum [illegible].

Correspondence

Care of the Vocal Cords in Singers

SIR,—The exigencies of immediate publication prevented me from including in my paper, read in the Section of Oto-rhino-laryngology at Belfast and published in your issue of July 31, an observation which I think is of some importance and which completes the argument I there advanced.

In the paper itself I ventured to make the generalization that there is no such thing as a natural singing voice. I stated that I had never heard of a leading opera singer or even a chorus singer at Covent Garden who had not been taught how to sing, and that singing is an acquired art; wherefore it follows that with increased knowledge and experience and more care of the vocal cords the best voices have yet to be heard.

An interesting comment on this view is afforded by an experience I have had of original singing of the same kind as must have been heard perhaps thousands of years ago. From 1923 onwards I have had the good fortune to visit Central and East Africa on many occasions, traversing unknown paths in the Sudan, Abyssinia, Uganda, Kenya, and Tanganyika. In the remote parts of these areas, especially on festival days, I came across occasional groups of primitive natives singing either casually among themselves or deliberately to encourage dancing, which would go on for hours on end. The singing was accompanied by tom-toms, the drums originally used for conveying messages or warnings from tribe to tribe. But what singing it was! None of the women or children sang, but only the men, and in their singing voices there was not a semblance of resonance, harmony, or musical quality, the notes being usually limited to three or four. In all these regions this rough production and quality was about the same. Among these people there was no balance or synchronization between the singing and the speaking voice. Yet the vocal cords of the primitive African are the same to all appearance as those of the cultivated European. If singing is a natural endowment the apparatus is available.

This observation appears to me to bear out the point I made in my paper that the vocal cords are not constructed by Nature for singing purposes.

If there is any fallacy in this comparison I should be happy to have it pointed out. Let me apologize to you, Sir, for taking up your space with this postscript.—I am, etc.,

London, W.1, July 31. MILSOM REES.

Visual Standards for Aviators

SIR,—In view of the publicity which is now being given to the visual standards set for civil aviators, and the criticisms which are being offered in this connexion, may I reply to the letter by Mr. Myles Bickerton printed in the *Journal* of July 17?

First of all, nearly everything in this connexion was discussed in my lecture before the Ophthalmological Congress in Oxford this summer, and will appear in due course in the *Transactions*. For our present purpose it should be realized that we are dealing only with civil aviators. Now civil aviators have this peculiarity—namely, that they are not a local or even a national affair, but become international property so far as their medical (in-

cluding visual) standards are concerned. It is evident that my friend Mr. Bickerton, with whom I shared both the dissecting room at Cambridge and parts of the River Cam during our mutual studies at the University, has never faced the International Convention of Air Navigation in Paris with the purpose in hand of fighting for reasonable visual standards in the interests of our civil pilots and of flying in general. Had he done so he would appreciate that it is no mean task.

The last two visits to Paris have been devoted by me in endeavouring to obtain certain reductions in visual acuity for B licence (passenger-carrying) pilots, and also some alteration in the strict ruling for colour vision. The A licence pilot has in these discussions followed the same pathway, his visual acuity, however, being based on correction by glasses to the necessary vision.

The feeling which tends to creep into aviation circles that the medical authorities are working overtime to make things difficult is unfortunate, as exactly the reverse is the case. The consultant staff at the Central Medical Establishment are constantly reviewing the standards in order to fit that which is practical and common sense into the general scheme of progress. If this particular work in Paris had not been undertaken in the interest of civil pilots, several of our best men would now be on the ground.

The whole point at issue with regard to *one-eyed* pilots is that of their danger, not to themselves if it amuses them to take risks in the air, but to others who, being visually normal, may become the victims of their fellow club-member's blindness. As I said in my Oxford lecture, the problem of the bad eye is not one of *visual acuity* but of *visual field*, as there is no question whatsoever that a pilot with a completely blind eye, either through extreme injury or actual excision, is a source of very potential danger to others in the air. If, as Mr. Bickerton remarks, there are 700,000 people handicapped in this fashion in varying degrees, it is the more important that we proceed with reason with regard to the slackening of standards. I wonder what the attitude of the passenger of the air would be towards his future travel if it was shown at a coroner's inquest that a one-eyed A licence pilot, through his visual handicap, had turned into an air liner in flight and killed the occupants?

I know of no regulations passed regarding pre-1919 pilots being permitted to fly on an A licence having sustained loss of one eye. All present standards fall within I.C.A.N. regulations, a large volume of some 120 pages, and certain local British adjustments for our own benefit, set down in Air Navigation Directions 1936 (A.N.D. 13), obtainable from H.M. Stationery Office.—I am, etc.,

P. C. LIVINGSTON, F.R.C.S.Ed., D.O.M.S.,
Wing Commander; Consultant in Ophthalmology, Royal Air Force.

Central Medical Establishment,
Royal Air Force,
July 27.

Pulp-space Infection

SIR,—I read with interest Mr. James Hardman's admirable review of pulp-space infection in the *Journal* of July 24 (p. 156). I would especially commend his classification and the influence which this has on the actual incision.

In 1930 I was instrumental in inaugurating a "septic hand clinic" at the Liverpool Royal Infirmary, as I felt that the importance of these conditions could not be overestimated. Although agreeing in the main with Mr. Hardman's views, I dislike the transfixion operation which he advocates. Kanavel points out that the blood supply of the diaphysis of the terminal phalanx is derived largely from the vessels in the closed fibrous compartments of the pulp, and that thrombosis of these vessels causes bony necrosis. A transfixion operation such as Mr. Hardman practises must divide many such vessels running to the periosteum, and thus predisposes to necrosis of bone. A lateral incision down to, and draining, the pus pocket need not necessarily transfix the finger, and will not injure more vessels than is absolutely necessary.

Again, it is not desirable to use rubber drainage material in the majority of these cases, as the pressure of the rubber drain sometimes tends to cause sloughing of the fibro-fatty "filling" of the pulp. The finger is already swollen, and a linear incision immediately becomes an elliptical gap providing adequate drainage without any further interference. Sloughing of part of the fibro-fatty pad can cause as serious sequelae as necrosis of the diaphysis, since the loss of the pulp leaves the digit with a tender extremity not suited for pressure-bearing, and permits the nail to become deformed, curving forwards towards the ventral aspect. Lastly, a straight wooden splint maintains the finger in an uncomfortable posture; a small curved metal gutter splint allowing slight flexion at all three joints is preferable.—I am, etc.,

Liverpool, July 26. J. COSBIE ROSS.

Elongation and Dilatation of the Colon

SIR,—Professor J. R. Learmonth's interesting and instructive contribution to your issue of July 24 (p. 154), while well calculated to clear the ground and to emphasize the fundamental distinction between megacolon proper and the peculiar redundancy of the colon known as *dolichocolon*, appears to shrink from some of the conclusions which can be drawn from a consideration of this somewhat difficult subject. Without agreeing with Mr. Slesinger (*Lancet*, 1926, 2, 274) that dolichosigmoid forms in itself a sufficient indication for colectomy, we must maintain the standpoint we took in your columns four years ago (1933, 2, 1), that dolichosigmoid, though not in itself a "surgical lesion," is, from its nature, peculiarly liable to give rise to surgical complications. The occurrence of mesosigmoiditis, or of adhesions following pelvic inflammation, etc., will tend to fix and approximate the ends of the elongated loop, and if the elongation is sufficient all the factors required for the production of a volvulus are present.

The study of the clinical and radiological features in such cases led us to the view that a certain class of patient, not by any means of extreme rarity, does actually suffer from symptoms due to recurrent attacks of sigmoid volvulus. They present exactly the features long ago described by Edgren and others as premonitory of sigmoid volvulus, as noted in the previous histories of patients admitted for acute intestinal obstruction from this cause—namely, chronic constipation, pain on defaecation, attacks of local distension, attacks of colicky pain followed by watery or sometimes blood-stained diarrhoea, the diarrhoea being caused by a transudation from the bowel consequent on venous occlusion from torsion. Such cases are still too often classed casually as "colitis" without any genuine attempt being made to arrive at a correct diagnosis.

Their radiological examination, which must include a combined air-and-barium filling of the colon, will show: (i) an elongated sigmoid, the essential predisposing factor; (ii) fixation and approximation of two points at either end of the loop; (iii) occasionally an actual torsion of the

folds of the colonic mucous membrane will be seen, generally above the lesion.

The combination of (i) and (ii) may give rise to recurrent attacks of volvulus, which, in our experience, is a not infrequent cause of chronic invalidism; as to its prognosis we may quote Pauchet: "*Le volvulus n'est jamais un accident; c'est une échéance.*"

It thus appears advisable to distinguish at least three types of dolichosigmoid: simple dolichosigmoid, which is not an indication for surgery; dolichosigmoid complicated by megasigmoid, for which sympathectomy may be indicated; and dolichosigmoid complicated by mesosigmoiditis or other local cause, producing a recurrent volvulus, for which the treatment is surgical, and in our experience excision of the loop, followed by end-to-end junction, has given the best results.—We are, etc.,

D. Ligat.
T. D. Overend.

St Leonards-on-Sea, July 26

When to Operate in Appendicitis

Sir,—Mr McNeill Love has given us a most clear and concise account of the "expectant" method of treatment of acute appendicitis; he estimates the proportion of cases in which the method has to be abandoned, and the method may be said to have failed, at 10 per cent. I would like to point out another weakness in this method, which concerns those patients in whom the treatment has been successful in the first place but who then fail to return according to plan to have the appendix removed at a later date. Such cases are not uncommon, and the following is an example.

A male, aged 20 years, was admitted to St. James's Hospital on April 27, 1936, with acute appendicitis of sixty hours' duration. An "indefinite swelling" was palpable. Expectant treatment was instituted with the happy result that resolution occurred; the patient left hospital without operation, and was free from symptoms on May 13, 1936. The most emphatic instruction was given that he was to return in three months' time for appendicectomy (as is the routine in such cases). This instruction he ignored, and his next appearance was on September 5, 1936, when he was brought to hospital again, this time with a well-formed appendix abscess. Simple drainage was performed, and the patient left hospital after the wound had healed again with emphatic instruction about returning for appendicectomy—which he again ignored. On July 19, 1937, the patient returned to hospital with a third appendical attack; a definite mass was palpable on admission, but appendicectomy was performed on July 24, 1937—not without some little difficulty. The patient is now convalescent.

"All's well that ends well" will be the obvious comment for the disciples of Ochsner and Sherren to make; but it seems reasonable to assume that the patient would have been subjected to less risk had an immediate appendicectomy been performed on his first admission to hospital in April, 1936—apart from the fact that he has been an invalid on and off for fifteen months owing to appendix trouble.

Of course if it were possible to kidnap these defaulting patients on the expiry of the appropriate three months the monotonous sequence of events in the present case would have been cut short. But there is, unfortunately for the success of the expectant treatment, no provision for such a contingency. The responsibility for these cases is not discharged until appendicectomy has been performed, and when accidents occur owing to the patient's neglect to return the surgeon is indirectly responsible in that he might have prevented any such possibility by an [illegible] operation in the first place.

[illegible] expectant treatment is contemplated, it would [illegible] necessary (among other things) to estimate [illegible] of a person the patient is, and whether he is likely to carry out instructions when he leaves hospital. Otherwise the end-result may be that this method of treatment fails, albeit the immediate surgical "expectations" are completely realized.—I am, etc.,

St. James's Hospital, S.W.12, Aug. 1. R. S. Lawson, M.S.

Chronic Monocytic Leukaemia

Sir,—I have read with interest Dr. J. D. Hay's letter (July 24, p. 184) concerning the size of the spleen in monocytic leukaemia, a point discussed in my article in the *Journal* of July 3 (p. 1). In Osgood's article (*Arch. int. Med.*, 1937, **59**, 931) an analysis is made of all cases reported as monocytic leukaemia, the strength of the evidence for the diagnosis being very variable in different cases. Osgood states that in 84 per cent. of 117 cases the spleen was reported as being enlarged, either "palpable, enlarged to percussion, or of definitely increased weight at necropsy," and the average weight in the few cases in adults in which it was recorded was 473 grammes, which would generally mean palpable enlargement. In view of this it would perhaps be better to say that most cases of monocytic leukaemia are acute, and that there is usually only moderate splenic enlargement. Dr. Hay doubts the wisdom of gauging the chronicity of a case of this description by the degree of splenomegaly. I fully agree that a case may be of some duration without having much splenic enlargement, but the converse, I think, does not hold. As I stated in my article, I consider extreme splenomegaly (in my case the spleen weighed 1,531 grammes) to imply chronicity, and chronicity in monocytic leukaemia is a very rare feature.—I am, etc.,

Manchester, July 26. G. Stewart Smith.

Hereditary Sebaceous Cysts

Sir,—I think that cases of hereditary sebaceous cysts of the scalp, such as that described in the *Journal* of July 24 (p. 185), are the least uncommon variety of sebocystomatosis (Pringle's steatocystoma multiplex), well illustrated by the condition in two brothers demonstrated by Dr. A. Schlüter and myself at the Dermatological Section of the Royal Society of Medicine (autumn, 1936). In those two brothers most of the surface of the body was affected. The cysts were chiefly small, but there were also larger ones. Those on the fingers were conspicuous; those on the scrotum were typical; and one in the groin was large enough at first sight to resemble an inguinal hernia.

In the *Urologic and Cutaneous Review* for July, 1937, I drew attention to another (? not hereditary) type of sebocystomatosis. The patient was a young woman who had minute cutaneous cysts almost limited to the axillae. Microscopical examination (Dr. W. Freudenthal) showed them to arise from the hair follicles. Their position suggested that they might have been derived from apocrine glands, but on careful examination no dilated apocrine tubercles were found.—I am, etc.,

London, W., July 28. F. Parkes Weber.

Ionization for Hay Fever

Sir,—In the *Journal* of July 31 (p. 245) Mr. C. A. Hutchinson criticizes me on three points, but to all of them I still adhere. (1) Fibrinous exudate after ionization I have seen, and damage to cilia is the point of the American criticism. But the mucosa recovers. And therefore (2) metaplasia does not usually occur, or at least persist. Only once have I seen a case of hay fever with meta-

plasia and that was one of pronounced atrophic rhinitis. This man has had only one attack, promptly relieved by one ionization. It is conceivable that a mucosa that has had repeated cauterization may show metaplasia, but for my statement that the nose is normal between attacks my critic will find confirmation on page 723 of Coca, Walzer, and Thommen's authoritative book, and they have had vastly more experience of hay fever than I. There is no metaplasia in the nose of the doctor whose case I quoted. On the contrary, he has a slight tendency to polyp formation, and polypi are common material for the demonstration of cilia to students. (3) Mr. Hutchinson says that for paroxysmal rhinorrhoea ionization is palliative, "very rarely curative." Why, then, object to my expression "mostly futile"? I tried to indicate a better, because more permanent, way.—I am, etc.,

JAMES ADAM.

Glasgow, July 31.

Agranulocytosis and Para-aminobenzenesulphonamide

SIR,—I have had the opportunity of observing a case similar to the one reported by Dr. C. I. Young (*Journal*, July 17, p. 105).

The patient was a young man aged 20, who was suffering from acute rheumatism with pains in the joints and pyrexia. He could not remember having had any previous attacks. The heart showed clinical signs of old endocardial lesions—aortic regurgitation and mitral stenosis—and there was evidence of a superimposed infective endocarditis—enlarged spleen, clubbed fingers, and pallor. The blood culture was negative and the leucocyte count was 6,100 per c.mm.

The patient was given 90 grains of sodium salicylate daily, but the pyrexia never subsided for any length of time. Sixteen days after admission the leucocyte count was 8,200 per c.mm. Twenty-three days after admission he was put on para-aminobenzenesulphonamide (proseptasine, May and Baker), 3 grammes daily. His condition did not improve, and the drug was discontinued after eighteen days. Again the blood culture was negative. Two days later the patient had only 600 leucocytes per c.mm. (45 per cent. haemoglobin, 2,800,000 erythrocytes per c.mm.), and greyish-white spots appeared in the pharynx. On the same evening 300 leucocytes per c.mm. were present. He received a blood transfusion and pentnucleotide. The next day he died. The leucocyte count before death was 1,000 per c.mm., all the cells being lymphocytes.

Although there is no proof that agranulocytosis was due to para-aminobenzenesulphonamide, this case and Dr. Young's case suggest the advisability of a daily leucocyte count in cases in which this drug is given over long periods. (See also *J. Amer. med. Ass.*, 1927, **89**, 1377.)—I am, etc.,

ALFRED MODEL.

Leeds, July 23.

Prominal in Epilepsy

SIR,—I was interested in the articles published in the *Journal* of July 10 by Dr. Guy Millman and Dr. C. J. Henderson on their experiences of the use of prominal in substitution for luminal in the treatment of epilepsy, as I have been using luminal since 1913, and latterly prominal, also in such cases. Both these drugs are superior to the bromides in many cases in reducing the frequency of the fits. They have the further advantage over the bromides in not producing the same dulling effect on the mentality of the individual. But both luminal and prominal are of foreign manufacture and are very expensive preparations.

I wish therefore to draw attention to "phenobarbitone soluble," the "home-made" product, which is obtainable at one-fifth the price and produces equally good results, as I mentioned in my report on the Devon Mental Hospital for 1934. New preparations for the treatment of epilepsy spring up in the market like mushrooms, but we have yet to find *a cure* for this disease.—I am, etc.,

RICHARD EAGER.

Countess Weir, Nr. Exeter, Aug. 2.

More Light—Better Sight?

SIR,—That maximum visual acuity does not occur beyond a certain intensity of light has for long been understood by physicists. On July 16, 1857, the late John Tyndall, F.R.S., spent an interesting day on the Mer de Glace making observations on the appearances presented by "dirt-bands." In his book, *The Glaciers of the Alps*, inscribed to Michael Faraday in 1860 he wrote:

"The illumination of the glacier has great influence upon the appearance of the bands; they are best seen in a subdued light, and I think for the following reasons: The dirt-bands are seen simply because they send less light to the eye than the clearer portions of the glacier which lie between them; two surfaces, differently illuminated, are presented to the eye, and it is found that this difference is more observable when the light is that of evening than when it is that of noon."

"It is only within certain limits that the eye is able to perceive differences of intensity in different lights; beyond a certain intensity, if I may use the expression, light ceases to be light and becomes a pain. The naked eye can detect no difference in brightness between the electric light and the limelight, although when we come to strict measurement the former may possess many times the intensity of the latter. It follows from this that we might reduce the ordinary electric light to a fraction of its intensity without any perceptible change of brightness to the naked eye which looks at it. But if we reduce the limelight in the same proportion the effect would be very different. This light lies much nearer to the limit at which the eye can appreciate differences of brightness, and its reduction might bring it quite within this limit and make is sensibly dimmer than before. Hence we see that when two sources of intense light are presented to the eye, by reducing both the lights in the same proportion the *difference* between them may become more perceptible.

"Now the dirt-bands and the spaces between them resemble in some measure the two lights above mentioned. By the full glare of noon both are so strongly illuminated that the difference which the eye perceives is very small; as the evening advances the light of both is lowered in the same proportion, but the differential effect upon the eye is thereby augmented, and the bands are consequently more clearly seen."

—I am, etc.,

ANDREW FERGUS.

Hindhead, July 25.

Ocular Headache

SIR,—I am grateful to Mr. L. G. Scoular for raising several critical points in his letter (July 24, p. 186), and for the opportunity to reply to them in extension of my paper on ocular headache.

To me there must exist some doubt concerning the undemonstrable hypothesis that astigmatism and hypermetropia give rise to headaches solely by imposing "some kind of strain on the ciliary muscle." I would like to draw attention to the rarity of complaints of headache of ocular origin in individuals with only one useful eye, even though this may be a hypermetropic one. The squinter who has suspended the use of one eye has solved his muscle-balance problem in his own way, and though

he often needs to make a considerable effort of the ciliary muscle for unaided close work does not seem to be so liable to headaches from this cause. The discomfort occasioned by astigmatic errors "against the rule" or at an oblique angle is due, as I believe, to our adoption of letter forms suited to the physiological majority. Sufferers from discomfort of this nature are likely to associate their headaches with ocular effort and to take direct measures to secure attention to their eyes. They will tell their doctor that their eyes are troubling them and merely seek his help as an intermediary to obtaining specialist advice. The standard of ventilation of public places of entertainment is higher than it was, but cinema eye ache continues to be more conjunctival than visual, often by atmospheric aggravation of an antecedent conjunctival congestion which may or may not be referable to refractive error. The conditions cited by your correspondent having obvious pointers to the source of the trouble are unlikely to mislead, and are omitted with intent from my paper in order to confine it to acceptable if condensed limits. It is in cases of migraine and in obscurer types of headache generally that the practitioner may find assistance from a simple estimate of the near point eye muscle balance in bringing to order the vague history given by a patient, possibly regarded on other excellent grounds as neurasthenic.

Mr. Scoular, having, like myself, served a brief apprenticeship in general practice, appreciates that the practitioner has neither the time, the inclination, nor the proficiency for accurate retinoscopy (in diminishing order of insuperability). My paper was written and compressed to an economic minimum of these three—and of equipment expense that any practitioner can achieve, and that will be of practical use to him in a life already fully occupied in the wider aspects of medicine, of which headache in general, and ocular headache in particular, are relatively minor details. If in attempting to cover the matter briefly my remarks appear unduly dogmatic I ask Mr. Scoular to ascribe it to the exigencies of space rather than a failure to keep an open mind.—I am, etc.,

Hull, July 29 STENHOUSE STEWART.

Commerce Without Conscience

SIR,—The article on this subject in the issue of July 24 (p. 178) is the best thing I have read for many a day, and is not without a fair amount of subtle humour which makes it all the more enjoyable. Could it not find its way into the public press? For, while the *Journal* can be seen in many public libraries and elsewhere, it is not widely read by the patent medicine consumers.—I am, etc.,

Leven, Fife, July 26. R. B. G.

The British standard specification for centrifuge tubes and sedimentation vessels for the determination of visible dirt in milk, No. 736, which has just been published by the British Standards Institution, has been prepared at the request of and in co-operation with the Dirt in Milk Subcommittee of the Analytical Methods Committee formed by the Society of Public Analysts and other Analytical Chemists. The centrifuge tubes are primarily designed for the determination of visible dirt in milk by the method developed by the above subcommittee and described in its report (*Analyst*, 1937, **62**, 287). It is anticipated, however, that the tubes may be found of use in other applications besides the one for which they are primarily designed. Copies of this British Standard (No. 736–1937) may be obtained from the Publications Department, British Standards Institution, 24, Victoria Street, S.W.1, price 2s. post free.

Obituary

PROFESSOR F. DE LAPERSONNE

As briefly announced in our last issue France's Grand Old Man in ophthalmology, Professor Félix de Lapersonne, has passed away after a prolonged illness which, though it robbed him of the use of his legs, failed to cloud his indomitable spirit. His personal charm and air of old-fashioned distinction marked him out wherever medical men met, and he carried his many honours with an easy graciousness. Born in 1853 in Toulouse, he was an intern in a Toulouse and later in a Paris hospital. He served under Le Dentu, Péan, and Panas, being the latter's first assistant in the ophthalmological service of the Hôtel-Dieu. In 1886 he moved to Lille, where he became professor of clinical ophthalmology in 1890 and doyen from 1893 to 1901. On the retirement of Professor Panas he succeeded in 1901 to the chair of clinical ophthalmology at the Hôtel-Dieu, and here he remained till 1924. In 1918 he was elected a member of the Academy of Medicine, and he became its president in 1931. As the first President of the International Association for the Prevention of Blindness he proved both an ornamental figurehead and an inspiring organizer in spite of his advanced years. A list of the many ophthalmological subjects on which he published original studies is given in *La Presse Médicale* for July 14. He was, by the way, a very active member of the scientific board of this weekly publication.

By the death of Dr. ALEXANDER MORTON on July 18 at the age of 82 Glasgow loses its oldest and one of its ablest dermatologists. At the University there he took his M.A. degree in 1876, graduated in medicine in 1880, and proceeded to the M.D. in 1885. Although for many years he was a general practitioner he had paid special attention to skin diseases and studied in Dublin and Vienna. He became a member of the Dermatological Society, lecturer on dermatology at St. Mungo's College, and physician for diseases of the skin in Glasgow Royal Infirmary. Dr. Morton had been a member of the British Medical Association for thirty-three years, and when the Association met at Edinburgh in 1898 he acted as a vice-president of the Section of Dermatology. As a consultant he developed an extensive practice, and no doubt he owed much of his success in the treatment of "skins" where others failed to his long experience in general practice, for those practitioners who sent him their patients realized that he was no mere "oleaginous physician," but treated the skin from the inside as well as from the outside. During his later career he was much handicapped by steadily increasing otosclerotic deafness. Nevertheless he was able to handle successfully difficult cases almost up to the time of his death. If genius is the capacity for taking pains Alex. Morton had it, and could make his patients attend to those minutiae essential to success in dermatology. He will be missed by patients and colleagues alike.

J. A.

Dr. CHARLES HENRY BURTON THOMPSON died in Suva, Fiji, on June 22, as the result of a spinal injury incurred by falling from a horse on June 22. He was then in his 57th year. A student of the Middlesex Hospital, he obtained the diplomas M.R.C.S., L.R.C.P. in 1907; he became D.P.H.St. Andrews in 1924, and D.T.M.Liverp. in 1925. His earlier appointments included those of house-surgeon to the Oxford Eye Hospital and ophthalmic and aural surgeon to No. 19 General Military Hospital. He was a member of the British Medical Association. After qualification he practised in India from 1911 to 1914, before which he had been assistant medical officer of

health to the Somerset County Council, and filled appointments at the Moorfields Eye Hospital, the Royal Westminster Ophthalmic Hospital, the Golden Square Ear and Throat Hospital, the Queen Square Hospital, and the West End Hospital for Nervous Diseases. Just before going out to Fiji in 1925 he had been resident medical officer at the Highfield Sanatorium, Liverpool. At Suva he was medical officer of health and school medical officer, and an official member of the Suva Town Board; he was very popular and highly esteemed in Fiji. As port medical officer there he made numerous friends. His funeral on June 23 was attended by a large number of his friends and colleagues, students from the Central Medical School acting as pall-bearers. After the service at the graveside three volleys were fired by a detachment of the Fiji Defence Corps, and the Last Post was sounded. The cathedral service was taken by the Bishop of Polynesia. Dr. Thompson leaves a widow, and a daughter aged 16.

We regret to announce the death on July 21 at Llandrindod Wells, Radnorshire, of Dr. JOHN MURRAY, O.B.E. He was born in Glasgow on February 5, 1871, the son of Alexander Murray, and from Hutcheson's Grammar School went to study medicine at Anderson's College and the University of Glasgow, graduating M.B., C.M. in 1894. Dr. Murray practised for many years at Llandrindod Wells, and was appointed medical officer to the hospital in 1905; he was also medical officer to the Post Office and certifying factory surgeon. During the war he served as major, R.A.M.C.(T.F.). He joined the British Medical Association in 1907, and had been president of the Shropshire and Mid-Wales Branch.

Medico-Legal

SEPTICAEMIA OR AGRANULOCYTOSIS?

The Manchester city coroner recently heard an inquest on a woman of 59 who died in the Manchester Royal Infirmary. Her husband said that she had taken "yeast-vite" tablets at intervals since 1931. She had been in fairly good health until June 3, but on June 5 she became very ill and the doctor sent her to hospital. She took two tablets after each of her meals on June 3 and 4. She had scratched her finger by some unknown means shortly before her illness. Her general practitioner stated that on June 5 she had a high temperature. He had incised a red swelling on her finger, but she had shown no signs of septicaemia. He had sent her to hospital next day with a diagnosis of some form of blood poisoning. She died on June 14. The city analyst said he had recovered no poison from any organ. The tablets had contained 12.1 per cent. by weight of amidopyrine and 6 per cent. of phenacetin. He thought that death was accelerated by the drug, and said that on certain types of persons it would have a very specific and harmful effect.

The coroner adjourned the inquest for the manufacturers to be represented, and at the adjourned hearing the manager of the local co-operative stores said he had sold "yeast-vite" to the deceased since 1931; he had never received a communication from the manufacturers about the substitution of a new formula or any restrictions on its sale. Counsel for the stores said that a notice calling in all "yeast-vite" stocks was contained in the weekly price list sent out on May 8, 1936. Counsel for the manufacturers, Mr. G. D. Roberts, K.C., said that the tablets had been sold at the rate of 80,000,000 a year for many years and that they had been suspected in only one case, that of a young woman who had died in 1935. Her death had been found due to septic teeth. Since that time, however, amidopyrine had been left out of the tablets. Dr. D. L. Griffiths expressed the opinion that death was due to agranulocytosis caused by amidopyrine and not to septicaemia. There were no micro-organisms in the blood. Sir William Willcox said he had no doubt that death was due to septicaemia caused by the wound in the finger. It was inconceivable that the doses taken on June 3 and 4 could have caused the dramatically acute symptoms. On the question of an idiosyncrasy, he remarked that she had been taking amidopyrine for years, and if she had had an idiosyncrasy it would have manifested itself some time before.

The jury returned an open verdict that death was due to a toxic condition without sufficient evidence to show the type or cause.

Medical Notes in Parliament

In the House of Lords, on July 30, the Royal Assent was given to the Finance Act, the Factories Act, the Local Government Superannuation (Scotland) Act, the Agriculture Act, the Matrimonial Causes Act, the Cinematograph Films Act, the Coal Mines (Employment of Boys) Act, the Local Government Superannuation Act, the Milk (Amendment) Act, the Royal Samaritan Hospital for Women Glasgow Order Confirmation Act, the Ministry of Health Provisional Order Confirmation (South-East Essex Joint Hospital District) Act, and the Liverpool United Hospital Act.

Bills introduced this session but now dropped include the Divorce (Scotland) Bill, Infanticide Bill, Local Authorities (Hours of Employment in Connexion with Hospitals and Institutions) Bill, Protection of Animals Bill, Registration and Regulation of Osteopaths Bill, and the Seafish (Dyeing and Colouring Prohibition) Bill. The Prohibition of Vivisection on Dogs (Scotland) Bill is listed as withdrawn.

Both Houses now stand adjourned till October 21.

Health of Scotland

An estimate was discussed in the House of Commons on July 22 for completing the sum required towards the salaries and expenses of the Department of Health for Scotland, including the grant-in-aid of the Highlands and Islands Medical Service and other services. The debate which followed was chiefly concerned with housing in Scotland. Dr. ELLIOT said the Scottish building industry showed a great output, but it was working under big strain. There was a shortage of men and, to a smaller extent, a shortage of certain materials. The Department was endeavouring to stimulate greater activity following the publication of a Report on Rural Housing, and a circular had been issued to all county councils recommending a more adequate inspection of rural houses and special surveys of the houses for farm servants and crofters.

Mr. FOOT spoke of overcrowding in Dundee, where, he said, there was no prospect of houses under the 1935 Act being available for two or three years for the relief of overcrowding.

Mr. LEONARD asked what was being done to urge local authorities to supply domestic helps, especially in view of the fact that the duties of midwives in the future would differ from what they had been in the past, when midwives were able to give domestic help in addition to their other duties. He also asked the Department to attend to the question of maternity homes. Under the Maternity Homes Act it was possible for a maternity home to have only one qualified person, and that person might be the superintendent herself. The total number of maternity homes registered with Scottish local authorities in February, 1937, was 146, and the nurses employed in the homes numbered 747. The nurses who had neither the Central Midwives Board qualification nor were registered in the general part of the registry of nurses numbered 107. If in some maternity homes there was not a proper proportion of qualified nurses he hoped the Department would take the matter up. Mr. WESTWOOD said the estimates only provided £36,000, as against £70,000 last year, for water supplies in rural areas. This was insufficient. In regard to building, twenty authorities had stopped building because of rising costs.

HIGHLANDS AND ISLANDS MEDICAL SERVICE

Mr MALCOLM MACMILLAN drew attention to the difficulties in the Highlands and Islands Medical Service of those who had to travel long distances to isolated cases in out-of-the-way places. Lack of transport added to the difficulty of serving people as they should be served. Nothing had been done since Dr Elliot took office to improve the lot of doctors and nurses in the Western Isles. Often the patient had to be carried from the far end of Harris to Stornaway to get to the only hospitals with proper equipment and accommodation. The telephone service required extension and improvement and the water supply should be improved, for many places in the Islands depended on shallow supplies which were used by cattle as well as by human beings. There was no communal sanitation in the Western Isles outside Stornaway and perhaps two other towns. Serious consideration should be given to the development of the air service for ambulance purposes. Housing was bad in the Western Isles; there were hundreds of ill-ventilated, dark, and insanitary houses. Fortunately new houses were being built with Government assistance, but the lack of water was felt in these houses also, and they had no internal water supply.

Mr BUCHANAN said last year 60,000 applications were made in Glasgow for houses, and this year nearly 8,000 more people wanted houses. On June 30, 1936, there were under construction in Glasgow for overcrowding and slum clearance, and for ordinary purposes without State assistance, a total of 2,687 houses. This year at the same period the total was 2,839. There was practically no change. There was an increase in those authorized but not begun. In his own division 1,700 houses were unfit for human habitation.

Mr. GUY doubted whether the total given by Dr. Elliot of 17,000 new houses to be built by Scottish local authorities in 1937 would be completed. In Edinburgh at the present rate of progress thirty to thirty-five years would be required to eliminate the condemned and overcrowded houses.

Replying to the debate Mr. WEDDERBURN said the present rate of slum clearance was satisfactory by comparison with the rate for any year previous to 1933, but unsatisfactory because it did not suffice to remove slums, let alone overcrowding, within a reasonable period of time. In 1933 it was hoped that both in England and in Scotland slums would be removed by the end of 1938. Since then they had removed 43,000 slum houses in Scotland, but the Department of Health estimated that there was probably another 15,000 houses to be removed. Whether this would be done in another five years depended entirely upon additional provisions which the Department had been able to make for increasing the supply of labour.

The proposal to reduce the estimate was defeated.

Milk Regulations

In the House of Commons, on July 23, Mr. W. S. MORRISON moved that the amendments of the Milk Marketing Scheme, 1933, be approved. He said of 44,000 producers who had voted on the draft amendments 87 per cent. were in favour. A public inquiry had subsequently been held and the amendments, with certain modifications, had been assented to by the Milk Board. Amendment 2 gave power to the Board to regulate the manner in which milk might be graded by, or on behalf of, traders and producers. Producers of tuberculin-tested milk were brought into the scheme for the first time to secure that this milk should be marketed through the national organization under conditions which would encourage the continued production of this valuable article.

Mr. A. V. ALEXANDER said regard ought to be had to the difficulties which had arisen in connexion with the cancellation of contracts where producers had been found guilty by the Courts of adulterating milk. He knew of a case in which [illegible] were found guilty of wilful adulteration, but the Board was compelled to continue to accept supplies from [illegible]. Adulterated or unsatisfactory milk should be [illegible] not fit for sale, and a producer who had [illegible] of producing unsatisfactory milk should be prevented from selling milk until he provided evidence that it was suitable. He doubted whether producers of graded and tested milk were being called upon to make a sufficient contribution in comparison with other producers who had to contribute to the pool. For some time bodies like the Food Council and the Consumers Committee had made references, not always favourable, to the possibility of having milk delivered without the process services of pasteurization and bottling to be sold at differential prices. The argument was that the price of milk could be reduced if the consumer paid only for the type of service rendered. Behind that lay the more important consideration of public health. In the epidemic last year at Bournemouth over fifty deaths and over 500 cases of typhoid fever were traced to the supply of milk from one producer who sold milk raw. At this moment two municipal corporations, Poole and Glasgow, had Bills before the House with a clause in each taking compulsory pasteurization powers. The Ministry of Health had deferred the matter and was looking into it. The Government had also asked all local authorities who supplied milk to school children that as far as possible they should supply pasteurized milk. Under the amendments the producer-retailer who did not pasteurize would be placed in a favourable position in relation to the majority of the trade who had laid down expensive plants for the pasteurization and bottling of milk in the interests of public health.

Mr. MACQUISTEN said the milk which Mr. Alexander called "raw" was fresh milk and the only milk worth drinking. Pasteurized milk was half-boiled milk. The motive behind the proposal for compulsory pasteurization was to get all the milk into the hands of monopolies. If calves were fed on pasteurized milk they died, and rats who were fed on it failed to reproduce their species. Surely it was better that people should boil their milk when they needed it rather than it should be boiled forty-eight hours before in a factory. If this milk were sold as "half-boiled milk" it would not be so popular. The one bright spot in the Minister's scheme was that it was going to reduce the levy on the tuberculin-tested producer to ½d. per gallon. That would go some distance towards purifying the herd. Why did the doctors not clamour for tuberculin-tested milk instead of bringing all this pressure to bear in favour of pasteurized milk? The result of regulation in Scotland had been that the retail price of milk was now 2s. 4d. a gallon. It was no use talking about nutrition so long as that was the Milk Board's price and so long as a man who sold his milk cheaper was treated like a felon.

Mr. W. S. MORRISON, replying to Mr. Alexander's question on contracts with producers convicted of adulteration, said the crime of adulteration carried its own penalty, and he did not think that cases were sufficiently numerous to warrant any objection to the amendment as proposed. There was often a great deal of doubt whether milk had been adulterated or not. Many producer-retailers did their best, with success, to supply decent milk, and if producers as a whole were willing to carry out their obligations the House could rest assured. The Department was not departing from its endeavour to get the quality of milk supplied by producer-retailers up to a higher standard. There was ample inducement for progress in supplying clean and wholesome milk.

The House then approved the amendments.

Safety in Mines

The House of Commons in Committee on July 26 considered the vote for the salaries and expenses of the Mines Department of the Board of Trade. Captain CROOKSHANK said that questions affecting the health and safety of the 780,000 men employed in the mining industry—silicosis, nystagmus, and so on—must be the constant preoccupation of anyone who held the office of Secretary to the Mines Department. Although in certain directions they could note a reduction, they could not be merely complacent in the matter; they must regard it merely as a starting-point for further efforts in the future. The Royal Commission on Safety and Health had been labouring very strenuously during the last year, and was still sitting. In

1936 790 persons were killed in the collieries, one or two of whom, for some unusual reason, were women. This was the lowest figure on record for a full year's working, and would have been more impressive but for the major disaster last August at Wharncliffe Woodmoor. On the basis of 1,000,000 tons of coal raised the number of killed came out at 3.36, which was the lowest figure on record, or 0.39 per 100,000 man-shifts worked, which was better than anything since 1924. Unfortunately there had been an increase in the number of persons killed in the first six months of this year.

One aspect, however, was a most bitter disappointment to all. In spite of all that had been done by boys' classes, training grounds, safety officers, and propaganda to decrease the accident rate for boys, this had moved upwards in the last year. The number of boys employed had also moved up. Something was still very wrong somewhere. A great deal more supervision was required, and older and more experienced men as well as officials could do much by saying the right word in due season. In the last six months 29,000 boys were employed: twenty-nine were killed, and the number of three-days disablement cases was 5,942. For the previous six months the figures were 30,000 boys employed, twenty-four killed, and 5,487 disabled for three days. The safety classes movement had gone on with great strength, and had been satisfactorily started in every coalfield except South Wales, but recently intensive efforts had been made by local authorities, coal owners, officials, and workers to co-operate and improve the position. The movement deserved far wider support in South Wales, if for no other reason than that the accident rate for boys there was higher than the general average for the country. They had had great support for these safety classes from the Safety First Association, which published a very striking poster that had had a wide distribution.

There had been a tremendous increase in the use of protective equipment. Last year the number of hard hats supplied rose by no fewer than 150,000, and in the Swansea area there was a very noticeable increase in the use of hard hats from 700 at the beginning of the year to 4,425 at the end. There were many pits where the hard hat was universally used, and the effects were now beginning to be seen. The number of injuries which lasted for more than a fortnight were proportionately less than they used to be, and the number of injuries lasting less than a fortnight had gone up. Head injuries, which in 1935 were 6.27 per 100,000 man-shifts worked, dropped last year to 5.56. The difference in the proportion of those injured for less than two weeks was 49 per cent. for 1936, compared with 45 per cent. in 1931, and those injured for over two weeks was 51 per cent., compared with 55 per cent. for 1931.

INCREASE IN THE INJURED

He had presented a report on the inquiry into the explosion at the Wharncliffe Woodmoor Colliery last August, which raised an important problem in connexion with stone dust. In this case it was clear that although stone dusting was, generally speaking, carried on in accordance with the regulations, it was ineffective in the roadways in preventing the spread and development of the initial fire-damp explosion. He had been considering new regulations dealing with stone dust, and these had now been circulated for preliminary consultation with the usual bodies concerned. It had not yet been possible to publish the reports of the district inspectors for 1936, and he was sorry to say that the figures of those injured altogether, 136,000, showed an increase over the previous year of 2,000. That showed, in addition to what he had said about boys, that they could not afford to relax any of the precautions that could be taken. Unfortunately, the inspectors' reports showed many cases where accidents might perhaps have been avoided. He appealed to the makers of all machinery which might be used, either underground or on the surface, to do everything possible to provide the most efficient guards.

As to silicosis he had nothing particular to say at the moment. The Medical Research Council had recently requested the Industrial Pulmonary Diseases Committee to start a comprehensive investigation into silicosis and allied pulmonary diseases in South Wales. That was a step to which he had given his strongest support. The Miners' Welfare Fund had assisted financially, and the South Wales Miners' Federation had promised to give all the co-operation that it could. The inspectors would continue to give all the assistance in their power, and Captain Hay, one of the inspectors, had been specially detailed for this work, and spent the whole of his time co-operating with mine and quarry managements in trying to devise the best means of prevention. Under the Factories Bill quarries and pit banks of metalliferous mines would be left out of the Factories Act administration, and would come under the Mines and Quarries Acts administration. For that purpose they would be transferred from the Home Office to the Mines Department. Consequently it was necessary to draw up new regulations to deal with this problem, and that was now being done.

Mr. J. GRIFFITHS: The Minister said that the Medical Research Council by arrangement with the industry was to investigate the purely medical side of the problem. It will spend most of its time investigating the question of what are the precise diseases from which the men who are disabled are suffering, and which are declared to be other than silicosis. Will anything be done at the same time or afterwards to investigate thoroughly the problem of how the disease can be prevented?

Captain CROOKSHANK: Generally speaking, one needs to know what a thing is before one can prevent it. Captain Hay, as I have said, spends the whole of his time trying to devise methods of prevention.

Mr. PALING moved to reduce the vote. He said that in view of the boasted progress in the science of mining it seemed incredible that the accident rate in mines could not be reduced. The figures meant that on an average every man working underground met with an accident once every five years. The number killed approximated to nearly 1,000 each year.

Captain CROOKSHANK, replying to points raised in the debate, said that with regard to accidents to boys in 1936 in the group 14 to 16 there were twenty-nine killed and 5,932 injured, and in the group 16 and under 18 there were twenty-six killed and 8,247 injured.

The motion to reduce the vote was negatived, and the vote agreed to.

Research into Animal Diseases

During the debate in the House of Lords on July 26 on the report stage of the Agriculture Bill Lord ADDISON asked for an assurance from the Government that financial assistance for research into animal diseases was practicable under the Bill. He said it was a vital part of the attack on disease that the Council for Scientific Research into Animal Diseases should be very generously assisted.

The EARL OF FEVERSHAM said that Clause 20 of the Bill enabled the department to make grants to the Agricultural Research Council. The money provided by the clause was merely limited by the vote of Parliament.

The Bill was read a third time on July 28.

Milk Pasteurization

In the House of Commons, on July 27, Mr. MACQUISTEN asked leave to introduce a Bill to prohibit the use of the designation "pasteurized" in connexion with the sale of milk, to enforce the use of truly descriptive designations in connexion with the sale of any milk heated above a certain temperature, and to amend the Milk and Dairies (Amendment) Act, 1922. He said he hoped that the Bill would be accepted and that no longer would the misleading word "pasteurized" be used in regard to milk. He did not believe that pasteurization made milk any more sanitary, because it was much more liable to infection afterwards. Pasteurized milk was only half-boiled milk cooled down, and it would be better for everybody if it was accurately described. Great pressure was being put on the Ministry of Health to make pasteurization compulsory. The great monopolies hoped that

it that were done all the milk would be driven through their hands. Fresh milk was the only milk worth drinking. He did not believe in an inquiry by the Ministry of Health. If half-boiled milk was good, why did the medical profession not spread among their patients the idea of boiling their own milk instead of leaving it to go through the dairies, where it was liable to pick up infection after it was pasteurized? Possibly there were some medical officers of health who were in favour of compulsory pasteurization. He always looked upon these officers as men who did not want to go out into the open and fight for a living, but wanted jobs with a pension attached. The Minister of Health was the person who had to defend sippers dipped in creosote for so many years. He did not want these monstrosities forced upon the community for the benefit of commercial interests. There should be truthful description of milk so that the public would know what they were getting.

MR. LEONARD opposed the Bill on the grounds of public health. He said he was surprised that Mr. Macquisten should make this attack upon the health machinery of the country, which had been built up with so much trouble to bring it to its present standard. Pasteurization was well understood; it was not boiled milk. Some people thought that it led to dirty milk, or induced farmers to be lax in their methods of milk production, but that was not the case.

Leave to bring in the Bill was refused.

On July 27 SIR THOMAS MOORE asked the Secretary of State for Scotland whether his attention had been called to the report issued by the milk production department of the West of Scotland Agricultural College with regard to the deleterious effect of pasteurizing milk, and what proportion of the milk used in connexion with the milk-in-schools scheme under his Department was pasteurized and fresh respectively. Dr. ELLIOT said he had seen the report in question, which related to an experiment into the relative value of raw and pasteurized milk in calf feeding. The results of any single experiment had to be taken in conjunction with a great number of other experiments on this subject, which had been and were being made. Fifty-three per cent. of the milk used in connexion with the milk-in-schools scheme in Scotland was pasteurized and 47 per cent. untreated. A large proportion of the milk in both categories was tuberculin tested.

Silicosis

On July 27 MR. GORDON MACDONALD asked the Home Secretary the number of patients alleged to be suffering from silicosis that had been submitted to the medical board during each of the last five years and the number certified as suffering from the disease.

MR. LLOYD circulated the following statement:

Examinations by the Medical Board in Pursuance of Applications for Death and Disablement Certificates from Silicosis or Silicosis Accompanied by Tuberculosis

Year	Disablement		Death	
	Workers examined	Certified to be wholly or partially disabled by the disease	Applications dealt with	Certified to be caused by the disease
1933	1,091	449	281	197
1934	827	435	225	174
1935	630	410	201	147
1936	549	429	191	143
1937	504	342	173	133
Total	3,721	2,155	1,071	794

Air Raid Precautions

[illegible] a report stage of the salary of [illegible] Secretary of State for War, Mr. HORE-BELISHA, Secretary of State for the Home Department, and Sir THOMAS INSKIP, Minister for the Co-ordination of Defence in the House of Commons on July 27 Sir THOMAS INSKIP said that a great deal of work had been done concerning air raid precautions, and the fact that discussions had taken place with local authorities about the financial responsibility indicated that the plans had reached an advanced stage. The whole country had been surveyed and divided into zones, in some of which preparations must be on a more elaborate scale than others, according to proximity to any menace. When the discussions on finance had ended in a proper settlement these plans could be effectively executed. He saw no reason why they should not now begin at once to carry out the plans so carefully and elaborately made. Sir Thomas subsequently announced that the Calcium Carbide Committee had been asked to present a report not later than the middle of September, so that the Government should be able to prepare any requisite legislation.

Factories Bill

The Lords' amendments to the Factories Bill were considered by the House of Commons on July 27. On the new clause proposing to allow the periods of employment for persons under 16 to end later than 6 p.m. but not later than 7 provided the total hours worked did not exceed 44 in any week, and where on at least one weekday in addition to Saturday these persons were not employed either before or after the midday meal, Mr. GEOFFREY LLOYD proposed that the Commons agree with the Lords in this amendment. Subsequent speeches, however, were critical, and when the debate was resumed on July 28 he announced that the Home Office did not propose to press the new clause, which was, in consequence, negatived. The other amendments made by the House of Lords were accepted and the Bill was returned to the Upper House.

Cost of Living and Nutrition

On the Consolidated Fund (Appropriation) Bill in the House of Commons on July 28 Mr. DAVID GRENFELL opened a debate on the cost of living. He said that the cost of living scales vaguely reflected the conditions of life of a very large number of people. He understood there was in progress a survey of the effectiveness of this instrument for gauging the purchasing power and social conditions of the community. The scale had moved upwards in the last four years at a more or less steady pace.

Mr. GRAHAM-WHITE said 4,500,000 people in this country spent on an average only 4s. a week on food; another five millions spent only 6s.; another nine million spent only 8s., although the Nutrition Committee of the British Medical Association had fixed 7s. a week as the minimum required for a reasonable physical existence. Havoc would be wrought in a multitude of homes if the cost of living continued to rise. The basis of the cost of living index should have the complete confidence of the people, because in the heavy industries the remuneration of at least one million people fluctuated with it, and in important sections of the Civil Service salaries varied with variations in the cost of living. Was the House and the country to have any information on this important matter before about this time next year? A significant fact with regard to the cost of living was that there had been no seasonal decline this year, and he presumed there would be a much steeper rise before Christmas than occurred last year. If the rise went on it might well lead to an increase in the mortality rates, which varied according to the standards of living and nutrition.

VARYING STANDARDS OF LIVING

Sir ARNOLD WILSON said that when the nation was short of food in 1914–18 there was an actual diminution of mortality, and at present in Germany, which unquestionably had no surplus of food, the expectation of life at any age above 5 was four years in excess of the corresponding expectation in this country. In the United Kingdom wage rates were slightly higher than in 1929 and the cost of living was slightly lower, but as a result of abnormally low prices of food during the past five years persons on the lowest wage levels had become accustomed to spending rather less on food and rather more

on the minor comforts of life. The quantity of meat eaten was going up rather rapidly in spite of higher prices, as also that of butter, margarine, cheese, milk, beef, and bread, although 10 per cent. less bread was consumed than was the case ten years ago. There was an increase in the total consumption of food, and there were on the average fewer dependents in a family than in 1929. There was more money to spend in any given family than there was in 1929. The true standard of living in this country might not have risen, but the standard had become more costly. There had been a 20 per cent. increase in the last six years in the consumption of tobacco, cosmetics, and sweetmeats, and in visits to cinemas, and also an increase of something like 10 per cent. in the consumption of liquor. The total sum expended on such luxuries was something like £250 million to £300 million a year. Perhaps it was due to the pressure of advertisements that the nation consumed less of some essential commodities like fish and bread, and vastly more of quasi-luxury commodities like tobacco. The cost of living ought to be divided into separate categories, comprising first, elementary needs; secondly, conventional needs; and thirdly, luxuries which could be dispensed with. Now that prices were rising it should be considered whether the cost of dying ought not to be included in the cost of living. Burial costs were roughly £10 million per annum in this country, and of this seven to eight millions fell on the wage-earning classes.

Mr. OLIVER STANLEY said it was difficult to reply to the many points raised in the debate. The index for the cost of food was above what it was twelve months ago, and still more above the year 1933, but below what it was in July, 1930, and considerably below what it was in 1929. In so far as the rise in the cost of food-stuffs was a world trend produced by greater demand was it in fact something which in general was injurious to the health of this country? A rise in commodity prices which took people off unemployment assistance and gave them increased purchasing power more than made up the difference in prices to them. If the health of the country depended on food prices falling as low as possible, then the years 1930 to 1933 ought to have been years in which this country had much greater prosperity than was in fact the case.

Miss LLOYD GEORGE said Sir John Orr had reported that practically half the population of this country suffered from undernourishment. He said that a year ago, since when the cost of food had risen, and the serious factor was that it was increased in price. The price of food had risen by 10 per cent. with the exception of milk, which had the nutritive foods,

UNEMPLOYMENT ASSISTANCE

Mr. JAMES GRIFFITHS said that the scales of allowances fixed in reference to the needs of applicants under the Unemployment Assistance Board were decided in July, 1936, as meeting the needs of unemployed persons at that date, when the cost of living index figure was 46. What should the scales be in July, 1937, when the figure was 55? The Government should see that the allowances were increased proportionately.

Mr. SHINWELL said 214,000 old age pensioners were in receipt of public assistance, and persons in receipt of outdoor relief in 1936 in England and Wales numbered 1,200,000. What kind of life must it be for these persons. The British Medical Association laid down a minimum of 5s. 7¾d. as the lowest possible standard on which a person could live for a week.

Colonel COLVILLE said an inquiry into working-class expenditure would be undertaken in the autumn with a view to revision of the cost of living index. Full consideration would be given to all the points which had been raised in the debate. The inquiries would be conducted with the assistance of local committees set up for the purpose and households from which information was desired would be visited personally. There would be no time lost, but a reliable picture on which to base future calculations could not be secured if they hurried too much. Meanwhile the present cost of living index figure gave a good picture on which to proceed. To link old age and widows' pensions with the cost of living would be very unfortunate for the pensioners. If that had been done in 1919 the pension to-day would be 6s. 9d. The Appropriation Bill was then read a second time.

Health in Barbados

A statement made on behalf of the Colonial Office on July 28, by Sir LAMBERT WARD announced that a Committee on Problems of Nutrition, appointed by the Governor of Barbados, had recently reported, and as a result of its recommendations proposals for the establishment of infant welfare clinics and crèches in all the parishes, on lines similar to those at present existing in two of them, were under discussion. Arrangements for the establishment of a system of daily distribution of milk and biscuits to elementary school children were also under consideration by the Barbados Education Board. An important source of ill-health in the Colony was overcrowding and bad housing, and an attempt had been made to remedy this by the establishment of a housing board, which was empowered to order the alteration, repair, or demolition of houses which were injurious to health or unfit for human habitation, and to acquire land and build suitable houses.

Tuberculosis in Scotland

On July 29 Dr. ELLIOT circulated a table relating to the incidence and fatality of tuberculosis in Scotland as follows:

Year	Incidence. Number of Notifications			Fatality. Number of Deaths			Death Rates per 100,000 Population		
	P.	N.P.	All Forms	P.	N.P.	All Forms	P.	N.P.	All Forms
1934 ..	4,985	3,066	8,051	2,793	911	3,704	57	18	75
1935 ..	4,939	2,951	7,890	2,811	836	3,647	57	17	74
1936 ..	4,736	3,019	7,755	2,753	911	3,664	55	18	73

P.=Pulmonary. N.P.=Non-pulmonary.

Post Office Administration

In the House of Commons on July 29, on the third reading of the Appropriation Bill, Mr. VIANT opened a debate on Post Office administration. He condemned the amount of overtime worked in the Post Office, and said it was general throughout all departments. The health statistics spoke for themselves, as showing the number of days lost through sickness aggravated by overtime.

Major TRYON said while he agreed on the importance of reducing overtime, there did not seem to be a good foundation for suggesting that overtime had led to sickness in the Post Office, in view of the fact that sickness had not been so low for a long time. In 1936 the rate of sickness among men was the lowest since 1914, and that of sickness among women was the lowest since 1906.

Sir WALTER WOMERSLEY said in reviewing because of health reasons the question of bringing the temporary postmen on to the permanent staff the Department was bound to take into consideration the conditions of the service. No service in this country was more generous in treatment of men who were ill. Full wages were paid, medical attention was given, and only when it was beyond doubt that the person was unlikely to render useful service to the Department did the question of superannuating him out of the service arise. When a person went into temporary service it was pointed out to him that there was no obligation on the part of the Postmaster-General to find him permanent employment. After further discussion the Appropriation Bill was read a third time.

Liverpool United Hospital Bill

The Committee on Private Bills, which examined the Liverpool United Hospital Bill, reported that the object of the Bill was to amalgamate the Liverpool Royal Infirmary, the David Lewis Northern Hospital at Liverpool, the Royal Southern Hospital at Liverpool, and the Liverpool Stanley Hospital in one corporation to be called the Liverpool United Hospital, and to make provision with respect to the property and funds of the said hospitals and the management of the amalgamated

hospitals. A report from the Attorney-General relative to the Bill was referred to the committee, who found that except as regards Clause 40 of the Scheme scheduled in the Bill, the recommendations contained in the report had been complied with by amendments made in the Bill during its passage through the House of Lords. With regard to Clause 40, the committee found that the Bill had been amended in the House of Lords to provide (*a*) that an investment committee should be appointed consisting of the chairman, the deputy chairman, the treasurer, and not more than three members of the general committee of the hospital; (*b*) that the investments of trust monies of the hospital should be subject to the approval of the investment committee; (*c*) that a list of the investments should be available for inspection by any governor; and (*d*) that the powers of investment to be authorized by the Act should not apply to funds on the investment of which there were any existing restrictions.

Working Hours of Nurses.—Sir FRANK SANDERSON asked on July 22 whether the Minister of Health would consider introducing legislation making it compulsory upon all hospital authorities to introduce an eight-hour day for their nursing staff, in view of the great strain imposed upon them by the existing eleven-hour day, and the consequent detrimental effect upon the health of the patients. Sir KINGSLEY WOOD answered that the question of the working hours of hospital nurses was one of a number of matters affecting the nursing profession which engaged his attention. The associations representing local authorities were in communication with the General Nursing Council regarding certain measures for meeting the situation.

Anti-dysentery Treatment.—Mr. GROVES asked on July 23 if Bristol public assistance committee had purchased a large quantity of anti-dysentery bilivaccine in order to make an extensive trial of it on patients at the Stapleton institution; by what method the vaccine was administered; and what need there was for it at that particular institution. Sir KINGSLEY WOOD replied that he was in communication with Bristol City Council on this matter.

Civilian Practitioners and Emergency Service in Military Hospitals.—On July 27 Mr. HORE-BELISHA, replying to a question, said that lists of medical practitioners willing to serve in a civil capacity at military hospitals in the United Kingdom in place of the Royal Army Medical Corps until such time as they were relieved by the R.A.M.C. officers were kept in each Command.

Slums in Glasgow.—On July 27 Dr. ELLIOT, replying to Mr. Stephen, said that 622 houses in the Camlachie Parliamentary Division of Glasgow were being dealt with under the Housing Acts as unfit for human habitation, or were on the corporation's list awaiting such action. The numbers of unfit houses closed or demolished during 1935, 1936, and the first half of 1937 were 167, 153, and 28 respectively. The latest available information with regard to the number of overcrowded houses in the division was obtained as a result of the overcrowding survey at the end of 1935, when the number was 5,660. The number of houses built by the Glasgow Corporation in the division in each of the six years 1931 to 1936 was: 1931, 294; 1932, 108; 1933 and 1934, none; 1935, 54; and 1936, none. The corporation had thirty houses in course of erection in the division, and proposals under consideration for the building of approximately 770.

Regional Supply Depot for Respirators.—Mr. LLOYD, replying to Mr. Kirby on July 27, said that a large regional supply depot for gas respirators had been established in Liverpool. It came into occupation on July 19, and was now ready for the reception of the respirators.

Nutrition and Unemployment Assistance.—On July 27 Mr. [illegible] Smith asked the Minister of Health whether the committee of inquiry into the question of nutrition had had under consideration the scales of unemployment assistance; and, if so, whether they were considered adequate, especially in relation to the cost of foodstuffs. Mr. BURGESS [illegible] Advisory Committee on Nutrition was dealing with the general question of the diet of the people, and dietary surveys were at present being undertaken in certain areas which dealt with working-class families, and which might include persons in receipt of public assistance.

Funds and Expenditure of Approved Societies.—On July 27 Sir KINGSLEY WOOD informed Mr. Gibson that 849 approved societies were carrying on business in the United Kingdom under the National Health Insurance Acts on December 31, 1936. Information was not available as to the total amount of insurance funds held by approved societies at the end of their last financial year, but the report by the Government Actuary on the Fourth Valuation of Approved Societies (Cmd. 5496) showed that the total of such funds at that valuation amounted to £164,363,000. The total amount expended by approved societies on sickness and disablement benefit in 1936 was approximately £17,612,000.

Provision of Meals at Instruction Centres.—On July 27 Mr. ERNEST BROWN informed Mr. G. Hall that he had decided to adopt the recommendations of the National Advisory Council for Juvenile Employment for England and Wales on the provision of meals for juveniles in attendance at juvenile instruction centres. He proposed to take the necessary steps to give legislative effect to them at the earliest opportunity.

Medical Examination in Drunkenness Charges.—Sir JOHN MELLOR, on July 29, asked the Home Secretary to take steps to secure that any person detained in custody upon the charge of driving a motor vehicle while under the influence of drink should, as soon as the police surgeon was sent for, be informed of his right to request the attendance of a doctor of his own selection. Sir SAMUEL HOARE said the practice of the Metropolitan Police was to inform any person in custody on this charge that it was open to him to have a doctor of his own choice called on the understanding that he would pay the doctor's fee. The general practice in other police forces was similar. He would look into the matter further if there was any reason to think that this procedure was not followed. He could not say whether the privilege of requesting a doctor of his own choice extended to prisoners other than motoring offenders.

Milk Consumption in Special Areas.—In an answer to Miss Irene Ward, on July 29, Mr. W. S. MORRISON said schemes for the supply of milk at cheap rates to expectant and nursing mothers and children under 5 years were now in operation in the Rhondda Valley, Jarrow, and Walker-on-Tyne. On July 17 in the Rhondda the numbers participating were 860 expectant mothers, 519 nursing mothers, and 5,389 children under 5. In Jarrow these figures were respectively 135, 83, and 1,281; in Walker-on-Tyne they were 107, 214, and 1,401. The average daily consumption under the scheme during July in Rhondda was 4,923 pints, in Jarrow 1,095 pints, and in Walker-on-Tyne 1,289 pints. The milk was sold at 1s. 4d. a gallon compared with the normal price of 2s. or 2s. 4d. a gallon.

Mental Health in the Fitness Campaign.—Sir FRANCIS FREMANTLE, on July 29, asked whether the Minister of Health, having regard to the vital importance of mental health to the community and the growing public interest and need of enlightenment in the subject, would have it included in the health campaign propaganda to be carried out in the autumn under the auspices of the Government. Sir KINGSLEY WOOD replied that opportunities would certainly be taken in the course of the campaign to call attention to the importance of mental as well as bodily health.

Operation of Midwives Act in Wales.—Mr. JAMES GRIFFITHS asked, on July 29, whether the responsible authorities in Wales had submitted satisfactory proposals for the provision of an adequate service under the provisions of the Midwives Act, 1936. Sir KINGSLEY answered that all the local supervising authorities in Wales except one had submitted proposals which were generally satisfactory, although in some instances points of detail were still under consideration. The authority which had not yet submitted proposals

that could be regarded as satisfactory was considering the submission of revised proposals. He was satisfied an adequate service could be established in Wales within the financial and other provisions of the Act.

Hearing Aids: Advertisements in Stamp Books.—On July 29 Sir ARNOLD WILSON asked the Postmaster-General whether, in view of the recent discussions of the British Medical Association at Belfast and of the recommendations of the Select Committee on Patent Medicines in 1914, he would give further consideration to the expediency of excluding advertisements of aids to hearing from postage-stamp books sold by his Department, and what, if any, financial loss would be occasioned thereby. Sir WALTER WOMERSLEY, in reply, said Major Tryon had referred to reports of the recent discussions of the British Medical Association on this matter and could find in them no reason for modifying the present policy of the Post Office, which was confirmed a few months ago after careful consideration. The financial loss from the exclusion of advertisements of aids to hearing would be upwards of £3,000 a year.

Tuberculosis in Wales.—Sir KINGSLEY WOOD told Mr. James Griffiths, on July 29, that he was not in a position to make a statement on the result of his consultations with the Welsh National Memorial Association in reference to the steps to be taken to deal more effectively with the problem of tuberculosis in Wales. He was at all times in close touch with the work of the association, and a survey of the services it provided was being carried out by a medical officer of the Welsh Board of Health. He awaited the report on that survey, and hoped to meet representatives of the association and of the local authorities when he visited South Wales in the autumn.

Silicosis and Asbestosis.—Sir SAMUEL HOARE told Mr. Kelly, on July 30, that cases of silicosis and asbestosis were not reportable to the Home Office as and when they occurred, but according to the annual return from the Medical Board for 1936 they certified 551 cases in that year, and in addition certified 198 deaths to have been caused by one or other of these diseases.

Machine Drilling and Silicosis.—Mr. D. GRENFELL asked the Secretary for Mines whether he would authorize the collection of the fullest possible information at mines where more than three cases of silicosis had been certified, showing the names and addresses of men who, in the last twenty years, had been engaged in boring with the use of machines either in hard headings or in ripping, with the type of machines used, and the yardage of hard headings driven. Captain CROOKSHANK replied that he was in full sympathy with the general object in view, but he did not think an investigation on the lines proposed could prove sufficient or satisfactory. There were cases of silicosis among coal miners who had never used machine drills. Moreover, the nature and extent of disability in a particular case could not be reliably determined without medical examination.

Notes in Brief

In the past twelve months 74,631 houses were inspected in Liverpool, 3,380 being found to be unfit for human habitation and a further 29,800 not to be in all respects reasonably fit.

During 1936 there were ten fatal and 2,776 non-fatal accidents to boys under 18 in South Wales and Monmouthshire. The corresponding figure for fatal accidents in the first half of 1937 was five.

Of 100,000 road accidents involving personal injury between April and September, 1936, the reporting authorities attributed to drivers, cyclists, or pedestrians under the influence of drink or drugs as the sole or main cause 14 fatal and 538 non-fatal accidents and, as a contributory cause, 10 fatal and 61 non-fatal accidents.

Some action with regard to immunization against diphtheria is taken by the councils of approximately seventy-four county boroughs, 117 non-county boroughs, twenty-eight metropolitan boroughs, and five counties in England and Wales.

Universities and Colleges

UNIVERSITY OF OXFORD

At a congregation held on August 1 the following medical degrees were conferred:

B.M.—M. H. Hughes, A. R. Norton, T. B. Snell, D. I. Crowther, R. H. S. Thompson, W. B. Young.

UNIVERSITY OF CAMBRIDGE

D. J. Bauer of Trinity College has been elected to the Michael Foster Studentship in Physiology.

The following candidates have been approved at the examinations indicated.

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—*Part I:* E. H. Allen, Margaret McL. M. Morrison, J. K. Muir, V. G. Vohra. *Part II:* A. P. Booth, Jean Bouchard, J. A. Brocklebank, C. J. C. Cooke, M. W. Dahab, G. G. Doel, A. M. Evans, W. Irwin, M. Lederman, C. T. MacCarthy, J. R. M. Martin, V. Prakash, H. Pringle, R. R. Rishi, D. C. Virmani, V. G. Vohra, J. W. Winchester.

UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated:

M.D.—*Branch I (Medicine)*: E. G. H. Cowen, Constance E. Field, G. W. Hayward, A. G. Hounslow, *A. Nelson-Jones. *Branch II (Pathology)*: J. L. Hamilton-Paterson, *H. A. Magnus. *Branch IV (Midwifery and Diseases of Women)*: V. H. J. Davies, R. Evans, *J. Howkins, M.S., S. P. Mason.

* University Medal.

The Senate on July 21 awarded the Ph.D. in Medical and Vital Statistics (non-clinical) to William John Martin (London School of Hygiene and Tropical Medicine); and the Ph.D. in Medicine (non-clinical) to John Douglas Robertson (Middlesex Hospital Medical School).

UNIVERSITY OF MANCHESTER

The following appointments have been made:

Assistant Lecturer in Anatomy: E. L. Patterson, M.B., Ch.B. *Assistant Lecturer in Applied Physiology*: Margaret I. Williams, M.B., Ch.B. *Demonstrators in Anatomy*: D. D. Cranna, M.B., Ch.B., D. A. Richmond, M.B., Ch.B., and F. W. Smith, M.B., Ch.B. *Clinical Lecturer in Infectious Diseases*: John Yule, M.D., D.P.H.

The Pilkington Fellowship in Cancer Research has been awarded to Mrs. Edith Paterson, M.B., Ch.B.Ed.

QUEEN'S UNIVERSITY, BELFAST

At a meeting of the Senate held on July 27, Mr. J. R. Wheeler, F.R.C.S., was appointed Lecturer in Ophthalmology, and Mr. C. H. G. Macafee, F.R.C.S., and Mr. H. I. McClure, F.R.C.S., Lecturers in Midwifery and Gynaecology.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

An ordinary meeting of the Council of the Royal College of Surgeons of England was held on July 29, with the President, Sir Cuthbert Wallace, Bt., in the chair.

The Hallett Prize was presented to Alexander James Innes. Dr. W. d'A. Maycock was reappointed a Leverhulme Scholar from August 11, 1937, to September 30, 1938, and Mr. T. Stewart Heslop was reappointed a Leverhulme Scholar for a year from October 1, 1937.

Diplomas

Diplomas of Membership were granted to the following candidates, who have passed the final examination in pathology, medicine, surgery, and midwifery of the Conjoint Examining Board in England:

B. S. S. Acharya, Iris A. Acton, O. B. Alakija, A. L. Alban, H. R. Alban, M. Albert, Mary J. Allardice, E. L. Allen, Sheila M. Anderson, C. E. Aston, E. A. Atkinson, J. C. Babbage, F. B. Bagshaw, J. K. Baker, Mary Baker, T. E. Barlow, V. N. le P. T. Barlow, Mary E. Barnard, Alice J. M. T. Barnes, Laura M. Bates, Eileen M. Bateson, G. K. Beatty, G. H. H. Benham, B. D. Berger, R. D. D. Birdwood, A. B. Birt, H. J. Bliss, L. B. Blomfield, R. Bloom, T. K. Bradford, Katharine M. H. Branson, J. K. Bremer, H. A. Brook, G. R. H. Brown, D. W. Browne, N. J. C. Burnand, Browne, Marjorie G. Bryan, C. T. A. Burgess, W. J. Cohen, J. H. Burniston, H. S. Bury, L. H. Cane, D. W. J. Comyn, Margaret M. T. L. Cohen, A. L. Collins, J. Colover, J. Conway, F. S. Cosh, W. W. Cowen, D. I. Crowther, A. C. Cunliffe,

A. G. Dabbs, A. David, J. B. David, T. I. David, Ll. P. Davies, H. J. Ll. Dickinson, I. Donald, P. W. Edmondson, G. F. Edwards, Phyllis M. Edwards, R. W. Ellis, R. E. Emmott, D. T. H. Evans, E. M. Evans, T. J. Fairbank, Ivy F. Fallon, E. L. Fawssett, W. H. V. D. Ferdinands, A. R. Ford, R. G. D. Forward, Margaret B. Fox, D. L. V. Fraser, Constance M. Fraser, W. K. S. Friedburg, E. Gartside, C. H. George, Rachel Goldenberg, J. Graham, M. P. Graham, W. R. Grant, W. P. Greening, L. Grifliths, T. E. Grifliths, O. Gunnery, H. L. T. J. Hardwick, W. Harris, R. J. Harrison, C. C. Harvey, S. Hazra, S. R. T. Headley, R. P. Hendry, L. H. Henein, F. G. Hibbert, H. G. W. Hoare, A. Homayoun, J. H. S. Hopkins, W. M. L. Horner, T. P. Howkins, E. B. C. Hughes, K. Inamulla, G. S. Irvine, R. C. Jackson, I. Jacobson, S. H. Janikoun, C. T. Jones, T. S. Jones, J. Jordan, G. J. G. King, G. M. Komrower, M. Krone, R. E. Lauder, A. D. Le Vay, C. Levy, Armorel J. Lewis, A. W. Lipmann-Kessel, O. P. Llewellyn, W. A. Lombard, G. Lorriman, P. D. Lynch, L. McAskie, D. H. Mackay, K. R. Mackenzie, R. R. McSwiney, S. A. Maddocks, E. B. Martin, T. K. Maurice, B. N. Mazumdar, P. S. Meyrick, J. R. Miles, A. Miller, C. N. Mills, B. D. Molesworth, E. H. Moore, C. A. Moynihan, Perin K. Mullaferoze, Mary G. Murphy, R. B. Niven, J. H. F. Norbury, J. R. Odell, A. K. Pardhy, W. B. Parker, T. Partington, G. R. Peberdy, G. G. Phipps, T. D. Pilcher, J. C. Prestwich, D. G. Price, G. Quayle, E. P. Quibell, Lilian M. N. Raftery, B. K. Rank, H. M. Rapport, D. C. S. Rendall, S. R. Reynolds, W. N. Riley, C. G. Rob, I. F. Rose, D. Rubin, W. R. Russell, C. P. Sames, H. S. Samuel, S. Samuels, P. J. Schultze, K. B. Scott, C. E. Shafto, R. Shaw, K. M. M. Sheldon, J. Skirrow, A. F. Smith, I. Smith, R. M. Solomon, H. Spencer, J. H. Sproule, R. H. Spurrier, C. M. Squire, Margaret G. S. Stalker, Shelagh M. Streatfeild, A. S. Syed, K. G. Symonds, J. E. Talbot, N. G. G. Talbot, J. H. Taylor, R. W. Thomason, W. G. Tillmann, C. R. Tilly, J. A. F. Tobin, Dorothy C. R. Vethavanam, D. M. Wallace, F. Walt, W. B. Waterfall, J. Watkins-Pitchford, C. Weston, A. B. White, G. D. Wild, P. B. S. Willan, C. B. I. Willey, G. P. Williams, J. M. G. Wilson, W. Windsor, P. N. Witney, G. H. Wooler, Ruth F. Wordsworth.

Diplomas were granted jointly with the Royal College of Physicians of London as follows:

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.—P. D. Bhargava, A. Carafasingham, S. N. Chelliah, N. Constantoulis, J. De, E. Ll. W. De Silva, S. B. Dhru, A. A. El Moslimani, Annie Foner, M. V. Hargett, E. H. Hudson, P. W. Hutton, X. Khokhongkha, Look-Nyuan Liang, G. D. McLean, E. C. Savona, M. Seraj-ul-Haque, S. B. S. Smith, J. N. Strauss, J. R. de V. Toussaint, J. White.

DIPLOMA IN OPHTHALMIC MEDICINE AND SURGERY.—S. M. Ali, T. M. J. Armstrong, H. J. A. Barnard, D. L. Charters, H. R. Cursetji, D. S. Flynn, P. R. Greeves, A. C. L. Houlton, D. Hugo, M. T. Ismail, H. Jamieson, J. R. Kellett, M. A. M. Labib, Josephine M. MacFarlane, T. L. McLarty, V. B. Mankad, I. V. Oza, C. R. Palfreyman, Y. C. Pandit, M. J. Philip, E. V. W. Pockley, P. Ramchander, F. J. Rutter, M. K. Sathe, F. G. Scoles, E. S. Shalom, C. A. Stanley.

DIPLOMA IN MEDICAL RADIOLOGY.—J. A. G. F. Rose, J. E. Swyer.

DIPLOMA IN ANAESTHETICS.—G. E. P. Meldon, H. D. Merrington.

The following hospitals were recognized under the F.R.C.S. regulations: Derbyshire Royal Infirmary, Grimsby and District Hospital, Warneford, Leamington, and South Warwickshire Hospital, Miller Hospital, Greenwich, Woolwich War Memorial Hospital, Northampton General Hospital, Cornelia and East Dorset Hospital.

Sir Holburt Waring was appointed representative of the College on the Newcastle Council of the University of Durham for three years.

The annual meeting of the Association of Surgeons will be held at the College on May 5, 6, and 7, 1938.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

At a meeting of the Royal College of Physicians of London held on July 29, with the President, Lord Dawson of Penn, in the chair, the following were elected officers for the ensuing year: *Censors*, Gordon M. Holmes, F.R.S., Sir Maurice Cassidy, Albert Ramsbottom, G. E. Beaumont; *Treasurer*, Sidney P. Phillips; *Registrar*, Sir Raymond Crawfurd; *Harveian Librarian*, Arnold Chaplin; *Assistant Registrar*, C. E. Newman.

Dr. S. V. Sewell of Melbourne attended as a distinguished guest.

The Baly Gold Medal was awarded, on the recommendation of the Council, to Professor E. L. Kennaway, F.R.S., for his biochemical investigations which have led to the identification of a group of substances provoking malignant growth of tissues, and having significant relations in structure to certain hormones and vitamins.

Sir Edward Mellanby, F.R.S., was appointed Harveian Orator for 1938.

The Murchison Scholarship was awarded (by the University of Edinburgh) to James Innes, M.B., Ch.B.

The following were appointed representatives of the College: Sir Humphry Rolleston on the Executive Committee of the Imperial Cancer Research Fund; Dr. Edwin Bramwell on the Council of the King's College, Newcastle; Lieut.-Colonel Hugh Stott at the celebration of the fiftieth anniversary of the foundation of the University of Allahabad, November 16, 1937; Professor F. R. Fraser and Colonel A. H. Proctor, Dean of the British Postgraduate Medical School, at the International Congress for Medical Postgraduate Study, Berlin, August 21 to 24; Dr. W. S. C. Copeman at the centenary of the Royal Medical Society of Budapest, October 6 to 8; and Lord Horder, its President, at the International Cremation Congress, London, September 24 to October 2.

Sir Arthur Hurst will deliver the Harveian Oration on October 18 at 4 p.m.

The following candidates, having satisfied the Censors' Board, were admitted Members of the College:

S. Adler, M.B.Leeds, N. S. Alcock, M.B.Ed., D. S. Bateman, B.M., W. Brander, M.D.Aberd., Beatrice A. Butterworth, L.R.C.P., E. M. Buzzard, B.M., J. B. Cable, M.D. New Zealand, L. I. M. Castleden, M.D.Lond., M. C. Chapman, B.M., E. M. Darmady, B.Chir., P. C. Dhanda, M.B.Punjab, D. Diamond, L.R.C.P., P. G. Dowling, M.B.Melb., M. Erfan, M.D.Cairo, Doreen P. Firmin, M.B.Camb., W. H. Gabb, M.B.Camb., A. R. Gilchrist, M.D.Ed., Y. H. Guinena, M.D.Cairo, C. Hardwick, M.B.Camb., F. D. Hart, M.B.Ed., H. T. Howat, M.B.St. Andrews, M. Hynes, M.B.Camb., W. H. Kauntze, M.D.Victoria, W. A. S. Lamborn, L.R.C.P., L. J. M. Laurent, M.B.Lond., D. Levine, L.R.C.P., C. A. Lillicrap, M.B.Lond., L. F. Loutit, B.M., F. McLaggan, M.B.St. Andrews, W. M. Macleod, M.B.Lond., P. [illegible] M.B.Madras, A. Nelson-Jones, M.D.Lond., A. [illegible] B. P. Niyogi, M.B.Calcutta, I. R. Owen, L.R.C.[illegible], M.B.Camb., E. E. Pochin, M.B.Camb., J. D. Ramsay, M.B.Glasg., W. R. Russell, M.D.Ed., J. C. Saldanha, M.B.Lond., O. A. Savage, L.R.C.P., J. E. Sewell, M.D.Melbourne, S. C. Shore, L.R.C.P., T. Simpson, M.B.Leeds, A. J. M. Sinclair, M.D.Melbourne, D. W. G. Smith, M.B.Ed., W. McL. Smithers, M.D.Melbourne, B. Thorne Thorne, M.B.Camb., G. L. B. Thurston, L.R.C.P., W. R. Trotter, B.M., J. W. A. Turner, B.M., R. F. West, M.B.Adelaide, N. Whittaker, L.R.C.P.

Licences and Diplomas

Licences to practise were granted to 206 candidates (including 24 women), whose names are published in the report of the meeting of the Royal College of Surgeons of England in this issue, as are the names of the recipients of the Diplomas in Tropical Medicine and Hygiene (21), Ophthalmic Medicine and Surgery (27), and Medical Radiology (2). Diplomas in Public Health (9), Psychological Medicine (19), and Laryngology and Otology (6) were granted to the successful candidates whose names were published in the report of the meeting of the Royal College of Surgeons of England in the *Journal* of July 17 (p. 143). In the list of the successful candidates for the Diploma in Psychological Medicine the name of J. B. Gillen was misspelt.

The following diplomas were also conferred, jointly with the Royal College of Surgeons of England:

DIPLOMA IN ANAESTHETICS.—M. C. Ganguli, R. E. Pleasance, A. F. Potter, W. B. Primrose, W. Sankey, G. E. P. Meldon, H. D. Merrington, C. D. Banes, R. P. Booth, Elva M. Chivers, R. T. V. Clarke, R. W. Cope, H. Curtis, G. Dru Drury, A. C. Fraser, A. H. Galley, J. L. Hopkins, E. Landau, I. N. Lewis, H. J. V. Morton, A. H. Musgrove, J. A. V. Nicoll, W. Niven, Angela M. S. A. Ofenheim, G. S. W. Organe, F. H. Pratt, A. C. R. Rankin, O. N. Ransford, J. R. Ritchie, Major J. M. Savege, R.A.M.C., Major H. R. Sheppard, R.A.M.C., J. T. Turner, R. C. Walch, Doris E. C. Walker.

BRITISH COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At the quarterly meeting of the Council, held in the College House, 58, Queen Anne Street, W., on July 24, Sir Ewen Maclean was re-elected president; Professor R. W. Johnstone and Professor Miles H. Phillips were elected vice-presidents; Mr. Eardley L. Holland, honorary treasurer; Sir Comyns Berkeley, honorary appeal treasurer; Professor W. Fletcher Shaw, honorary secretary; Mr. Frederick Roques, honorary librarian.

The following were admitted to the Fellowship:

Sir Mangaldas V. Mehta, Bombay, Doris C. Gordon, Stratford, New Zealand (*in absentia*), S. Langevin, Montreal (*in absentia*), J. A. Hopkins, Melbourne (*in absentia*).

The following were admitted to the Membership:

A. L. Gilbey, Portsmouth (*in absentia*), J. R. McArthur, Toronto W. L. Maccormac (London), W. J. C. Morris, Ayr, D. C. Racker, Manchester, S. W. Wright, Newcastle-under-Lyme.

The following were elected to the Membership:

M. C. Albuquerque, Bangalore, E. Bailache, Melbourne, S. C. Bose, Calcutta, Marjorie R. E. Boyd, Dublin, F. J. Burke, Liver-

pool, H. Callagher, Melbourne, Isabella D. Cameron, London, H. Canwarden, London, Mrs. D. J. P. Dadabhoy, Bombay, J. P. Dutt, Calcutta, Edith Ghosh, Calcutta, V. B. Gokhale, Belgaum, H. F. P. Grafton, Hamilton, Canada, C. J. K. Hamilton, Liverpool, M. R. W. Hart, Madras, A. F. Hollinrake, Hamilton, Canada, M. Homji, Bombay, J. Howkins, London, J. G. H. Ince, London, Mary John, Inda, J. W. Johnstone, Travancore, Anna P. Martin, L. de Logan, Nagpur, P. Lukose, Korumburra, Australia, R. A. Menezies, Nagpur, E. A. Menon, Waltair, India, D. N. Mitra, Bengal, Mrs. Monohan, Madras, Una Morton, Agra, B. Mukherjee, Calcutta, H. Murray, Calcutta, A. N. Palit, Bihar, N. A. Purandhare, Bombay, P. W. S. Riley, New Zealand, A. Sarkar, Patna, M. N. Sarkar, Calcutta, G. A. Simpson, Sernia, Canada, B. H. Singh, Bengal, A. B. Stenhouse, London, R. K. K. Tampan, Edgmore, India, P. Venkatagri, Madras, Margaret Venters, Manchester, R. J. Wotherspoon, Glasgow.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—P. A. Dixon, O. I. Green, C. C. B. Guest, B. A. Hoogewerf, G. Howell, E. S. Reed, O. Rochlin.
MEDICINE.—I. W. Claiman, G. K. Coombes, P. H. Hay-Heddle, K. J. Higham, B. A. Hoogewerf, J. Meynell, J. N. Roberts.
FORENSIC MEDICINE.—I. W. Claiman, P. H. Hay-Heddle, K. J. Higham, B. A. Hoogewerf, J. Meynell, J. N. Roberts.
MIDWIFERY.—M. G. Braham, O. G. Gilmore, L. Gottlieb, K. J. Higham, G. S. Parker, E. F. G. Stewart, C. Webb.

The diploma of the Society has been granted to J. Meynell and J. N. Roberts.

CONJOINT BOARD IN SCOTLAND

The following candidates have been approved at the Final Professional Examination for the Scottish Triple Qualification:

F. E. Adams, E. Adler, G. R. Altmann, J. Anderson, M. Berg, D. Blos, L. A. P. Cantin, W. Carsten, J. P. Chapin, Koh Chiang Chee, L. G. Cruickshank, A. Dzialoszynski, H. Felsen, P. Fleischmann, E. Friedmann, A. M. Gall, D. L. Goldman, D. L. C. Greig, I. M. Greenberger, A. Hirsch, Paula Heimann, W. I. S. Hudleston, F. P. Hudson, A. T. H. A. Kader, A. M. Kallen, Alfaretta F. Keith, J. J. Kristal, R. R. Levine, H. G. Liebmann, K. M. Little, B. Lipschitz, E. W. Lou-Hing, D. M. Macdonald, J. M. Mervis, Cecily C. Mitchell, J. R. Moffat, M. J. Munro, M. K. Naidu, Beryl A. Peters, E. Rachwalsky, H. L. Riner, W. A. Rock, R. W. Ross, M. Rubin, L. Schaffer, I. H. L. Shlefstein, S. Siegel, Charlotte B. Sommer, Betty Spier, F. B. Stephenson, W. H. Suffield, W. S. Thomson, S. P. Vosnides, E. Weltman.

Medical News

The address of the Central Midwives Board for England and Wales is now 23, Great Peter Street, Westminster, S.W.1: telephone number, Victoria 2410.

The Royal Society invites applications for two Foulerton Research Fellowships in Medicine, tenable at any hospital or medical school in the British Isles. Applications must be received by October 16, and candidates must be of British nationality and British parentage. The appointments will be for two years in the first instance, from January 1, 1938, and may be renewed annually up to a total of five years. The stipends will be £600 to £800 per annum, with superanuation benefits.

The lectures and discussions during the third International Medical Week in Switzerland, which will be held at Interlaken from August 29 to September 4, will relate largely to the problems of general biology, affections of the brain and nerves, and the metabolism of carbohydrates. Among the many topics to be considered are recent work in experimentally produced cancer, the results of treatment of intracranial tumours, hereditary factors in tuberculosis and syphilis, insulin therapy, diseases of the skeletal cartilage, and the importance of retinal tension. Excursions are planned to Schynige Platte, Berne, and the Jungfraujoch, while special arrangements are being made for participation in the William Tell festival, which falls due during this congress. The fee for membership is 10 Swiss francs, and further information will be supplied on application to the offices in Basle (27 Klosterberg) of the *Journal Suisse de Médicine*, under whose auspices this medical meeting is being organized.

The second European Congress of Structive (Plastic) Surgery will be held in London at the Royal Society of Medicine on October 6 and 7. Mr. T. Pomfret Kilner has been nominated as president and Drs. Sanvenero-Rosselli (Milan) and Dufourmentel (Paris) as vice-presidents. Sir Harold Gillies will be president of honour and Professor Cardenal of Madrid vice-president of honour. The subjects for discussion are: free skin grafts, nasal contour restoration, and mammaplasty procedures.

All German scientific medical associations and certain foreign associations interested in postgraduate courses for doctors are to be invited to attend a congress for postgraduate medical studies in Berlin from August 19 to 21. It is anticipated that an international committee on postgraduate studies will be appointed on this occasion.

The German Orthopaedic Congress will be held at Rostock from August 27 to 29. Further information can be obtained from the president, Dr. Scheel, Orthopädische Anstalt, Rostock.

We have just received the first number of the first volume of the *Journal of the Malaya Branch of the British Medical Association*, which is edited by Dr. G. V. Allen, in conjunction with Dr. R. B. Hawes, Mr. D. E. C. Mekie, and Dr. J. W. Scharff. This new journal is a workmanlike production, similar in format to the *Transactions of the Royal Society of Tropical Medicine and Hygiene*. We wish it every success. It will be issued quarterly, and can be obtained on application to the Advertising and Publicity Bureau, Ltd., 144, Robinson Road, Singapore, at an annual subscription of 3 dollars. The supplement of this journal includes a report of the Annual Meeting of the Malaya Branch for 1937, and a list of the members of the Branch.

In the *British Journal of Tuberculosis* for July are published all the papers read at the Empire Conference on the Care and After-Care of the Tuberculous held under the chairmanship of the Marquess of Willingdon last May. The transactions of this meeting will not be issued in any other form. Single copies of this issue are on sale at the special price of 4s. 3d., post free.

The Services

DEATHS IN THE SERVICES

Lieut.-Colonel ERNEST GEORGE FFRENCH, R.A.M.C. (ret.), died suddenly on July 25, aged 60. He was born on November 5, 1876, and was educated at St. Bartholomew's Hospital and at Edinburgh University, where he graduated M.B., Ch.B. in 1898, subsequently taking the M.D. in 1906, the F.R.C.S.Ed. in 1909, and the M.R.C.P.Lond. in 1921. After filling the post of house-physician at the Edinburgh Royal Infirmary, he went out to South Africa to serve as a civil surgeon in the South African War in 1900. He took a permanent commission as lieutenant in the R.A.M.C. on May 28, 1901, became major after twelve years' service, and retired, with the rank of lieutenant-colonel, on August 20, 1920. He served in the South African War for two years, 1900–2, taking part in operations in Cape Colony, the Orange River Colony, and the Transvaal, including the action at Renoster Kop, and received the Queen's medal with five clasps. He also served throughout the war of 1914–18, when he was twice mentioned in dispatches. He commanded the Military Hospital at Rochester Row during the war, and served as a specialist in dermatology. Afterwards he acted for six years as chief assistant in the skin department at St. Bartholomew's, was physician in charge of the skin department at the London Temperance Hospital, and practised as a dermatologist and specialist in venereal diseases in Harley Street. He was with C. F. Marshall, author of a work on *Syphilis and Veuereal Disease*. Since 1909 he had been a member of the British Medical Association. When visiting America two years ago he was appointed an associate professor at the New York Polyclinic and Postgraduate School.

Letters, Notes, and Answers

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QUERIES AND ANSWERS

Splitting Finger-nails

Dr. H. STIVEN (Cairo) writes: I have been watching your correspondence columns on the subject of split nails, as I am a sufferer myself. I am a surgeon and use "wet" gloves with lysol, or monsol, or some such tar derivative for my hands after washing up. I have always two or three nails which consistently split, and nothing I try, such as letting them get long, olive oil, vaseline, etc., does any good. That it is not constitutional or due to lack of calcium or vitamins seems to be demonstrated by my toe-nails, which are in good condition. Another complication in my case which may be a factor is that fifteen years ago I was doing my own x-ray examinations, but since then I have completely stopped exposing my hands, as a result of a warning transient erythema, due to operating for a needle in knee-joint under the screen, when, as so often happens, it took longer than expected. I have tried using "dry" gloves at operations with no marked result.

Treatment of Rheumatoid Arthritis

"A. W. S." wishes to know whether there is any special institution for the treatment of a female patient of moderate means with advanced rheumatoid arthritis.

Successive Miscarriages

Dr. A. W. BARCLAY WIGGINS (Sheffield) writes in reply to Dr. O. Sydenham (*Journal*, July 31, p. 252): I had a similar case of successive miscarriages in a patient of the anaemic, red-haired type; no pelvic abnormality was detected and her Wassermann reaction and the husband's were negative. She came to me early in the last pregnancy, and in spite of the negative Wassermann I gave her a full course of N.A.B. She was delivered of a healthy female child at the thirty-ninth week. The child is now 2 years old and appears normal. I may add that the husband had suffered from malaria while on military service in India.

Dr. A. W. PURDIL (Acton, W.3) writes: Perhaps Dr. O. Sydenham would be interested in Professor James Young's article "Habitual Abortion and Stillbirth Syndrome," which appeared in the *Journal* of May 8, 1937.

Agranulocytosis and Rheumatism

Dr. D. H. COLLINS, in reply to Mr. L. A. Riddell (*Journal*, July 24, p. 197), writes: A severe and chronic polymorphonuclear leucopenia (neutropenia) is a rare but not unknown concomitant of rheumatoid arthritis. It is usually associated with enlargement of the liver and spleen, and this combination of findings has received the name of "Felty's syndrome," but the associated arthritis appears to differ in no respect from rheumatoid arthritis. The neutropenia, although sometimes as low as 100 polymorphonuclear leucocytes per c.mm., does not appear to influence the prognosis and seems to occur irrespective of the treatment given, though of course amidopyrine and the sulphonamide preparations should be considered as possible aetiological factors. The neutropenia is difficult to influence by treatment, but one case recently observed showed some improvement as a result of treatment with massive doses of liver extracts. A fuller discussion of the matter is contained in an article in *Reports on the Chronic Rheumatic Diseases*, No. III, 1937. A pathological leucopenia is otherwise so rare in rheumatism that, if discovered, the case should be carefully reviewed for evidence of other disease.

LETTERS, NOTES, ETC.

An Exchange Scheme for Medical Students

Mr. A. D. LEIGH B.Sc., writes from Budapest: Thirty-three foreign students are gathered here in Budapest for the months of July and August. They are working at the different clinics attached to the Pázmány Péter Tudományegyetem (University), and represent seven countries. Sixteen students from Poland, both men and women, comprise the largest group; next come five Bulgarians, then four Letts, three Finns, two Frenchmen, two Austrians, and lastly the writer, who is the sole English representative. All are exchange students, an equal number of Hungarian medical students having travelled to the various countries concerned, where they also will work in hospitals and clinics. The Hungarian Medical Students Association is responsible for this scheme, and with very willing co-operation from the professors and their staffs in the clinics is making it a very great success. The foreign student is allowed to choose the clinic in which he would work, be it gynaecology, dermatology, internal medicine, surgery, etc. The two great clinics which form part of the University have an abundant supply of interesting material, and there are not more than two or three students in each section of the clinic. The Hungarians speak German, French, and English, so that there is no language difficulty, and a foreign student receives what is almost individual attention. A programme of visits to the various hospitals and clinics here has been arranged, and already the party has visited the Central Ambulance Station. To this station comes news of every accident in Budapest, and from it goes an ambulance carrying a student to the scene of the accident. The foreign students are to share in this work, and are looking forward to a spell of duty on the station. A display of films on first aid and life-saving was shown to the party, which also visited every section of the station. The balneological virtues of Budapest are well known, and a visit to the various medicinal baths is also to take place.

A Solecism

Dr. GEORGE S. BANKS writes from Aberdeen: Can nothing be done in the interests of orthology to discourage the continued use by some writers of the word "rheumatic" as qualifying clinics, committees, councils, etc.? The personnel of these may be rheumatic, no doubt many are in part explanation of their enthusiasm for the cause. Why not, on the same analogy, an Empire Anaemic Council; a Measly Commission, a Scabious Clinic, a Tuberculous Medical Officer, a Cancerous Research Committee?

Stammering

Dr. WM. RUSHTON PARKER writes: Stammering is a mere functional complaint like blushing and can be a grave handicap. When Lord Lister, in 1877, left Edinburgh for London I went to hear his introductory address, and I noticed at once that he was a stammerer, for I had been one myself in earlier days and understood the tricks; but I doubt if anybody else noticed it until he stumbled dreadfully over a difficult word, blushed crimson, and the latter half of the lecture became rather painful to listen to. Over twenty years ago I visited the Manchester Stammering School, to which every stammerer from the elementary schools is sent. I found thirteen boys and one girl being cured, and was told that over 90 per cent. of stammerers were boys and under 10 per cent. girls. Cure usually took three months, very few relapses occurred, and second relapses hardly ever. Considering the tremendous handicap which stammering becomes in after-life, I wonder why other large towns do not follow Manchester's example.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

Spontaneous Pneumothorax

107 M. R. CASTEX and E. S. MAZZEI (*Arch. méd.-chir. Appar. resp.*, 1937, **12**, 1, p. 23) point out that spontaneous pneumothorax may often appear in cases of pulmonary tuberculosis. The condition usually occurs in young men under the age of 30; in the authors' twelve cases, in all of which recovery took place, there were no women. Benign spontaneous pneumothorax may arise when the patient is at rest or as the result of varying degrees of physical effort. The onset may be insidious or sudden, and the outstanding symptoms are pain and dyspnoea, with palpitations, cold sweats, cyanosis, nausea, and vomiting. The intensity and duration of the pain is variable, and it may be localized or radiating. There is usually immobility of the affected side of the chest with diminution or absence of local fremitus, increased resonance, and loss of breath sounds. Radiology is of diagnostic value, as it establishes the extent of the pneumothorax and the degree of pulmonary collapse. The pneumothorax is usually complete when there are no adhesions present. Prognosis is good, the symptoms decreasing in intensity after a few days, and the patient recovering completely by the end of a month. The chief complications are haemorrhage and the simultaneous occurrence of the condition on both sides. Recurrence takes place in 10 to 20 per cent. of cases, in occasionally as often as fourteen times. Treatment consists of complete rest, morphine injections to relieve pain, and slow respiration. In cases of circulatory shock stimulants may be necessary, and if acute anoxaemia is present it is best to carry out extraction of the air and give oxygen.

Hodgkin's Disease

108 According to H. PRINZ (*Zbl. Chir.*, June 19, 1937, p. 1461) a large mediastinal tumour as an early manifestation in Hodgkin's disease is rare. However, it may occasionally cast a large *x*-ray shadow or even deform the chest wall before diagnosis is possible from enlargement of the lymph glands and spleen, together with irregular pyrexia and the results of biopsy. He relates the case of a girl, aged 15, in whom an anterior mediastinal swelling pushed forward the second and third left ribs; at operation for supposed primary neoplasm a tumour the size of a foetal head and weighing 315 grammes and adherent to the pericardium, left pleura, and chest wall was removed, with the exception of substernal prolongations adherent to the arch of the aorta and great veins. Microscopical examination showed it to consist of lymphogranulomatous tissue, to be rich in plasma cells and eosinophils, and to contain giant cells embedded in connective tissue. Deep *x*-ray treatment was subsequently carried out, and the patient recovered after fifteen months. No lymph-gland swelling was noted before or after operation.

Cardiac Tuberculosis

109 S. COHEN (*Amer. Rev. Tuberc.*, May, 1937, p. 618) reports that tuberculous pericarditis is found in 5 per cent. of patients dying from tuberculosis; tuberculosis of the myocardium is rare, about 0.25 per cent. of cases being found at necropsy; and the frequency of that of the endocardium has been estimated variously as from 0.6 to 90 per cent. in terminal tuberculous conditions. Both haematogenous and lymphatic infections are possible. Tuberculosis is the most common cause after rheumatic fever of chronic adhesive pericarditis, and in addition may often produce a chronic mediastinitis with venous obstruction—Pick's syndrome. Tuberculous pericarditis may cause no symptoms, or those of acute or chronic adhesive pericarditis, of which the tuberculous nature may be suspected if the presence of tubercle bacilli can be demonstrated elsewhere. The diagnosis of myocardial tuberculosis is rarely made, in some 50 per cent. of cases it gives rise to ectopic rhythm, and its presence may then be suspected in patients with lympho-haematogenous tuberculosis and tuberculous pericarditis. Cardiac tuberculosis seems especially common in the negro races, and it is associated with a protracted haematogenous infection, panadenitis, and panserositis. Two such cases are described by Cohen, in both of which the pericardium was primarily affected, probably by direct extension from caseous mediastinal lymph nodes. In the first there was caseous infection of all the cardiac chambers except the left auricle, and the great vessels of the heart were affected; there was also evidence of tuberculous (Poncet's) polyarthritis.

Surgery

Adamantinoma of the Lower Jaw

110 R. JAULAIN (*J. Méd. Bordeaux*, May, 29, 1937, p. 693) states that adamantinomata are very uncommon tumours, and are usually found in females over the age of 15. The adamantine epithelioma is most commonly situated on the posterior part of the horizontal ramus of the lower jaw. The first symptom is the gradual but steady increase in the size of the jaw, which causes a progressive deformity of the face. On palpation a fixed tumour can be felt; it may be hard, or, if cystic, fluctuation may be present. There are no functional symptoms in the early stages, and the general condition of the patient is good; diagnosis can be confirmed by radiography. The tumour, if neglected, may become as large as a foetal head, extending downwards to the chin. Sometimes the teeth erode the palate and fall out, speech and mastication become difficult, and gradually the general condition declines as a result of toxic absorption. If the tumour is cystic puncture will draw off a yellow or dark fluid, similar to that from an intracystic haemorrhage; while if it is hard radiography will often show destruction of the adjacent bone. Treatment must aim at complete removal, and this may be carried out in the early stages, when the lesion is localized, by curetting. In the case of large tumours extensive resection is necessary in order to prevent recurrence. A careful technique is needed for this operation, but even then bronchopneumonia is liable to develop. A case is reported in which a large tumour was successfully removed, but the patient died on the thirteenth day from pneumonia. Emphasis is laid on the importance of early treatment while the prognosis is still good.

Venous Thromboses

111 S. LINDGREN (*Uppsala LäkFören. Förh.*, May 31, 1937, p. 415) records two cases and refers to several others in the literature showing that deep venous thromboses of the legs may evoke a clinical picture practically indistinguishable from that of embolism of the femoral artery. His first patient was a woman, aged 25, who suddenly developed violent pain in the calf of the left leg a few days after she had been operated on for extra-uterine pregnancy. Numbness and cyanosis almost reaching to the groin soon developed. No arterial pulsation could be felt in this limb, which was cold and discoloured in patches and pitted on pressure, as well as being paralysed. Although there was nothing in the patient's history to support the diagnosis of embolism of the femoral artery,

it was explored under local anaesthesia on the assumption that it might have been blocked by an embolus. The operation revealed thrombosis of the femoral vein, and a femoral artery of which the dimensions were only about one-third of the normal. It was evidently reduced in volume by spastic contractions, which presumably subsided when, an hour after the operation, the leg again became warm, sensation returned to it, and the patient could move her toes again. The subsequent course of the case was uneventful. The author concludes that even when the onset of this type of thrombosis is not as violent as in the cases he records, it may yet be reflected in the behaviour of the neighbouring arteries; and in this connexion he notes that Professor Nyström has for several years found an aid to the early diagnosis of this form of thrombosis in the behaviour of the femoral pulse, which is weaker and smaller than that of the other leg; this phenomenon is demonstrable before the appearance of oedema, and is presumably due to spasmodic contraction of the femoral artery.

112 Familial Ankylosis of the Finger-joints

H. NOWAK (*Dtsch. med. Wschr.*, June 11, 1937, p. 937) reports from Vienna his observations on a family twenty-one of whose members presented some form or other of familial ankylosis of the finger-joints. According to Lenz this condition is characterized by stiffness of the little finger and often also of the ring finger, both of which are permanently flexed at the first and second phalanges. The corresponding flexor tendons are easily palpable and seem to be shortened. According to the same authority this deformity is frequently associated with syndactylism of both fingers and toes. Eleven of the author's twenty-one cases were males.

113 Congenital Prostatic Insufficiency

E. M. SIENKIEWICZ (*Z. Urol.*, 1937, **31**, 6, p. 400) describes in detail the different clinical and anatomical aspects of prostatic insufficiency, and comes to a number of conclusions. Almost every case of enuresis presents in later life some form of pronounced prostatic insufficiency. In a number of cases the cystoscopic examination may show the Alexeev-Schramm symptom—dysplasia of the trigonum, an annular sphincter, and occasionally the formation of valvular folds and of a vesico-urethral obstruction. Increased excitability of the detrusor and an insufficient trabeculation are less important in diagnosis. In other cases the history reveals some degree of failure of erection, an accelerated ejaculation, and a relative impotency. These disturbances usually become more accentuated with age, while the libido remains relatively unaffected.

Therapeutics

114 Prontosil in Erysipelas

K. MOTZFELDT (*Norsk. Mag. Laegevidensk.*, June, 1937, p. 630) reports from a hospital in Oslo his experience in the treatment of erysipelas; he classified his cases according to whether they were or were not treated with prontosil. In the pre-prontosil period 1924–35 there were 176 patients, of whom 106 were women. The average age was 34, and there were twelve deaths, an average mortality of 6.8 per cent. Three out of nine patients under the age of 1 and two out of eight over the age of 70 died; the average duration of the fever was nine days. Except for ten cases given a supposedly specific serum, the patients in this group received only symptomatic treatment. In the prontosil group there were twenty patients, all of whom, with only one exception, suffered from erysipelas of the face. The prontosil was given simultaneously by the mouth and by intramuscular injections. In every case the temperature fell to normal within two days after the first administration of prontosil, and the average duration of the fever in this group was between three and four days. The rash disappeared very quickly, the improvement in the general condition was remarkable, and there were no deaths.

115 Hydrotherapy

A. TANBERG (*Nord. med. Tidskr.*, April 24, 1937, p. 648), who is in charge of the Sandefjord Hydro in Norway, has applied the sedimentation test to his patients in different stages of hydrotherapy and has found that it remained unchanged in fifty-one cases, or 7.7 per cent. of the total number investigated. In 432 cases, or 65 per cent., the rate of sedimentation was slower, and in 181, or 27.3 per cent., it was quicker. Taking a normal rate as under 10 mm., he describes three main types of reaction according to whether the test remains unchanged at the end of treatment or whether there is slowing or quickening. When slowing occurs, the downward curve is comparatively uniform in the first five or six weeks, after which it tends to flatten out, a phenomenon which, in the author's opinion, shows that for the time being nothing more can be achieved by hydrotherapy. The higher the original rate of sedimentation the greater the proportion of cases in which treatment was associated with a slowing of the rate; in cases with an initial rate of 50 to 100 mm. up to 90 per cent. showed a slowing. A high rate need be no contraindication to hydrotherapy provided the patient is afebrile. It is exceptional for hydrotherapy to restore a high rate to normal; this happens most often after acute rheumatic fever or a prolonged attack of gout, or even after polyarthritis has been chronic for several years. In some cases the rate may still be the same at the end of treatment, although clinically the patients are better or worse, and it is not easy to draw instructive conclusions from the behaviour of this rate in every case. As abnormally high rates may range from 10 to 128 mm., and as the duration of the patient's illness may be from a few months to some thirty years, it is very difficult to discover the main principles governing the rate of sedimentation in the mixed material of a hydrotherapeutic institution.

116 H. URBAN (*Wien. klin. Wschr.*, June 4, 1937, p. 868) maintains that patients suffering from disorders of motility are capable of a considerable amount of movement and co-ordination when the affected parts are immersed in water. This form of therapy is suitable for patients suffering from disorders of the equilibrium and from spastic conditions following cerebral, spinal, or peripheral paralysis. It is economical since it saves time, and is also useful in the investigation of certain problems connected with disturbed motility.

Laryngology

117 Nasal Deformity

CLAOUÉ (*Réun. méd.-chir. Morphol.*, December, 1936, p. 166) points out the difficulty of correcting a saddle-back deformity of the nose. Various methods have been tried, including a cartilaginous costal graft, a bone graft, and the introduction of paraffin, india-rubber, or ivory. Of these the author's nine years' experience have convinced him that the use of an ivory graft is more satisfactory, and this method is discussed in detail. The most suitable type of ivory is that obtained from elephants. It must be fixed securely in position, and should then be carved into a suitable shape for correcting the deformity. Illustrations of this procedure are given. Intolerance to the ivory may be shown immediately after operation by the sloughing of the skin, or it may not appear until several months later, when the skin becomes red and inflamed. Fluctuation develops slowly, due to a collection of fluid round the graft, and is followed by secondary infection and

sloughing. This complication has been dealt with successfully by continued x-ray therapy, which improves the condition of the skin and brings about the absorption of the fluid and the disappearance of the inflammation.

118 Nasal Ulceration in Copper-plating Works

M. H. BARSKY (*N.Y. St. J. Med.*, June 1, 1937, p. 1031) states that he is the first observer to describe nasal disorders in relation to copper-plating. Ulcerations of the mucous membranes and perforation of the nasal septum associated with the use of chromium compounds in industry have been recognized for some time. Two employees in the copper-plating department complained of persistent running nose and epistaxis. On examination they were found to have shallow ulcerations of the septum and turbinates. Following this the departmental foreman became seriously ill with furunculosis of the nasal vestibule and ulceration of the nasal mucosa. The septic process spread, and in a short time he died from a terminal pneumonia. Fifteen other workmen were also slightly affected. The cyanide tanks used in copper-plating were blamed for the symptoms. Some time before this workmen in an adjacent department had complained of irritating vapour, and wooden partitions had been erected between the tanks in order to meet their objections. These restricted the natural ventilation, and as a result the corrosive spray arising from the copper-plating tanks became sufficiently concentrated in the atmosphere to produce the nose lesions. The plating department was shut down for several weeks, and various improvements were made in the ventilation. Also, by the use of additional floor boards, the heads of the workmen were raised a few inches higher than the tanks. Subsequently there were no recurrences of symptoms in the old workers, and none appeared in new employees.

119 Semicircular Canals

E. W. PEET (*J. Laryng.*, June, 1937, p. 431) describes certain variations in the anatomical relationships of the four vertical canals. Since Crum Brown's anatomical study of the semicircular canals in 1874 it has been held that the plane of the posterior canal on one side is parallel to that of the superior canal on the other. Consequently physiologists have assumed that the posterior canal of one and the superior canal of the opposite side function as a single unit, but since they are sensitive to movements of rotation in both directions about an axis at right angles to their common plane, Peet shows that these canals are very seldom parallel. The lines drawn in the planes of the osseous canals usually meet at an angle forward which varies from 15 to 20 degrees. In one extreme case of a skull with a high cephalic index the angle was 41 degrees; only one skull, that of a child, showed true parallelism. The article is illustrated by very clear photographs of the various skull bases from which these conclusions are drawn. Although these anatomical variations exist, the author considers that they are still compatible with the accepted theories of labyrinthine function.

120 Otocysts in Animals

BLANCO (*Ann. Oto.-laryng.*, March, 1937, p. 198) reviews the part played by the otocysts in the animal kingdom. These have been especially studied in fishes, where they lie near the surface. In many species of fish they are simple vesicles containing one otolith resting on the end-organ. So long as the fish swims in the normal position the otolith rests vertically on the end-organ, but as soon as it turns in any particular direction the otolith moves and presses on a different area of the end-organ. When the otocysts are destroyed by a needle-prick the fish's sense of orientation is abolished, and it may swim on the back or side, or turn about aimlessly. Certain crustaceae have otocysts which open externally by means of a valve. When the shell is shed the otoliths are also left behind, and the crab falls to the bottom of the tank. It then picks up fine particles of sand in its claws and places these inside the otocyst. Kreidl put fine particles of iron filings into the tanks and the animals placed some of these into their otocysts. Subsequently he placed a magnet in the tank. As long as this was beneath the animal there was no disturbance, but when it was placed above or to the side the animal turned on its own axis and assumed fresh positions according to the direction of the pull on the metallic otoliths. Another organ closely allied to the labyrinth and otocysts is the "swimming bladder," the function of which is to register the external pressure, and in many types of fish this is developed from the intestinal tract. When a fish with a visible swimming bladder is taken from a deep level of water and placed into a small tank the swimming bladder becomes dilated from the alteration in pressure. For many hours such an animal makes violent swimming efforts to reach a lower level until the pressure has adjusted itself again.

121 Pharyngeal and Oesophageal Diverticula

F. H. LAHEY and W. B. HOOVER (*New Engl. J. Med.*, April 8, 1937, p. 591) analyse fifty-three consecutive cases of operations for diverticula of the lower pharynx and upper oesophagus. Of these cases forty-three were men and ten women. The outstanding symptoms of this condition are difficulty in swallowing, regurgitation, gurgling noises, choking attacks, and loss of weight. The diagnosis can usually be made from the clinical history, but should be confirmed by a careful roentgenologic study. The x-ray examination also rules out other lesions of the oesophagus and ascertains the size, shape, and position of the sac. The operation for such diverticula is done in two stages. At the first operation the sac in the neck is completely freed, the encircling constrictors are carefully dissected and cut, and the dome of the diverticulum is then fixed high in the wound, so that it lies at a higher level than the opening into the oesophagus. This operation relieves the patient's symptoms at once; the second one takes place from eight to twelve days later, and the sac is then amputated. The authors recommend a special dissection of the mucosa from the submucosa; a small cuff of mucosa is pushed into the neck of the sac and the submucosa sewn over it, and in this way leakage can practically always be avoided. Most of the patients require post-operative dilatation, and this must often be continued for a year. In the authors' series good results were obtained in forty-nine cases, poor results in two cases, and two were failures.

Obstetrics and Gynaecology

122 Insufflation of the Tubes

L. BONNET (*Presse méd.*, May 12, 1937, p. 715) is of the opinion that kymographic insufflation of the tubes is a procedure which is of value in obtaining records of the intratubular pressure during insufflation. By this means the permeability of the tubes can be ascertained and records of the contractions of the tubes obtained, making possible an estimate of their functional capacity and to some extent that of the ovaries. In cases of tubular sterility insufflation has been the first procedure, followed by the injection of lipiodol in doubtful cases or when the exact position of the obstruction must be known for surgical treatment. It has been found, however, that kymographic insufflation gives even better and more detailed information than does lipiodol injection. During insufflation of a normal tube by a current of gas, rhythmical peristaltic movements can be registered and variations of pressure recorded on the drum. If the tube is permeable

the graph shows a series of more or less irregular oscillations with a pressure of from 60 to 70 mm. of mercury—never above 100 mm. When the tube is obstructed the passage of gas is stopped when the pressure reaches 200 mm. of mercury. When tubular spasm occurs the pressure passes 100 mm. and may reach 200 mm., but as soon as the spasm ceases the pressure falls rapidly until the oscillations are similar to those of a normal tube. In cases in which a tube is stenosed, either by lesions of the mucosa or by peritubular adhesions or torsion, the pressure rises up to 100 to 200 mm. of mercury and then falls gradually with little or no oscillation. From these results it has been possible to evaluate ovular function, which is in direct relation to tubular function. A case of ovarian insufficiency showed a pressure of only 10 mm. of mercury, but after x-ray or radium treatment the number and amplitude of the oscillations increased markedly. Following insufflation of tubes not completely obstructed pregnancy resulted in nearly 25 per cent. of cases.

123 Milk Fistula treated by Follicular Hormone

S. ERNST (*Zbl. Gynäk.*, June 12, 1937, p. 1420) reports the excellent therapeutic results obtained from the administration of follicular hormone in two cases of milk fistula of the breast caused by mastitis. A number of other therapeutic measures were tried, without effect. The hormone was then administered as an injection of 50,000 [illegible] oleosum followed by daily doses of [illegible] taken in tablet form. The flow of milk stopped after a few days and the fistula was soon closed.

124 Caesarean Section

A. G. SCHULZE (*Minnesota Med.*, May, 1937, p. 282) notes that the incidence of Caesarean section varies from 1 to 3.25 per cent. at different hospitals. In the cases reviewed the maternal mortality varied between 5 and 10 per cent. Maternal morbidity was very much influenced by the type of operation performed, the pre-operative care of the patient, and other contributory factors. The tendency towards conservative treatment of the toxaemic patients is on the increase, probably in view of the high mortality—of from 20 to 50 per cent.—of Caesarean section in eclampsia. At the same time the classical Caesarean section is being rapidly displaced by the low or cervical type of operation, for although the classical section is the easiest to perform it shows the highest mortality and morbidity. The extraperitoneal type of operation presents no advantages.

125 *Folliculin Treatment of Pruritis*

G. COTTE and A. MILEFF (*Gynécologie*, April, 1937, p. 195) point out that it is only in the human vagina that the secretion is acid (*p*H 4.5 to 5.6) and contains Döderlein's bacillus, and that the wall contains glycogen. The inference that the bacillus forms lactic acid from the glycogen has been widely accepted, and it is now generally admitted in addition that the content of glycogen is dependent on ovarian activity. Nevertheless, in senility or after castration some glycogen remains. In hyperhormonal ameorrhoea, as the writers have found by biopsy, the vaginal epithelium attains an extreme thickness, while in amenorrhoea associated with infantilism it is greatly reduced. Folliculin treatment—either general or locally by inunction—has been used with success by a number of German observers in pruritus or kraurosis vulvae, on the assumption that the senile atrophy of the epithelium is countered by such hormone therapy. Cotte and Mileff proved by biopsy, in a woman, aged 68, who was suffering from severe pruritus, that in the atrophic epithelium of the posterior fornix the functional layer had practically disappeared and the basal layer was inactive, although it still contained traces of glycogen. After intramuscular injection of 40 milligrammes of oestradiol benzoate during eight days the itching disappeared and the epithelium became four or five times thicker, showing cellular activity in the functional and basal layers and glycogen in both.

Pathology

126 Blood Grouping and Compatibility

P. HOXWORTH and A. AMES (*J. Amer. med. Ass.*, April 10, 1937, p. 1234) describe a technique for blood grouping and matching which combines the principles of the Vincent and Coca methods and for which the following advantages are claimed. Both grouping and compatibility tests require only ten drops of defibrinated blood from finger punctures, and venepuncture is avoided. The blood group is usually obvious in less than one minute, provided that standardized test sera of high titre are used, and compatibility may be determined in fifteen minutes and the conditions of the proposed transfusion can be reproduced *in vitro* both qualitatively and quantitatively. Universal donors with agglutinin titres dangerous to A or B recipients can be detected, and low-titred A donors may be selected for universal recipients. Grouping is determined by mixing defibrinated blood with large drops of anti-A and anti-B test sera of high titre on a glass slide. Agglutination, when it occurs, is complete in less than one minute. If there is none by this time the slide is covered to prevent drying and observed after fifteen minutes in order to guard against weak agglutinogens. For matching purposes a 50 per cent. dilution of the recipient's defibrinated blood in normal saline is mixed on a slide with one-fifth of its volume of similarly diluted defibrinated donor's blood. The slide is covered to prevent evaporation, and after fifteen minutes it is observed under low-power magnification. Unless the agglutination is so definite that there is no question of confusion with rouleaux formation, the blood may be pronounced compatible. The new techniques, after being checked with parallel determinations by the older methods in 200 cases with complete agreement, were used in 400 subsequent cases without a single reaction due to incompatibility.

127 Experimental Tumour Immunity

A. BESREDKA and L. GROSS (*Paris méd.*, June 5, 1937, p. 506) have investigated the possibility of non-specific immunization of rabbits and mice against malignant tumours. Injections of extracts of spleen, liver, kidneys, skin, and mouse embryo, and of emulsions of sarcoma rendered avirulent by heating, etc., did not protect mice against the induction of sarcoma by injections of emulsions of mouse sarcoma. Injections of emulsions of normal rabbit spleen also failed to protect them, while emulsions of normal rabbit brain in about half of the cases did protect the rabbits against the development of relatively benign intradermal epitheliomas following intradermal inoculation of an emulsion of Brown-Pearce's epithelioma. Injections of normal organs, however, failed to protect rabbits against the development of tumours in positions where they are most malignant—namely, subcutaneous, intraperitoneal, intraocular, intratesticular, and on the dura mater. The authors conclude that emulsions of normal organs have only an inconstant protective action against benign tumours and none at all against malignant tumours. In investigating the question of protection against malignant tumours they found that rabbits, in which they had induced experimental intradermal Brown-Pearce epitheliomas that had been afterwards spontaneously absorbed, had developed a stable, strong resistance against injections of emulsions of the epithelioma in places where a malignant tumour usually followed the injection. Serum antibodies responsible for this immunity could not be demonstrated by inoculation or parabiosis experiments. The authors infer, therefore, that the mechanism of the immunity is located in the epithelial lymphatics.

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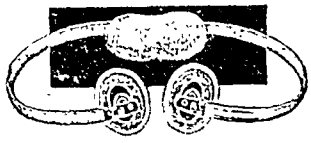
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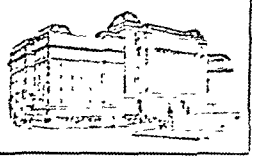
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The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Certified voluntary and temporary patients are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year. Terms from £3 3s. per week. Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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Including Alcoholism and other Addictions

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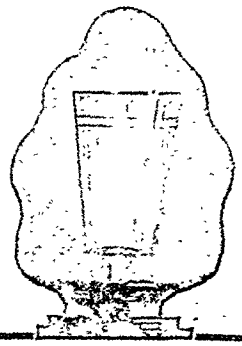
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The next Examination for the Diploma (D.C.O.G.) will be held on October 12th (Written) and October 26th (Clinical and Viva Voce). Application for entrance to the Examination (on the prescribed form obtainable from the Honorary Secretary) must be made not later than Wednesday, September 8th.

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The Council of the Royal College of Physicians are prepared to receive applications for the office of *MILROY LECTURER for 1939*.

Applications must be addressed to the Registrar, Royal College of Physicians, Pall Mall East, on or before September 15th, 1937, and should contain a statement of the division of the subject selected by the candidate.

The Course consists of Two Lectures.

The Lectures are to be given on a Tuesday and Thursday in February or March, 1939.

A copy of Dr. MILROY'S "Suggestions" on the subject of his bequest, and information as to the emolument, may be obtained from the Registrar.

August, 1937.

LONDON HOSPITAL MEDICAL COLLEGE

F.R.C.S.

A Course of Instruction for the FINAL FELLOWSHIP EXAMINATION will begin on Monday August 30th, 1937. Fees (exclusive of Operative Surgery) 25 guineas. Operative Surgery, 10 guineas.

Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, London Hospital Medical College, Turner Street, London, E.1.

LONDON HOSPITAL MEDICAL COLLEGE

PRIMARY FELLOWSHIP EXAMINATION.

A COURSE OF INSTRUCTION for the above Examination will begin on Wednesday, Sept. 1st. The fee for the Course is 15 guineas.

Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, Turner Street, Mile End, E.1.

LONDON HOSPITAL MEDICAL COLLEGE & DENTAL SCHOOL

THE WINTER SESSION will Open on Friday, October 1st.

The LONDON HOSPITAL serves the East End of London, and with eight hundred and fifty beds is the largest voluntary Hospital in England. The Out-patient Department, which deals with a hundred thousand new patients per annum, is extensively used for teaching.

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SPECIAL COURSES in Anatomy and Physiology for the Primary F.R.C.S. and Advanced Courses in Surgery for the Final F.R.C.S. Examination, and in Medicine for the M.D. and M.R.C.P. Examinations, are held twice a year.

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The HOSPITAL is only 20 minutes from Charing Cross and Baker Street Stations. For those who wish to live in immediate proximity to the Hospital there is accommodation for sixty students in the Students' Hostel.

Further details may be obtained from the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., or from the Sub-Dean, Dr. A. E. CLARK-KENNEDY, M.D., F.R.C.P., Physician to the Hospital and Fellow of Corpus Christi College, Cambridge, who are always pleased to meet students wishing to see the Hospital and College. Application for admission should be made to the Dean.

Turner Street, London, E.1.

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FEE: 50 Guineas. As the number of students that can be taken is limited, applications for admission should be made soon. They should be addressed to the Dean, St. Bartholomew's Hospital, E.C.1.

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Short Intensive Revision Courses, Oral and Postal, in preparation for these Diplomas.

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(Associated with the General, Queen's and Special Hospitals for Clinical Teaching)

THE NEXT SESSION OPENS ON OCTOBER 4th, 1937.

The University grants Degrees in Medicine, Surgery and State Medicine, and a Diploma in Public Health: also Degrees and a Diploma in Dental Surgery.

The Courses of instruction are also adapted to meet the requirements of other Universities and Licensing Bodies.

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A large number of Resident Hospital appointments in Birmingham and District are open to qualified students of the School.

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Entrance and other Scholarships and Exhibitions and various Prizes and Medals are awarded annually in the Faculty of Medicine, full details of which are in the Faculty syllabus.

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The School of Dentistry, in conjunction with the General and Queen's Hospitals, affords a complete curriculum for the Dental Diplomas and Dental Degrees of the University and all other Licensing Bodies. A Dental Scholarship of the value of £46.17.6, tenable for one year, is offered annually.

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The necessary courses of Instruction in Chemistry, Physics and Biology may be attended in the University.

For syllabus and further information apply to the Registrar.

STANLEY BARNES, M.D., D.Sc., F.R.C.P.,
Dean of the Faculty of Medicine.

UNIVERSITY OF GLASGOW.

LECTURESHIP IN PATHOLOGICAL BIOCHEMISTRY

The Selection Committee gives notice of a vacancy in the Lectureship in Pathological Biochemistry, tenable at the Royal Hospital for Sick Children, Glasgow. The post carries with it the appointment of Biochemist to the Royal Hospital for Sick Children. Applicants must hold a medical qualification and have clinical experience. Salary (for the combined post) £700.

Information regarding the Lectureship may be obtained on application to the Secretary of the University Court, The University, Glasgow, W.2, to whom applications should be sent not later than September 11th, 1937.

J. S. MUIRHEAD,
Secretary of University Court.

July, 1937.

UNIVERSITY OF LONDON.

The Senate invite applications for the UNIVERSITY CHAIR OF PHARMACOLOGY tenable at the COLLEGE OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

Salary £1,200 a year.

Applications (12 copies) must be received not later than first post on September 14th, 1937, by the Academic Registrar, University of London, W.C.1, from whom further particulars should be obtained.

COUNTY BOROUGH OF SUNDERLAND EDUCATION COMMITTEE.

ASSISTANT SCHOOL MEDICAL OFFICER.

Applications from qualified medical practitioners are invited for the post of Assistant School Medical Officer (man), at a salary at the rate of £600 per annum, advancing by annual increments of £25 to a maximum of £700.

Applicants, since qualification, should have:

(1) Had at least three years' experience of the practice of medicine.

(2) Held an appointment gaining practical experience in the use of a modern x-ray plant for diagnostic and treatment purposes, and also experience in the use of ultra violet rays. A Diploma in Radiology will be an advantage.

Preference will be given to applicants who:

(1) Have had some experience of school medical work.

(2) Have enjoyed opportunities for the study of diseases of children.

The candidate appointed will be required to devote the whole of his time to the duties of the office.

The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the selected candidate will be required to pass a medical examination.

Forms of application may be obtained from the undersigned, to whom they should be returned not later than Monday, August 23rd, 1937.

Canvassing will be a disqualification.

W. THOMPSON,
Director of Education.

Education Offices,
15, John Street,
Sunderland.
July, 1937.

CITY OF COVENTRY.

CITY ISOLATION HOSPITAL

RESIDENT MEDICAL OFFICER

Applications are invited from duly qualified and registered male medical practitioners (preferably married) for the post of Resident Medical Officer at the City Isolation Hospital (148 beds). The hospital is modern and a suitable house for the R.M.O. is provided.

Applicants should have had special experience in the diagnosis and treatment of infectious diseases, and experience in the treatment of venereal diseases will be deemed an additional qualification.

The salary will be at the rate of £250 per annum increasing subject to satisfactory service by biennial increments of £50 to £350 per annum plus emoluments (house, fuel, and light) valued at £150 per annum.

The post is designated under the Local Government and Other Officers' Superannuation Act 1922, as amended in regard to annuities to widows by the Coventry Corporation Act 1936, and the successful applicant will be required to pass a medical examination as to fitness and to contribute to the superannuation fund. The successful applicant will also be required to contribute to the Coventry Staff Widows' and Orphans Pension Fund.

Application (on the prescribed form which is obtainable on request) together with copies of three recent testimonials must reach the undersigned on or before August 20th 1937.

A. MASSEY
Medical Officer of Health

The Council House,
Coventry
July 23rd, 1937

CITY OF CARLISLE

Appointment of ASSISTANT MEDICAL OFFICER for MATERNITY and CHILD WELFARE.

Applications are invited from medical women to take charge of the Corporation Maternity Home (12 beds). Ante natal, Post natal, and Infant Clinics. The duties will also include School Medical Inspection, Supervision of Midwives, and such other Public Health duties as may from time to time be prescribed. The duties of the respective offices will be carried out under the direction of the Medical Officer of Health.

Applicants must have had at least two years' experience as Maternity and Child Welfare Medical Officer, and should be in possession of the Diploma in Public Health, and preference will be given to candidates who have a special qualification in Midwifery.

The commencing salary will be at the rate of £600 per annum, rising by annual increments of £25 to a maximum of £700 per annum, and the lady appointed will be expected to commence duty at about the beginning of November.

The appointment is subject to the Local Government and Other Officers' Superannuation Act, 1922.

Applications, endorsed "Medical Officer for Maternity and Child Welfare," and accompanied by copies of three recent testimonials, should be submitted to the Medical Officer of Health, 22, Fisher Street Carlisle on or before August 18th, 1937.

By Order,
FREDK. G. WEBSTER,
Town Clerk.

Town Clerk's Office, Carlisle
July 13th. 1937

HULL CORPORATION HEALTH DEPARTMENT.

Hull Municipal Maternity Home and Infants' Hospital (104 Beds).

JUNIOR RESIDENT MEDICAL OFFICER (WOMAN)

Applications are invited from unmarried or widowed Women Medical Practitioners for the appointment of Junior Resident Medical Officer at the above Institution.

Salary £100 per annum, together with board, washing and residence at the Maternity Home.

The appointment will be for six months, with a possible extension for a further period of six months.

Applications, on forms to be obtained from the undersigned, are returnable not later than noon on Thursday, August 12th, 1937.

NICOLAS GEBBIE, M.D.,
Medical Officer of Health

Health Department,
Guildhall, Hull.
July, 1937.

NEW SUSSEX HOSPITAL FOR WOMEN, WINDLESHAM ROAD, BRIGHTON

(60 Beds)

Applications are invited from medical women for the post of HONORARY SURGEON to the New Sussex Hospital. The Senior Assistant Surgeon is an applicant for the post, and in the event of her election an Assistant Surgeon will be required. Candidates should possess the F.R.C.S. or equivalent qualification.

Copies of three recent testimonials to be sent to the Secretary on or before September 14th.

P. F. SPOONER,
Secretary.

Board Room,
Windlesham Road, Brighton.

SOUTHERN RHODESIA MEDICAL SERVICE.

GOVERNMENT MEDICAL OFFICER.

Applications are invited from single, fully qualified male Medical Practitioners for appointment as a Government Medical Officer in the Southern Rhodesia Medical Service.

Salary will be on the scale £660—£25—£750 per annum. There is also a senior grade (£750—£25—£900) to which promotions are made as vacancies occur. Salary will commence from the date of assumption of duty in Southern Rhodesia. In addition, private practice is allowed.

The successful applicant will be required to sign an agreement for three years' service in the first instance, and thereafter may make application to be placed in the pensionable establishment.

A free second-class steamship passage to Cape Town and first-class railway ticket thence to Southern Rhodesia will be provided.

Canvassing either directly or indirectly, will disqualify applicants.

The applicants should state the date on which they would be prepared to leave England if appointed.

Applications, stating age, qualifications and experience, together with copies of testimonials, should reach the Official Secretary, Office of the High Commissioner for Southern Rhodesia, 429 Strand, London, W.C.2 (from whom further particulars and application form may be obtained) not later than August 21st 1937.

LANCASHIRE MENTAL HOSPITALS BOARD

APPOINTMENTS OF MEDICAL SUPERINTENDENTS

Applications are invited for the following whole-time appointments:

Medical Superintendent, County Mental Hospital, Lancaster (vacant on September 30th next).

Medical Superintendent, County Mental Hospital, Winwick, near Warrington (vacant on October 31st next).

The salary in respect of each appointment is £950 per annum, rising by annual increments of £100 to a maximum salary of £1,350 per annum, together with emoluments valued at £150 per annum.

The appointments will be subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

Applicants are required to submit their applications on a form to be obtained from the undersigned, and applications endorsed "Medical Superintendent, Lancaster Winwick," as the case may be, should be sent to or delivered at my office not later than 12 noon on Wednesday, September 1st, 1937.

Canvassing either directly or indirectly, will be a disqualification.

GEORGE ETHERTON,
Clerk of the Board.

County Offices,
Preston
July, 1937

HERTFORDSHIRE COUNTY COUNCIL. PUBLIC ASSISTANCE.

COUNTY INSTITUTION, OSTER HOUSE, ST. ALBANS.

HOUSE SURGEON.

Applications are invited for the post of House Surgeon (either sex) at the above Institution, which comprises general medical and surgical wards, with separate Maternity and Children's Units.

Salary will be at the rate of £175 per annum, with an allowance of £3 3s per week until such time as board and residence can be provided in the Institution. The appointment will be limited to one year and not renewable. The House Surgeon must, until quarters in the Institution are provided, reside near the Institution at an address to be approved by the Guardians' Committee.

Candidates must be duly qualified and registered.

Applications, stating age, qualifications and experience, with copies of not more than three recent testimonials, should be sent to the Clerk of the St. Albans Guardians' Committee, Oster House, St. Albans (from whom any further details may be obtained) as soon as possible.

ELTON LONGMORE,
Clerk of the County Council.

Hertford.
July 30th, 1937.

PUBLIC HEALTH DEPARTMENT. CITY OF CHESTER

CITY HOSPITAL

JUNIOR RESIDENT MEDICAL OFFICER required for the above general hospital.

Salary will be £200 per annum, with full residential emoluments. The appointment will be for one year.

The successful candidate will be required to take up duties on October 1st.

Applications, stating age, qualifications and previous experience, together with copies of three recent testimonials, should be sent to the Medical Officer of Health, Town Hall, Chester, by Wednesday, August 18th.

J. H. DICASON,
Town Clerk.

ERITH URBAN DISTRICT COUNCIL.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Council of the Urban District of Erith invite applications from Medical Practitioners, of not less than three years' standing in their profession, for the above appointment.

The commencing salary will be determined by previous experience, with a minimum of £500 per annum and a maximum of £600 per annum. Annual increments of £25 will be given to a maximum salary of £700 per annum.

The appointment is subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the person appointed will be required to pass a medical examination.

The appointment will be determinable by three months' written notice on either side, and will also be subject to the Council's Standing Orders, Regulations and Resolutions governing staff.

The appointment is a whole time one. The duties will consist mainly of work in the School Medical Department, but will include, also, duty in any section of the Health Services of the Council.

Experience in the certification of mental defectives, in ante-natal care, and the possession of a registrable qualification in Public Health will be considered additional recommendations.

Applications, accompanied by copies of not more than three recent testimonials, must be made on forms obtainable from the Medical Officer of Health, Council Offices, Erith, to whom they should be returned to reach him not later than August 17th, 1937, endorsed "Assistant Medical Officer of Health."

Canvassing, either directly or indirectly, will disqualify.

DOUGLAS S. TWIGG,
Council Offices, Erith. Clerk to the Council.
July 30th, 1937.

LANCASHIRE COUNTY COUNCIL.

PARK HOSPITAL, DAVYHULME, NEAR MANCHESTER.

APPOINTMENT OF SENIOR RESIDENT MEDICAL OFFICER.

Applications are invited from registered Male Medical Practitioners for the appointment of Senior Resident Medical Officer at the above Hospital. Candidates must be unmarried. The appointment is for one year.

Salary £350 per annum, together with the usual residential allowances.

The Hospital comprises 500 beds for acute cases, is fully equipped in every respect, and is recognised as a complete Training School for Nurses.

The appointment will be terminable by one month's notice on either side.

Forms of application may be obtained from the COUNTY MEDICAL OFFICER OF HEALTH, Hospital and Medical Department, County Offices, Preston, to whom all applications, accompanied by copies of not more than two recent testimonials, must be forwarded so as to be received not later than Saturday, September 4th, 1937.

County Offices, GEORGE ETHERTON.
Preston. Clerk of the County Council.
July 29th, 1937.

LANCASHIRE COUNTY COUNCIL.

JUNIOR ASSISTANT MEDICAL OFFICER, WRIGHTINGTON HOSPITAL, APPLEY BRIDGE.

Applications are invited for the post of Junior Assistant Medical Officer (male, unmarried) for the Wrightington Hospital, which contains 206 beds for non-pulmonary tuberculosis (adults and children) and 20 beds for "combined" pulmonary and non-pulmonary cases. Salary £200 per annum, together with board, residence and laundry. The appointment will commence on October 1st or thereabouts, and will be for twelve months.

The medical staff consists of medical superintendent, two assistants, two consultant orthopaedic surgeons, and other visiting surgeons. There are excellent facilities for reading for M.D.

Forms of application and conditions of appointment obtainable from CENTRAL TUBERCULOSIS OFFICER, County Offices, Preston. Letters to be marked "Wrightington M.O."

Closing date August 28th.

County Offices, GEORGE ETHERTON.
Preston. Clerk of the County Council.

LANCASHIRE COUNTY COUNCIL.

TEMPORARY ASSISTANT TUBERCULOSIS OFFICER.

A temporary Assistant Tuberculosis Officer required from September 1st until the end of November. Duties comprise dispensary sessions, home visitation of patients, and visits to County sanatoria. Car essential; mileage fee payable, plus personal allowance; live out. Salary, 15 guineas weekly.

Applications, stating tuberculosis experience, to Central Tuberculosis Officer, County Offices, Preston, Lancs.

CARMARTHENSHIRE COUNTY COUNCIL.

APPOINTMENT OF ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from registered medical practitioners for the post of whole-time Assistant County Medical Officer of Health (male). Applicants must not be over 35 years of age, and must possess the Diploma in Public Health.

Salary £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum, plus £100 per annum for travelling expenses. The post is subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and to the successful candidate passing a medical examination.

The successful candidate, who will be under the direction and control of the County Medical Officer of Health, will be required to reside at Carmarthen and to carry out such duties as may from time to time be imposed upon him by the County Medical Officer. The duties for the present will comprise those in connexion with the School Medical Service, but general public health work will be allocated later on.

The appointment will be held during the pleasure of the Council, and will be determinable by the Officer by three months' notice in writing.

A form of application can be obtained from the undersigned, which must be returned, together with copies of three recent testimonials, not later than August 31st, 1937.

County Offices, DANIEL JOHNS,
Carmarthen. Clerk of the County Council.
August 1st, 1937.

BOROUGH OF STRETFORD.

ASSISTANT MEDICAL OFFICER.

Applications are invited from duly qualified medical practitioners for the whole-time appointment of Assistant Medical Officer of Health and Assistant School Medical Officer at a commencing salary of £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum.

Applicants must have had at least three years' experience in the practice of their profession subsequent to obtaining a registrable qualification, and must also hold the Diploma in Public Health.

The appointment is subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922.

The terms and conditions of appointment, together with form of application, may be obtained from the Medical Officer of Health, Town Hall, Stretford, and all applications must be received by the undersigned not later than August 21st, 1937.

Town Hall, C. TREWAVAS,
Talbot Road, Stretford. Town Clerk.

LIVERPOOL PORT SANITARY AUTHORITY.

ASSISTANT PORT MEDICAL OFFICER.

The Corporation of the City of Liverpool, as Port Sanitary Authority, require the services of an Assistant Port Medical Officer, whose duties will be in connection with the tidal inspection of vessels, the medical inspection of aliens, and such other duties as may from time to time be assigned to him.

The salary will be £700 per annum.

Candidates, whose age shall not exceed 35 years, must possess a registrable medical and surgical qualification, and should hold a Diploma in Public Health.

The person appointed will be required to devote whole-time services to the duties specified and must reside within the city.

Canvassing of members of the Committee or the City Council will be considered a disqualification.

Form of application and details as to the duties may be obtained from the MEDICAL OFFICER OF HEALTH, Municipal Annexe, Liverpool, 2.

Applications, together with copies of not more than three recent testimonials, to be addressed to the undersigned so as to be received not later than August 31st, 1937. Envelopes to be endorsed "Assistant Port Medical Officer."

Municipal Buildings, W. H. BAINES.
Liverpool, 2. Town Clerk.

METROPOLITAN BOROUGH OF HAMPSTEAD.

MEDICAL OFFICER TO MUNICIPAL POST-NATAL CLINICS.

Applications are invited from registered medical practitioners (female) having special experience in post-natal work.

The successful applicant will be required to devote two sessions (approximately two hours each) per week to this work, and the remuneration will be at the rate of 1½ guineas per session.

Forms of application and further particulars of the appointment may be obtained from the Medical Officer of Health at the Town Hall. Completed application forms must be forwarded to the undersigned not later than Tuesday, August 31st, 1937.

Town Hall, P. H. HARROLD,
Haverstock Hill, N.W. 3. Town Clerk.
July, 1937.

ROWLEY REGIS BOROUGH COUNCIL.

DEPUTY MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER (Female).

The Council of the Borough of Rowley Regis invite applications for the above whole-time appointment from duly qualified Registered Medical Practitioners holding a Diploma of Public Health and not over 40 years of age. The officer appointed must have had experience in Maternity and Child Welfare, Pre-natal and School Medical Work, and must possess the necessary qualifications to act as Medical Supervisor of Midwives. The salary will be £600, and will rise, subject to satisfactory service, by annual increments of £25 to £700 per annum, and travelling expenses, in accordance with the Council's scale, will be allowed.

Candidates must apply on the prescribed form, to be obtained from Dr. Frank Asker, Medical Officer of Health, Haden Hill Park Offices, Old Hill, Staffs, by whom applications, accompanied by copies of not more than three recent testimonials, must be received not later than Monday, August 23rd, 1937.

Council Offices, C. BUCKLEY,
Old Hill, Staffs. Town Clerk.

STAFFORDSHIRE COUNTY COUNCIL. WORDSLEY PUBLIC ASSISTANCE INSTITUTION.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from registered medical practitioners (male) for the post of Assistant Medical Officer (Resident) at Wordsley Public Assistance Institution, near Stourbridge. Salary £300 per annum, with board, residence and laundry. Candidates should be unmarried.

The appointment will be, in the first instance, for a period of six months, but the successful candidate will be eligible for reappointment for a further period of six months.

The Institution is in process of conversion into a Hospital, and facilities will be available for gaining experience in medicine, surgery, midwifery, and diseases of children.

Further details may be obtained on application to the County Medical Officer of Health.

Applications, stating age, qualifications and experience, with copies of testimonials, should be sent to the undersigned not later than Thursday, August 19th, 1937.

County Buildings, H. L. UNDERWOOD,
Stafford. Clerk of the County Council.
July 30th, 1937.

COUNTY BOROUGH OF READING. BATTLE HOSPITAL.

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from registered medical practitioners for the appointment of Resident Assistant Medical Officer (male) at the above Hospital, at a salary of £300 per annum, with board, residence, etc.

Candidates must be single, and should not be more than 30 years of age.

The selected candidate will be required to work under the direction of the Medical Superintendent.

The appointment will be for a period of one year, and preference will be given to candidates who are reading for higher qualifications.

Forms of application may be obtained from, and must be returned duly completed to, the undersigned, with copies of three recent testimonials.

Canvassing, either directly or indirectly, will disqualify.

Town Hall, C. S. JOHNSON,
Reading. Town Clerk.
July 31st, 1937.

NORTHAMPTON COUNTY BOROUGH EDUCATION COMMITTEE.

ASSISTANT SCHOOL DENTIST.

Applications are invited for the appointment of a fully-qualified Dental Surgeon as Assistant School Dentist. Salary £450 per annum.

Further particulars and forms of application may be obtained from the undersigned, by whom applications should be received by not later than August 20th, 1937.

H. C. PERRIN, Secretary for Education, Education Office, "Springfield," Cliftonville, Northampton

BECKETT HOSPITAL AND DISPENSARY. BARNSLEY. (153 Beds. 3 Residents.)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male), General Surgical, Ear, Nose and Throat Gynaecology, and anaesthetics. Candidates must be fully qualified and registered.

Salary, £200 per annum, with board, residence and laundry.

Applications, stating age, qualifications, accompanied by testimonials, should be addressed to the undersigned immediately.

ARTHUR L. BOURNE,
Secretary-Superintendent.
August 3rd, 1937.

ROYAL NAVAL MEDICAL SERVICE.

Vacancies exist for Medical Officers in the Royal Navy, and applications are invited for entry in October, 1937.

Candidates below the age of 28 years are preferred, and they must be registered under the Medical Acts. No examination in professional subjects will be held, but candidates will be required to attend for interview by a Selection Board.

Selected candidates will be entered for Service for a period of three years in the first instance, which may be extended to five years at the discretion of the Admiralty.

At the end of three years' service officers may retire with a gratuity of £400, but those who serve for five years will receive £1,000.

At the end of five years' Short Service permanent commissions will be given to selected officers who wish to make the Naval Medical Service their permanent career. Officers transferred to the permanent list will receive a gratuity of £1,000 (less Income Tax).

Opportunities are available for officers on the permanent list to specialise, and ample provision is made for Post-Graduate study.

Copies of the regulations for entry and conditions of service, including rates of pay and allowances, may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1, and from the Deans of all Medical Schools.

Applications for entry from intending candidates must be received not later than August 31st, 1937.

CITY OF BIRMINGHAM.

SELLY OAK HOSPITAL (520 Beds).

RESIDENT GYNAECOLOGIST AND OBSTETRICIAN (male).

Applications are invited for the above whole-time appointment from fully qualified registered medical practitioners who have had good experience in Gynaecology and Obstetrics, and who are Fellows of the Royal College of Surgeons (England).

Furnished quarters, rations, laundry and attendance will be provided, or alternatively a cash allowance will be paid if the officer appointed should be non-resident.

Salary will be £700, rising by annual increments of £50, to a maximum of £1,000 per annum, together with the emoluments stated above.

The appointment will be dependent on the candidate passing a medical examination and be subject to the Birmingham Corporation's Superannuation Scheme; and the Birmingham Municipal Officers' Widows' and Orphans' Pensions Scheme (if applicable). The appointment will be terminable by one month's notice on either side. The officer appointed will be required to refund to the Council all fees and allowances received in connexion with his duties.

Further particulars of the appointment may be obtained from the Medical Superintendent of the Hospital.

Applications, stating age, experience and qualifications, accompanied by copies of recent testimonials, and endorsed "Gynaecologist and Obstetrician," should be sent to the Medical Superintendent not later than August 21st, 1937.

The Council House, Birmingham. F. H. C. WILTSHIRE, Town Clerk.

CITY OF BRADFORD.

MALE ASSISTANT CITY PATHOLOGIST required.

Salary £500 per annum, rising to £700 per annum by annual increments of £25.

The salary is subject to a deduction of 5 per cent. under the terms of the Local Government and Other Officers' Superannuation Act, 1922, and the successful candidate will be required to pass a satisfactory medical examination.

Application forms may be received from the Medical Officer of Health, Town Hall, Bradford, and should be delivered to the undersigned not later that August 31st, 1937.

Town Hall, Bradford. N. L. FLEMING, Town Clerk.

AMENDED ADVERTISEMENT.

CITY OF BIRMINGHAM.

ASSISTANT MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE.

The Public Health Committee invite applications from Medical Officers (Women) in connexion with the Maternity and Child Welfare Scheme.

Applicants must have held a six months' appointment as Physician in a Children's Hospital, and also held a six months' resident appointment in a Maternity Hospital. It is desirable that applicants should hold the Diploma in Public Health, and if they have not already obtained the Master of Midwifery Diploma they may be required to do so within a subsequent period. The salary will be £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum. The appointment will be subject to the Birmingham Corporation Superannuation Scheme and to the candidate passing a medical examination, and will be subject to three months' notice on either side.

The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by her.

Applications, endorsed "Medical Officer for Maternity and Child Welfare," and accompanied by copies of three recent testimonials, to be made on a form obtainable from the Medical Officer of Health, Council House, Birmingham, 3, and returned to him on or before August 14th, 1937.

Selected candidates will be interviewed at the Council House on August 25th, 1937.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.
Ventnor, Isle of Wight.

SECOND ASSISTANT RESIDENT MEDICAL OFFICER (male), unmarried, required for six months commencing September 16th, 1937. Salary at the rate of £200 per annum, with board, residence, and laundry allowance. The successful candidate will be eligible for promotion to First Assistant Resident Medical Officer for a further six months at a salary at the rate of £300 per annum, with similar emoluments. Candidates must be fully qualified in Medicine and Surgery, and previous experience in Tuberculosis and Bacteriological work will be an advantage.

Applications, in candidates' own handwriting, stating age, qualifications, and experience (with one copy of three recent testimonials), to be sent to the Medical Superintendent, Royal National Hospital for Consumption, Ventnor, Isle of Wight, not later than Saturday, August 14th, 1937.

CITY OF BIRMINGHAM.

SELLY OAK HOSPITAL (520 Beds).

RESIDENT EAR, NOSE AND THROAT SURGEON (male)

Applications are invited for the above whole-time appointment from fully qualified registered Medical Practitioners, who are Fellows of the Royal College of Surgeons (England).

Candidates must have had good experience in Ear, Nose and Throat surgery and be prepared, if called on, to undertake work also at Dudley Road Hospital.

Furnished quarters, rations, laundry and attendance will be provided or alternatively a cash allowance will be paid if the officer appointed should be non-resident.

The appointment will be for a period of one year, terminable within that period by one month's notice on either side. Salary will be at the rate of £700 per annum, together with the emoluments stated above. The officer appointed will be required to refund to the Council all fees and allowances received in connexion with his duties.

Applications, stating age, experience and qualifications, accompanied by copies of recent testimonials and endorsed "Ear, Nose and Throat Surgeon," should be sent to the Medical Superintendent not later than Saturday, August 14th, 1937.

The Council House, Birmingham. F. H. C. WILTSHIRE, Town Clerk.
June, 1937.

BEDFORD COUNTY HOSPITAL.
(120 Beds.)

Wanted, HOUSE SURGEON, for a term of not less than six months. Salary £150 per annum. He must be fully qualified, male, unmarried. Board, lodging and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee.

BATLEY AND DISTRICT HOSPITAL.
(General Hospital—84 Beds.)

Required a duly qualified RESIDENT HOUSE SURGEON (male). Salary £175, with board, residence and laundry. Applications, with copies of testimonials, should be sent at once to—

A. W. WESTERN, Secretary.
Batley, Yorks.

THE LIVERPOOL SANATORIUM.
DELAMERE FOREST, FRODSHAM, via WARRINGTON.

(175 Beds for the Treatment of Patients Suffering from Pulmonary Tuberculosis.)

JUNIOR ASSISTANT to the Medical Superintendent. Applications are invited from male medical practitioners with suitable qualifications for the above-named appointment. Candidates must be unmarried, and preference will be given to applicants who have held resident medical appointments since qualification, and have had practical institutional experience in the treatment of pulmonary tuberculosis.

Salary will be at the rate of £225 per annum, with board, quarters and laundry.

The appointment is normally tenable for twelve months, but may be extended.

Particulars of duties and full information, together with forms of application, can be obtained from the Medical Superintendent.

Forms completed, with copies of three recent testimonials, should be sent to the Medical Superintendent, The Liverpool Sanatorium, Delamere Forest, Frodsham, via Warrington.

MANCHESTER ROYAL INFIRMARY
ASSISTANT MEDICAL OFFICER MASSAGE AND ELECTRICAL DEPARTMENT.

The Board of Management invite applications from registered medical practitioners (men and women) for the above appointment. Previous experience in the work is not essential.

The duties are to attend daily and to assist the Medical Officer in charge of the Department. The appointment is part time (non-resident) for one year. Salary £100 per annum.

Candidates must state age, and send twelve copies of their application and testimonials to the undersigned on or before Thursday, August 12th, 1937.

By Order
W. R. TINDALE,
July 26th, 1937. General Supt. and Secretary.

KEIGHLEY AND DISTRICT VICTORIA HOSPITAL, YORKSHIRE (West Riding).
(124 Beds.) (Two Residents.)

APPOINTMENT OF SECOND RESIDENT MEDICAL OFFICER.

Duties to commence if possible September 1st.

Applications are invited from registered medical practitioners, male or female, for the above appointment. Proof of registration to be furnished before appointment.

Salary £120 per annum, together with full residential emoluments. Term, six months, renewable.

Applications, with particulars of age, experience, nationality, together with copies of two recent testimonials, to be sent to the undersigned not later than Wednesday, August 11th, 1937.

J. YOUNG,
Secretary-Superintendent.

HOUNSLOW HOSPITAL, STAINES ROAD, HOUNSLOW, MIDDLESEX

APPOINTMENT OF RESIDENT PHYSICIAN AND CASUALTY OFFICER

Applications are invited from registered medical practitioners (male) for:

Junior House Physician and Casualty Officer, salary £100 per annum, with full board, etc., and extras.

Applications, stating age, nationality, qualifications and previous experience, together with copies of three recent testimonials, should be forwarded to the Secretary, endorsed "Appointment."

ABERDEEN ROYAL INFIRMARY.

The Board of Directors invite applications for the post of SURGICAL REGISTRAR. The post is a full-time one, and the successful applicant will be required to perform the duties of a Junior Assistant Surgeon attached to a general Surgical Ward.

Salary £200 per annum, with board and laundry. Six copies of applications (and testimonials), stating age, qualifications, and experience, should be lodged with the undersigned by 10 a.m. on Thursday, August 12th, 1937.

230, Union Street, Aberdeen. JOHN A. McCONACHIE, Clerk and Treasurer.

ABERDEEN MATERNITY HOSPITAL

The Board of Directors invite applications for the post of SENIOR RESIDENT MEDICAL OFFICER AND REGISTRAR. The successful candidate will also be a part-time Assistant in the Department of Midwifery of the University of Aberdeen. Salary £200 per annum plus board.

Applications, with recent testimonials (six copies of each), should be lodged not later than August 21st, with Messrs. Watt and Cumine, 8, Golden Square, Aberdeen, Secretaries of the Hospital, from whom particulars as to salary and terms of appointment may be obtained.

BURY INFIRMARY (LANCS.)
(127 Beds.)

APPOINTMENT OF CASUALTY OFFICER (MALE).

A vacancy as above arises on the Resident Medical Staff, and applications are invited for the post.

The Resident Staff consists of an R.S.O., House Surgeon and House Physician, and a Casualty Officer.

In addition to his duties in the Casualty Department the Casualty Officer is also responsible for the In-patient and Out-patient work in connection with the Eye, and Ear, Nose and Throat Department.

The appointment is for six months at a salary at the rate of £150 per annum, with board, residence and laundry, and the successful candidate will be expected to commence duties immediately.

Applications, stating age, qualifications, and nationality, together with copies of three recent testimonials, are to be forwarded to the undersigned as soon as possible, endorsed "Casualty Officer."

Further particulars may be had on application.

H. WILKINSON,
Superintendent

ROCHDALE INFIRMARY AND DISPENSARY
(110 Beds. Three Residents)

The Board of Management invites applications for the appointment of HOUSE PHYSICIAN (male). The salary attached to the appointment is at the rate of £150 p.a., with board, residence, laundry, etc. The duties include work in the Out-patient, Aural, Ophthalmic, etc., Depts., as well as in the Wards. The Hospital covers a large industrial area, and affords excellent opportunity for experience.

Applications, stating age, nationality, etc., with three recent testimonials, to be sent to the Secretary, Rochdale Infirmary.

Infirmary Office, Rochdale. W. WYNNE, Secretary.

ROCHDALE INFIRMARY & DISPENSARY.
(110 Beds.) (Three Residents.)

The Board of Management invite applications from gentlemen for the appointment of SECOND HOUSE SURGEON.

The salary attached to the appointment is at the rate of £150 per annum, including board, residence and laundry.

Applications stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of the appointment may be had on application to the Secretary.

W. WYNNE,
Infirmary Office, Rochdale, Lancs. Secretary

THE SOUTHAMPTON CHILDREN'S HOSPITAL AND DISPENSARY FOR WOMEN

The Board of Management invite applications for the post of RESIDENT MEDICAL OFFICER (lady). Six months' appointment. Salary at the rate of £150 per annum, with board, residence and laundry.

Applications, stating age, and accompanied by copies of testimonials, to be sent to the undersigned not later than August 13th. The selected candidate will be required to take up her duties at the beginning of September.

ELLA K. MATTHEWS,
Secretary.

ROYAL ISLE OF WIGHT COUNTY HOSPITAL, RYDE.

JUNIOR HOUSE SURGEON wanted for early September. Unmarried, salary at the rate of £120 yearly, with board, residence and laundry.

Apply, stating age and nationality, enclosing copies of testimonials, to the Secretary before Saturday, August 14th, 1937.

A. S. GORDON,
Secretary.

THE CHILDREN'S HOSPITAL, SHEFFIELD.
(140 Beds.)

HOUSE SURGEON required IMMEDIATELY. Salary £100 per annum, with board, residence and laundry. Candidates (male and unmarried), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of three recent testimonials to the undersigned.

I. H. G. GARTLAND,
Superintendent and Secretary

THE MOUNT VERNON HOSPITAL.
(For Cancer.) Northwood, Middlesex.

An ASSISTANT HOUSE SURGEON will shortly be required. Candidates must be fully qualified and registered. Salary at the rate of £150 per year with board, lodging, etc. Applications, with copies of three testimonials, to be sent to: W. J. Morton Secretary; Offices, 32, Fitzroy Square W.1.

WESTON-S-MARE GENERAL HOSPITAL.
(50 Beds.)

HOUSE PHYSICIAN.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN at this Hospital. Salary at the rate of £150 per annum, with board, rooms and laundry. Duties to commence immediately. Applications, stating age, qualifications, and enclosing copies of testimonials, should be addressed to the undersigned.

LESLIE J. FURSLAND,
The General Hospital, Boulevard, Weston-super-Mare. Secretary.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL (280 Beds).

Applications are invited for the following appointments:

ONE CASUALTY OFFICER;

ONE RESIDENT ANAESTHETIST AND HOUSE SURGEON TO THE EAR, NOSE AND THROAT DEPARTMENT;

commencing immediately until December 31st, 1937, at a salary of £150 per annum, with board, lodging and laundry. Candidates must be male and unmarried.

Applications, accompanied by not more than three recent testimonials, should be sent to the undersigned at once.

HY. TRUSSON,
House Governor and Secretary.

GRANTHAM HOSPITAL.
(100 Beds.)

Applications are invited from fully qualified medical practitioners (male) for the post of RESIDENT MEDICAL OFFICER. The appointment is for six months (renewable), and will become available on September 11th, 1937. Salary £200 per annum, with board, residence, and laundry. Preference given to applicants who have already held a resident appointment. Applications, stating age, nationality, qualifications, and experience, with copies of three recent testimonials, should be sent to the undersigned

JOHN E. RAY,
Secretary-Superintendent.

EAST SUFFOLK AND IPSWICH HOSPITAL.
(350 Beds. Eight Residents.)

Wanted, September 1st, HOUSE SURGEON (male, British). Salary at the rate of £144 per annum, with board, apartments and laundry. The Hospital is recognised by the Royal College of Surgeons in respect of this post.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, to be sent to the undersigned on or before August 17th

The Hospital, Ipswich. ARTHUR GRIFFITHS, Secretary.
July 31st, 1937.

KETTERING AND DISTRICT GENERAL HOSPITAL

Applications are invited for the post of HOUSE PHYSICIAN.

Salary £150 per annum, with board, residence and laundry. Candidates must be fully qualified and registered.

The appointment is for six months, with eligibility for a further period.

Applications, stating age, nationality, and qualifications, together with copies of three testimonials, to be sent to the undersigned as soon as possible.

G. W. JACKSON,
Secretary-Superintendent.

STOCKTON AND THORNABY HOSPITAL, Stockton-on-Tees.
(140 Beds Three Residents.)

HOUSE PHYSICIAN (male), alternating with Casualty Officer, required for a period of at least six months, to commence September 1st, 1937. Salary £150 per annum, with board, residence and laundry. Candidates must be duly qualified and unmarried.

Applications, stating age, nationality and experience, together with copies of three recent testimonials, to be sent to the undersigned.

J. WILKINSON,
Secretary.

SWINDON AND NORTH WILTS VICTORIA HOSPITAL.

Wanted immediately, HOUSE SURGEON, male, British or Irish, unmarried. Salary £125 per annum, Appointment for six months, renewable. There are two residents. The hospital is fully equipped for general work and the specialities. Private beds: no obstetrics.

The post is suitable for a recently qualified man, and there is time for reading.

Apply, stating age and experience, with copies of recent testimonials, to:

K. N. KNAPP,
Secretary.

APPOINTMENTS Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE	CONTRACT PRACTICE—*(contd.)*	CONTRACT PRACTICE—*(contd.)*
ABERTYSSWG MEDICAL AID SOCIETY. *(Medical Officer.)*	LLWYNYPIA CLYDACH VALE, PENYGRAIG, GLAMORGAN *(Workmen's Medical Scheme.)*	OAKDALE, MON *(Medical Officer for Medical Aid Association.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL. *(Medical Officer.)*	MID-RHONDDA MEDICAL AID SOCIETY *(Assistant Medical Officer.)*	OGMORE VALLEY GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES *(All Friendly Society Appointments.)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney, N.S.W.	**VICTORIA** *(All Institute or Medical Dispensaries.)*	The Honorary Secretary, Victorian Branch, British Medical Association, Medical Society Hall, Albert St., East Melbourne, Victoria.	**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association "Shell House," 205, St. George's Terrace, Perth, Western Australia.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec. Queensland Branch, British Medical Association, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17.				

August 4, 1937 By Order of the Council. G. C. ANDERSON, *Secretary.*

BRISTOL ROYAL INFIRMARY AND BRISTOL GENERAL HOSPITAL (Amalgamated).

The Joint Radiological Committee invites applications for the appointment of a WHOLE-TIME RADIO-DIAGNOSTICIAN. Salary at the rate of £500 per annum.

The appointment will be for a period of two years commencing October 1st, 1937, and may be renewed for a further period of one year.

Candidates, who must possess a Special Diploma in Radiology, are requested to send their applications, stating age, with copies of testimonials to the undersigned on or before Wednesday, September 1st, 1937, from whom further particulars may be obtained.

THOMAS W. GREGG, F.C.C.S.,
Secretary Bristol General Hospital.

MANSFIELD AND DISTRICT GENERAL HOSPITAL. (140 Beds.)

HOUSE SURGEON (Male) required. Duties to commence as soon as possible. Salary at the rate of £150 p.a., with residence, board and laundry. The appointment is for six months and is renewable. The staff consists of a Resident Surgical Officer and two House Surgeons. Applications, stating age, qualifications and nationality, accompanied by not more than three recent testimonials, to be sent to the undersigned as soon as possible.

C. J. ADAMS,
Secretary.

WEST HERTS HOSPITAL, HEMEL HEMPSTEAD
(114 Beds. 24 miles from Euston.)

SENIOR RESIDENT MEDICAL OFFICER required, to commence duties about August 1st. Male unmarried preferred. Salary £150, with rooms, board and laundry.

Applications, stating essential particulars and enclosing copies of three recent testimonials, to be sent at once to:

ROBT. L. BUTTERFIELD,
Clerk to the Hospital

WORCESTERSHIRE MENTAL HOSPITAL, Barnsley Hall, Bromsgrove.

SECOND ASSISTANT MEDICAL OFFICER (male, single).

Applications for this post are invited from duly qualified registered medical practitioners, preferably with previous mental hospital experience.

Salary £350 per annum, rising by annual increments of £25 to £450, with board, apartments, laundry and attendance, valued for superannuation purposes at £90 per annum.

An additional £50 per annum will be paid to the successful candidate if holding the Diploma in Psychological Medicine. Appointment subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

Forms of application may be obtained from the Medical Superintendent, and they should be returned to him, accompanied by copies of three recent testimonials, not later than Tuesday, August 10th, 1937.

AYR COUNTY HOSPITAL.

The Directors invite applications for the position of RESIDENT HOUSE SURGEON (male), salary £125 per annum, with board and residence.

Appointment will be for six months from September 1st.

Applications, with copy testimonials, to be lodged with the subscriber not later than Saturday, August 14th, 1937.

Ayr County Hospital, JOHN J. GOUDIE,
July 28th, 1937 Secretary and Treasurer.

COSSHAM MEMORIAL HOSPITAL, Kingswood, Bristol.

Wanted a JUNIOR RESIDENT MEDICAL OFFICER. Salary £100 per annum, with board and laundry—to remain for six months in the first instance. Applicants (male) should be of British nationality, fully qualified, and registered.

Applications, with copies of recent testimonials, to be sent to the Secretary

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THE KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered Medical Practitioners for the post of ASSISTANT RESIDENT MEDICAL OFFICER at the South Wales Sanatorium (256 beds for male pulmonary cases), Talgarth, Brecs.

Salary £200 per annum, plus maintenance.

The appointment is limited to a period of one year.

Applications, stating age, qualifications, experience, etc., together with copies of three recent testimonials, should reach the undersigned not later than AUGUST 10th, 1937.

Memorial Offices, D. A. POWELL,
Westgate Street, Principal Medical Officer.
Cardiff.

THE ROYAL PORTSMOUTH HOSPITAL, PORTSMOUTH
(Six Resident Medical Officers).

Applications are invited for the post of FOURTH HOUSE SURGEON (male), qualified. Salary at the rate of £130 per annum, with board, etc. To commence duty immediately. Six months' appointment. Eligible on completion of term for extension or other resident posts.

Applications, stating age, nationality, etc., and copies of three recent testimonials, to be sent to the undersigned as soon as possible, from whom all particulars can be obtained.

B. WAGSTAFF,
Secretary.

ROTHERHAM HOSPITAL.

HOUSE SURGEON required for Ophthalmic and Ear, Nose and Throat Departments. Previous experience not essential. Salary £150 per annum, with board and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. Roberts, 3, Moorgate Street, Rotherham.

(Advertisements continued on p. 10)

BRITISH MEDICAL JOURNAL

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ASSISTANCIES

WANTED, ASSISTANT, FEMALE, GENERAL Practice, North Midlands city. Salary £400, outdoor. Ability drive car essential. State age, qualifications, experience Commence late September References and photograph.—Address, No. 5425, B.M.A. House, Tavistock Square, W.C.1.

WANTED EARLY OCTOBER, OUTDOOR ASSISTANTSHIP in better-class practice by married M.D., M.R.C.P.Ed., aged 29, with several years' hospital experience. Mainly medical work preferred.—Address, No. 5702, B.M.A. House, Tavistock Square, W.C.1.

WANTED, END OF SEPTEMBER, MALE ASSISTANT, outdoor, for good mixed practice in town of 43,000. £400 per annum and saloon car for practice use.—Send full particulars to Address, No. 5721, B.M.A. House, Tavistock Square, W.C.1.

WANTED, FOR SEPT. 1st, AN OUTDOOR, male, unmarried ASSISTANT for Industrial Practice near Newcastle-on-Tyne. Salary £400-£425, according to experience. Furnished house, coal, light, and attendance in addition.—Address, No. 5719, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY, INDOOR AND Outdoor ASSISTANTS for Town and Country Practices, with and without view to Partnership. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2.

WANTED IN OCTOBER. — ASSISTANT (female) for Women's General Practice in English provincial town. No dispensing. Please give experience, religion, age, and references.—Address, No. 5613, B.M.A. House Tavistock Square, W.C.1.

WANTED.—MALE ASSISTANT, BRITISH, for suburban partnership in Midland City. Live at Branch Surgery. Experience in dental anaesthesia essential. Give full particulars of experience and salary expected. Recent photo.—No. 5716, B.M.A. House, Tavistock Sq., W.C.1.

WANTED, INDOOR ASSISTANT, SEPT 1st, £300. Industrial Practice near Strand. Suit recently qualified.—Address, No. 5731, B.M.A. House, Tavistock Square, W.C.1.

WANTED, MALE ASSISTANT. MIXED Practice, East Yorks. Salary £300-350 p.a. (according to experience), all found. Car and car expenses provided.—Address, No. 5627, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — MALE ASSISTANT, WITH view to Partnership. Mixed practice, North Midlands. Salary £400, car allowance £50. Unfurnished house with surgery furnished. Hospital and general practice experience preferred.—Address, No. 5718, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OCTOBER 1st.—MALE ASSISTANT with view to partnership. Scot. Edin. Graduate. For mixed practice, country town, Midlands. Salary £400. Car allowance £50. Unfurnished house, with surgery furnished. Hospital and G.P. experience preferred.—Address, No. 5634, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OCTOBER 1st, MALE ASSISTANT (single) for Private and Panel Practice. South Coast town. Commencing salary £300 p.a. (all found), plus £50 car allowance.—Address, No. 5711, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT, pleasant country district, N. Wales. Small town with Hospital. Work very light. Car provided. Salary £400.—Address, No. 5311, B.M.A. House, Tavistock Square, W.C.1.

WANTED, INDOOR MALE ASSISTANT. Native of British Isles. £300 p.a. Car found. Dispenser and second assistant. Apply, with photograph.—Address, No. 5420, B.M.A. House, Tavistock Square, W.C.1.

WANTED, SEPTEMBER 1st, RELIABLE male ASSISTANT, single. Mixed practice in seaport town in South. Experience panel and midwifery essential. Must own car. Salary £500 per annum (inclusive). Furnished apartments over surgery. Board, 30s. per week.—Address, No. 5722, B.M.A. House, Tavistock Square, W.C.1.

WANTED, — SINGLE, MALE, ASSISTANT for Glamorgan Colliery Practice. Outdoor. Cottage Hospital with scope for surgery. Salary £400 p.a., with rooms and attendance.—Address, No. 5626, B.M.A. House, Tavistock Square, W.C.1.

INDOOR ASSISTANT FOR MIXED PRACTICE in South Coast town wanted soon. Salary £300 p.a. State age, nationality, experience. Dispenser kept.—Address, No. 5729, B.M.A. House, Tavistock Square, W.C.1.

KEEN MARRIED ENGLISH PRACTITIONER, aged 37, with own car and equipment and 10 years' experience of general practice, would like post as OUTDOOR ASSISTANT to practitioner who would offer adequate salary for loyal service.—Address, No. 5709, B.M.A. House, Tavistock Square, W.C.1.

OUTDOOR ASSISTANT, SMALL COUNTRY town North of England. Salary £400 plus allowance. Own car.—Address, No. 5609, B.M.A. House, Tavistock Square, W.C.1.

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M.B., B.CHIR. (CAMBRIDGE), AET. 26 years, with H.P. and G.P. experience, desires PARTNERSHIP in country Practice in South of England.—Address, No. 5414, B.M.A. House, Tavistock Square, W.C.1.

MIDDLESEX, NEAR HARROW, FOR SALE owing to ill-health, HALF-SHARE in well-established and rapidly increasing mixed-class Practice. Receipts last year £2,312, previous year £1,476. Panel 2,440, increasing at the rate of 25 per month. House for sale or rent. Exceptional opportunity. Premium for half-share £2,450. Any investigation in confidence.—Address, No. 5734, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS

WANTED, RESIDENT ASSISTANT MEDICAL OFFICER for PRIVATE MENTAL HOME near London. Previous mental experience not essential. Applicants must be single. Excellent prospects.—Address, No. 5712, B.M.A. House, Tavistock Square, W.C.1.

A LADY DISPENSER BOOKKEEPER supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Bayswater 0969), Secretary, 7, Westbourne Park Road, W.2.

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MEDICAL.—EXPERIENCED BUSINESS woman desires post as SECRETARY-RECEPTIONIST to London Doctor. Ten years' business experience. Typing. Bookkeeping. One year's training in Nursing.—Address, No. 5727, B.M.A. House, Tavistock Square, W.C.1.

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LOCUMS

WANTED.—LOCUM, AUGUST 27th-SEPT. 11th. Private and panel practice in Middlesex. Hospitality if desired. Preferably own car.—Address, No. 5706, B.M.A. House, Tavistock Square, W.C.1.

HOSPITALITY LOCUM REQUIRED August 27th to September 10th. Car expenses. Night work almost nil. Pretty garden and surrounding country, Staffordshire.—Address, No. 5704, B.M.A. House, Tavistock Square, W.C.1.

LOCUM WANTED, AUG. 31st-SEPT. 18th. Surrey country Practice. Work light. Dispenser employed Hospitality if needed. Pleasant house and garden. To bring own car. Usual terms.—Address, No. 5730, B.M.A. House, Tavistock Square, W.C.1.

LOCUM WANTED, Male. PLEASANT area Lancashire. August 26th to September 30th (both inclusive). Experienced and reliable.—Address, No. 5714, B.M.A. House, Tavistock Square, W.C.1.

PART-TIME LOCUM (WOMAN) WANTED for woman's Nucleus in pleasant London suburb, August 21st to 30th. Excellent train service. Might suit doctor doing postgraduate course. Hospitality and 3 gns. week offered.—No. 5726, B.M.A. House, Tavistock Sq., W.C.1.

RELIABLE LOCUMS WANTED IMMEDIATELY. Send full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2.

RETIRED GENERAL PRACTITIONER DESIRES LOCUM. Is disengaged from August 16th. Thoroughly experienced. Highest references.—LOCUM, c/o Dr. PEACOCK, 85, New Cavendish Street, W.

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WANTED, PRACTICE, ABOUT £1,000 P.A., in or near S. London, where vendor wishes to retire gradually, or is suitable for working with part-time Assistant (only week-ends).—Address, No. 5706, B.M.A. House, Tavistock Square, W.C.1.

WANTED TO PURCHASE, BY EXPERIENCED Medical Practitioner, London Graduate, etc., capable of Major Surgery, GOOD-CLASS PRACTICE, producing £1500 to £2000 per annum, anywhere South England, London excepted; or would consider 50-50 partnership.—Address, No. 5725, B.M.A. House, Tavistock Square, W.C.1.

BRISTOL.—MIXED AND INCREASING PRACTICE for sale. £1,300 p.a. Good scope. Large panel. Premium, £2,700. House to rent. Might consider partnership.—THE WESTERN MEDICAL AGENCY, 22, Clare Street, Bristol. 1 (Bristol 22689).

DERBYSHIRE.—OLD-ESTABLISHED PRACTICE for sale. Panel 1,040. Audited cash receipts average about £1,360. Premium 11 years' purchase. Appointments (not included in above figure of cash receipts) average about £300, half of which might be obtained by purchaser. Appointments are not vendible. House, with good living, professional and garage accommodation. Price £1,500. Might consider renting this.—Address, No. 5612, B.M.A. House, Tavistock Square, W.C.1.

DEVON.—UNOPPOSED COUNTRY PRACTICE, doing over £750. Appointments £75. *Panel 300. House to rent £52, rates £6, main* electricity, water, and drains. Garden and Garage. Sound reason for sale.—Address, No. 5713, B.M.A. House, Tavistock Square, W.C.1.

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LONDON, N.W.—CASH PRACTICE. Panel, 3,250. Increasing by 600 p.a. Good appointment. Small house to rent. Whole Practice, £6,000. Might consider share.—THE WESTERN MEDICAL AGENCY, 25, South Molton Street, W.1 (Mayfair 6941).

MIXED CLASS PRACTICE FOR SALE. Receipts over £500. Panel about 450; very good prospects. Suitable house for sale or let.—Apply, W. S. TRENCH, Solicitor, 15, Queen Street, Edinburgh.

NEAR LONDON.—LARGE PANEL PRACTICE. *Receipts over £3,000.*—THE WESTERN MEDICAL AGENCY, 25, South Molton Street, W.1 (Mayfair 6941).

NEAR WEMBLEY, MIDDLESEX.—NUCLEUS for sale. Established almost four years. Growing panel, now over 700. Private practice about £200 p.a. House to rent at £65 p.a. Offers invited.—Address No. 4721, B.M.A. House, Tavistock Square, W.C.1.

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HARLEY STREET AND DISTRICT.—A NUMBER of excellent CONSULTING ROOMS are available for full and part-time use at moderate rents. Particulars on application.—ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1. Lang. 2601.

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WIMPOLE STREET.—TO LET, SUITE OF THREE EXCELLENT ROOMS in one of the finest houses in this street. Low rent of £300 will be accepted.—Address, No. 4207, B.M.A. House, Tavistock Square, W.C.1.

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WANTED.—ORIGINAL ARTICLES, SCIENTIFIC, and for private practitioners, for British edited MEDICAL JOURNAL in Asia, est. 15 yrs. Authors supplied 100 reprints free. Permission republish other journals.—MANAGER, 36a, Lloyd's Road, Madras, India.

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IMPORTANT NOTICE

to MEMBERS of the MEDICAL PROFESSION

CLOTHES OF DISTINCTION for GENTLEMEN of DISCRIMINATING TASTE. Specially Cut, Fitted, and Moulded to each individual figure, made from Finest Quality Materials and in the Best Possible Style, cost no more than mass production ready-made clothes.

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Lined best quality Art Satin, Art Silk or Alpaca.
SOLID FANCY WORSTED TROUSERS, £2 2s.
The Ideal Suit for Professional or Business wear.
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LOUNGE SUITS - - - - - £6 6s.
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PLUS FOUR SUITS - - - from £6 6s.
THE IDEAL Suit for Country and Sporting wear.
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I should like all medical men who wish to have a good fashion to patronize Hall Hall Ltd. as all the clothes I have had from them during 35 years have been perfect in Fit, Cut and Finish.
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TENDERS

COUNTY COUNCIL OF MIDDLESEX.

PUBLIC ASSISTANCE DEPARTMENT.

TENDERS FOR—DRESSINGS, SURGICAL APPLIANCES, SURGICAL INSTRUMENTS etc., BASIC DRUGS, B.P. or B.P.C. PREPARATIONS, PROPRIETARY DRUGS, SERA, NITROUS OXIDE GAS, OXYGEN etc., PATHOLOGICAL REQUISITES, X-RAY LIGHT, and RADIUM REQUISITES. (Six Months.)

The County Council of Middlesex invites tenders for the supply of the above goods or materials for the period stated from October 1st, 1937, to its several *Hospitals, Institutions, Sanatoria, Children's Homes, Offices, etc.*

Forms of tender (upon which only tenders will be considered) and conditions of contract may be obtained on application to the Director of Public Assistance, 3, Central Buildings (Fourth Floor), Matthew Parker Street, Westminster, S.W.1, accompanied by a stamped addressed foolscap envelope. Sealed tenders marked "Tender for —," must be delivered at or before 11 a.m. on Monday, August 30th, 1937, addressed to "The Clerk of the Middlesex County Council, 'Z,' Guildhall, Westminster, S.W.1."

The Council does not bind itself to accept the lowest or any tender and reserves the right to accept any tender or part only.

Estimated quantities required are stated in the form of tender, and tenderers may tender to supply all or any one or more of the Establishments concerned.

C. W. RADCLIFFE,
Clerk of the County Council.

Guildhall, Westminster,
August, 1937.

NEWRY UNION.

SURGICAL INSTRUMENTS ETC., WANTED.

TENDERS ARE INVITED for the supply of Surgical Instruments, etc., for the use of Newry Union Infirmary. Catalogue of Instruments required can be had on application.

Tenders must be on official tender forms, which can be had from this office, and no other form of tender will be considered.

Sealed tenders endorsed "Surgical Instruments, etc.," should be lodged with me not later than 12 o'clock noon on Tuesday, August 24th, 1937. Security will be required.

The lowest or any tender not necessarily accepted.

For further particulars apply to the undersigned.

Union Offices, T. J. GREENAN,
Newry. Clerk of Union.
July 31st, 1937.

BIRKENHEAD EDUCATION COMMITTEE.

ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for the position of ASSISTANT SCHOOL MEDICAL OFFICER at a salary of £500 per annum, rising by annual increments of £25 to a maximum of £700. The post is designated under the Local Government and Other Officers' Superannuation Act, 1922, and will carry with it the designation of "Assistant School Medical Officer and Assistant Medical Officer of Health."

In fixing the commencing salary within the Scale regard will be paid to previous recognised service.

The duties will mainly consist of the inspection and treatment of children attending schools in the Borough.

Applicants must be duly qualified Medical Practitioners with experience, and must hold the Diploma of Public Health.

The person appointed will be required to reside within the Borough.

Canvassing, either directly or indirectly, will be regarded as a disqualification

Particulars of the appointment and form of application may be obtained from Dr. D. Morley Mathieson, Medical Officer, 9, Hamilton Square, Birkenhead, and applications must be delivered not later than August 21st to

G. B. DEMPSEY,
Director of Education.

Education Offices, Hamilton Square, Birkenhead.

COUNTY BOROUGH OF SOUTHEND-ON-SEA.

INFECTIOUS DISEASES HOSPITALS

MEDICAL SUPERINTENDENT.

Applications are invited from Medical Men for appointment as MEDICAL SUPERINTENDENT OF THE COUNCIL'S INFECTIOUS DISEASES HOSPITALS

The salary assigned to the office is at the rate of £750 per annum, increasing by annual increments of £25 to £925, and thence by an increment of £12 10s to £937 10s. He will be required to reside in the residence provided (unfurnished) by the Council, and £75 per annum will be deducted from the salary in respect of its rental, rates, etc. The post is designated under the Local Government and Other Officers' Superannuation Act. A motor car allowance of £80 per annum will also be paid, but this is not subject to superannuation deductions.

Forms of application, together with particulars of duties, may be obtained from the Medical Officer of Health, Municipal Health Centre, Warrior Square, Southend-on-Sea, and applications should be received by him not later than first post on Wednesday, August 18th.

H. J. WORWOOD,
Town Clerk.

Town Clerk's Office, Southend-on-Sea.
July 26th, 1937.

THE LIVERPOOL SANATORIUM.

Delamere Forest, Frodsham, via Warrington

175 Beds for the Treatment of Patients Suffering from Pulmonary Tuberculosis)

SENIOR ASSISTANT to the Medical Superintendent Applications are invited from male Medical Practitioners with suitable qualifications for the above-named appointment.

Candidates must be unmarried and preference will be given to applicants who have held resident medical appointments since qualification, and have had practical institutional experience in the treatment of pulmonary tuberculosis.

Salary will be at the rate of £350 per annum, with board, quarters and laundry.

The appointment is normally tenable for twelve months, but may be extended.

Particulars of duties and full information, together with forms of application, can be obtained from the Medical Superintendent.

Forms completed, with copies of three recent testimonials, should be returned as early as possible to the MEDICAL SUPERINTENDENT, the Liverpool Sanatorium, Delamere Forest, Frodsham, via Warrington

CITY OF PLYMOUTH.

City General Hospital (570 Beds).

JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited from duly qualified medical men for the post of Junior Assistant Medical Officer at the City Hospital, Plymouth.

Salary will be at the rate of £250 per annum, with full residential emoluments. All the fees received by the officer must be refunded to the Council The appointment will be for a period of six months in the first instance, and renewable for a further period of six months, and will be terminable by one month's notice on either side.

Form of application may be obtained from the undersigned and should be forwarded, together with copies of not more than three recent testimonials, not later than August 23rd, 1937.

T. PEIRSON,
Medical Officer of Health.

Town Hall, Stonehouse, Plymouth

CITY OF MANCHESTER

ABERGELE SANATORIUM (262 Beds).
BAGULEY SANATORIUM (333 Beds).

The Public Health Committee invites applications from registered medical men for the following posts —

(a) DEPUTY MEDICAL SUPERINTENDENT, Abergele Sanatorium, North Wales.

The salary for this appointment is £500 per annum, together with house, coal and light, valued at £92 per annum.

(b) Second Resident Assistant Medical Officer (unmarried), Baguley Sanatorium, near Altrincham, Cheshire

The salary for this appointment commences at £350 per annum, and rises by annual increments of £25 to a maximum of £450 per annum, with board, residence and laundry in addition.

Each appointment is subject to the Manchester Corporation conditions of service.

Full information and forms of application may be obtained from the Medical Officer of Health, Sunlight House, Quay Street, Manchester, 3, and applications for the posts must be received by him not later than August 28th, 1937.

F. E. WARBRECK HOWELL,
Town Clerk.

Town Hall, Manchester, 2.
August 3rd. 1937

THE RADCLIFFE INFIRMARY, OXFORD.

Applications are invited for the following posts, which will become vacant on October 1st, 1937:—

ONE RESIDENT SURGICAL OFFICER. (For one year. Salary £200 per annum.)

TWO HOUSE PHYSICIANS.

ONE OBSTETRIC HOUSE PHYSICIAN.

ONE HOUSE SURGEON TO EAR, NOSE AND THROAT DEPARTMENT. (Previous experience desired. Recognised for degree of D.L.O.)

FOUR HOUSE SURGEONS.

All Resident Medical Officers will have certain anæsthetic duties to perform.

The FOUR HOUSE SURGEONS will also be responsible for Casualty

Appointments for six months, with salaries at the rate of £120 per annum, with board, etc.

Candidates must be male and qualified.

Applications, with four copies of three testimonials, to be sent to the undersigned on or before August 14th, 1937.

A. G. E. SANCTUARY,
Administrator.

WEST LONDON HOSPITAL, HAMMERSMITH ROAD, W.6. (239 Beds.)

Required first week in September, one RESIDENT ANAESTHETIST (male). The appointment is tenable until March 31st, 1938, subject to one month's notice on either side. Salary at the rate of £100 a year, with board, lodgings and laundry allowance.

Candidates must be registered under the Medical Act. Applications (which must be made on printed forms, obtained from me) must reach me not later than first post on Friday, August 27th. Selected candidates will be required to call upon such members of the Medical Staff as directed; to be in attendance at the Medical Council Meeting on Friday, September 3rd, at 4.30 p.m., and the House Committee Meeting at 5 p.m. the same day, when the appointment will be made.

H. A. MADGE,
Secretary.

ESSEX COUNTY COUNCIL.

JUNIOR RESIDENT MEDICAL OFFICER.

The County Council of the Administrative County of Essex invite applications for the appointment of Junior Resident Medical Officer at the Oldchurch Hospital, Romford. The appointment is for a period of one year, and the salary will be at the rate of £250 per annum, together with the usual indoor emoluments. The successful applicant will be required to pass a medical examination, and will be subject to the Council's Sick Pay Rules and Regulations, a copy of which will be forwarded on application.

Applications on the prescribed form, obtainable from the undersigned, should be addressed to me and delivered at the County Hall, Chelmsford, not later than 10 a.m. on Monday, August 16th, 1937.

E. S. HOLCROFT,
Clerk of the County Council.

County Hall, Chelmsford.
July 31st, 1937.

THE ROYAL EYE HOSPITAL.

St. George's Circus, Southwark, S.E.1.

SENIOR HOUSE SURGEON and two ASSISTANT HOUSE SURGEONS required at the above Hospital. The appointment is, in the first instance, for a period of six months, with board and residence, as from 1st October.

Salaries.—Senior House Surgeon at the rate of £150 per annum.

Assistant House Surgeons at £100 per annum.

Candidates must be registered Practitioners.

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than Wednesday September 1st.

F. E. D'ALTON,
Secretary.

WEST SUSSEX COUNTY MENTAL HOSPITAL, CHICHESTER.

Applications are invited from gentlemen, under the age of 35 years, for the post of THIRD ASSISTANT MEDICAL OFFICER at the above Hospital. Salary £350, rising by annual increments of £25 to £450 per annum, together with board, lodging, etc., valued for superannuation purposes at £150. An additional £50 per annum will be given to the successful candidate if he holds or upon his obtaining a Diploma in Psychological Medicine. The appointment is subject to the provisions of the Asylums Officers' Superannuation Act, 1909. Applications, stating age and experience, together with copies of not more than three recent testimonials, to be sent on or before August 20th to the Medical Superintendent.

CENTRAL LONDON OPHTHALMIC HOSPITAL,

Judd Street, St. Pancras, W.C.1.

Applications are invited from registered medical practitioners for the posts of SENIOR and JUNIOR HOUSE SURGEON, vacant on September 30th. The Junior House Surgeon is a candidate for the Senior post. Salary £120 and £100 per annum respectively, with board and residence.

Applications, with copies of three testimonials, should reach the Secretary on or before August 31st.

CENTRAL LONDON OPHTHALMIC HOSPITAL,

Judd Street, St. Pancras, W.C.1.

Applications are invited for the post of ASSISTANT SURGEON. Candidates must be Fellows of the Royal College of Surgeons (England) or hold the degree of M.S. (London) in Ophthalmology, and must have held a post as Clinical Assistant for two years at least at a recognized Ophthalmic Hospital.

Applications, with copies of not more than four testimonials must reach the Secretary of the Hospital not later than August 31st.

CENTRAL LONDON OPHTHALMIC HOSPITAL,

Judd Street St. Pancras, W.C.1.

There is a vacancy for a PATHOLOGIST. Candidates must be duly registered medical practitioners and must be willing to attend the hospital on three afternoons each week. The appointment is for one year (subject to re-election) and carries with it an Honorarium of £105 per annum.

Applications, with copies of not more than four testimonials must reach the Secretary of the Hospital not later than August 31st.

THE WEIR HOSPITAL, GROVE ROAD, BALHAM, S.W.12. (30 Beds.)

SENIOR RESIDENT MEDICAL OFFICER (male, unmarried) required, also a JUNIOR, as soon as possible. Salary for Senior is £250 per annum and Junior £150 per annum, with board, residence and laundry. Candidates must be fully qualified and duly registered.

Applications, with copies of testimonials, to be sent to the Secretary, from whom further information may be obtained.

LONGTON HOSPITAL, STOKE-ON-TRENT. (50 Beds.)

HOUSE SURGEON (male) required. Salary £180, rising to £200 after six months, with board, residence and laundry, plus certain fees. Applications, with copies of recent testimonials, and stating nationality, to be sent immediately to the Chairman of Directors, Longton Hospital, Stoke-on-Trent.

CITY OF LONDON MATERNITY HOSPITAL, CITY ROAD, E.C.1.

Applications are invited for the post of REGISTRAR, tenable for three years, honorarium £25 p.a.

Forms of application, procurable from the Secretary, should be sent in completed by August 21st.

THE ITALIAN HOSPITAL, QUEEN SQUARE, W.C.1.

Applications are invited for the post of second HONORARY ASSISTANT ANAESTHETIST. Candidates must have their names on the Register of the General Medical Council.

Applications should reach the Secretary by August 15th.

HILL END HOSPITAL AND CLINIC,

(County Mental Hospital.)
St. Albans, Herts.

LOCUM TENENS MEDICAL OFFICER (male) required at end of August, 7 gns. per week, furnished quarters and board. Application, with copies of testimonials, to Medical Superintendent.

PRESTON AND COUNTY OF LANCASTER ROYAL INFIRMARY.

The Board of Management invite applications for the post of RESIDENT SURGICAL OFFICER; twelve months' appointment. The duties of the post, which should commence on October 1st, 1937, include care of the patients of the Senior Surgeon. Candidates must be Fellows of a Royal College of Surgeons.

Salary at the rate of £300 per annum, with board, residence and laundry.

Applications, stating age, qualifications and experience, accompanied by testimonials, to be forwarded to the undersigned by August 26th.

Royal Infirmary, Preston. JOHN GIBSON, Superintendent and Secretary.

July 31st, 1937.

CUMBERLAND INFIRMARY, CARLISLE. (160 Beds.)

Resident Medical Staff—Five Qualified Officers

Required on October 1st, 1937, two MALE HOUSE SURGEONS. Six months' appointments previous experience desirable. Salary in each case at the rate of £160 per annum, board, residence, etc. Both posts are recognised by the Royal College of Surgeons of England under the Regulations for the Final Fellowship Examination.

Applications, stating age, nationality, qualifications, etc., with copies of not more than four testimonials, must be received by first post on Friday, August 20th, by the undersigned, who will supply further particulars if desired.

J. G. HOWITT, Secretary.

July 31st, 1937.

WEST NORFOLK AND KING'S LYNN GENERAL HOSPITAL.

RESIDENT SURGICAL OFFICER.

Applications are invited for the above post, which will become vacant on August 28th, 1937. Salary £300 per annum.

The duties include much operative work, and preference will be given to a candidate holding the F.R.C.S.Eng. degree.

Applications, with copies of recent testimonials, should be sent to the undersigned as early as possible, and in any case not later than August 12th.

JOSEPH E. SEARJEANT, F.C.C.S., House Governor and Secretary.

CHILDREN'S HOSPITAL, NOTTINGHAM.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN (woman). The salary will be at the rate of £150 per annum, with apartments, board, and laundry. The appointment will be for six months, duties to commence on October 1st, 1937.

Applications, together with testimonials and stating age, qualifications, and experience, to be sent to F. Pragnell, the Honorary Secretary, 1, King John's Chambers, Bridlesmith Gate, Nottingham, by August 19th. Selected candidates will be required to attend at the hospital for a personal interview on August 31st, when the appointment will be made.

ROYAL ISLE OF WIGHT COUNTY HOSPITAL, RYDE.

A vacancy having occurred in the office of HONORARY SURGEON to the EAR, NOSE AND THROAT DEPARTMENT the Election Committee of the Governors will proceed to fill the appointment. Candidates must not be engaged in General Practice.

Further details may be obtained from the Secretary, to whom applications must be addressed, and should be received not later than August 14th, 1937.

Canvassing members of the Election Committee will be a disqualification.

A. S. GORDON, Secretary.

ROYAL ISLE OF WIGHT COUNTY HOSPITAL, RYDE.

The Committee invite applications for the post of HONORARY PATHOLOGIST, who must be a registered medical practitioner. State qualifications and experience to the Secretary before August 14th, 1937.

There is a Pathological Assistant in this Department.

A. S. GORDON, Secretary.

DERBYSHIRE HOSPITAL FOR WOMEN, Friar Gate, Derby (58 Beds.)

Applications are invited for the post of RESIDENT HOUSE SURGEON. Salary £150 per annum, with apartments, board, etc. The appointment is tenable for six months with a possibility of extension for a further period of six months.

Applications, with copies of not more than three testimonials, to be sent to the undersigned not later than August 27th, 1937.

Duties to commence September 1st, 1937.

W. T. COCKER, Secretary.

WIMBLEDON HOSPITAL, THURSTAN RD. S.W.20. (General Hospital. 74 Beds.)

RESIDENT MEDICAL OFFICER (male, of British nationality) required for a period of six months, in the first place, from September 1st 1937, eligible for re-election. Salary at the rate of £150 per annum, with board, residence and laundry.

Candidates must possess registered qualifications. Applications, stating qualifications and experience, together with copies of testimonials, should be sent to the undersigned

MRS. ASHLEY EDWARDS, Hon. Secretary.

EAST HAM MEMORIAL HOSPITAL Shrewsbury Road, E.7 (100 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN (male). The appointment is for six months, commencing September 1st. Salary at the rate of £150 per annum, with board, residence and laundry.

Applications, stating age, nationality, experience and full particulars, together with copies of three testimonials, should reach the undersigned by August 19th.

REGINALD PERRY, Secretary.

VICTORIA HOSPITAL FOR SICK CHILDREN PARK STREET, HULL.

The Board of Management of the above Hospital requires a RESIDENT HOUSE PHYSICIAN (lady), also JUNIOR HOUSE SURGEON (lady). Salaries £120, with board, residence and laundry.

Applications, with copies of recent testimonials, stating age and qualifications and when at liberty, to be sent to the Secretary not later than August 18th.

July 30th, 1937.

SUTTON AND CHEAM HOSPITAL, SUTTON, SURREY. (75 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male). Salary £160 per annum, with residence, board and laundry. The appointment will be for six months from October 1st next.

Applications, giving full particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the Secretary not later than August 23rd.

HUDDERSFIELD ROYAL INFIRMARY (321 Beds.)

Male HOUSE PHYSICIAN required to commence duty on August 18th, 1937.

Salary £150 per annum, with board, residence, and laundry. Appointment for six months, subject to renewal at the discretion of the Board of Management.

Applications, with copies of three recent testimonials, to be addressed to the undersigned.

H. J. JOHNSON, Gen. Supt. and Secretary.

CRICHTON ROYAL, DUMFRIES.

HOUSE PHYSICIAN required for the above Mental Hospital. Salary £200 per annum. Yearly appointment. Excellent opportunities for postgraduate work. The Hospital provides facilities for treatment in all its aspects, and is equipped with up-to-date laboratories.

Applications, together with copies of three recent testimonials, to be forwarded to the Physician Superintendent, Crichton Royal, Dumfries, to reach him not later than Thursday, August 26th.

DONCASTER ROYAL INFIRMARY. (155 Beds.)

CASUALTY HOUSE SURGEON (male) required immediately. Salary at the rate of £175 per annum, with residence, board and laundry. The appointment is for six months.

Applications, accompanied by copies of not more than three recent testimonials, to be sent to the undersigned.

R. LANCASTER, Secretary-Superintendent.

ROYAL EYE & EAR HOSPITAL, BRADFORD (94 Beds.)

HOUSE SURGEON (lady) required. Salary £150, with board, residence and laundry.

Applications, stating qualifications, age, etc., with copies of recent testimonials, should be sent to the undersigned.

F. BRIGGS, Secretary-Superintendent.

PENDYFFRYN HALL SANATORIUM, PENMAENMAWR.

Wanted, ASSISTANT PHYSICIAN (male, unmarried), to commence duty in October. Salary at the rate of £250, with board, residence and laundry. Experience in pneumothorax work, etc., essential.

Apply to MEDICAL SUPERINTENDENT, stating age and experience, and enclosing testimonials.

KING EDWARD MEMORIAL HOSPITAL, EALING. (131 Beds.)

Applications are invited for the posts of:

HOUSE SURGEON (male) to act in the Eye, Gynæcological and Ear, Nose and Throat Departments. Six months' appointment, with possibility of re-election for a further period. Salary £150 per annum, with usual residential emoluments.

CASUALTY HOUSE SURGEON (male) (with which is combined the duty of dispensing for the House Physician). Six months' appointment, with possibility of re-election for a further period. Salary £150 per annum, with usual residential emoluments.

Applications, stating age, experience and qualifications, and accompanied by copies of two recent testimonials, to be sent to the undersigned immediately

R. A. MICKELWRIGHT, House Governor.

MILLER GENERAL HOSPITAL, GREENWICH ROAD, S.E.10

Applications are invited for the following posts:

HOUSE PHYSICIAN (male), unmarried, salary £160 per annum.

HOUSE SURGEON (male), unmarried, salary £160 per annum.

CASUALTY OFFICER (male), part time, afternoons and evenings. Salary £150 per annum, non-resident.

Further particulars on application. The appointments are for six months from Oct. 1st, 1937. There are six Resident Officers.

Application forms can be obtained from the Secretary, and must be returned not later than August 23rd, 1937.

July 30th, 1937.

MILLER GENERAL HOSPITAL, GREENWICH ROAD, S.E.10.

ANAESTHETIST

Applications are invited for the post of Anæsthetist from those who are specially engaged in the practice of anæsthetics. Honorarium at the rate of 52 guineas per annum for one attendance a week. For any further attendance a fee of one guinea will be paid. Fuller particulars on application to the Secretary.

Applications, together with copies of not more than three recent testimonials, to be sent on or before August 13th, 1937.

July 30th, 1937.

ST. BARTHOLOMEW'S HOSPITAL.

APPOINTMENT OF DENTAL HOUSE SURGEON.

Applications are invited for the office of House Surgeon to the Dental Department. Candidates must hold a registrable Dental qualification and a Medical qualification in addition a degree is not essential.

Candidates will be required to call upon the three Dental Surgeons.

Appointment will be made for six or twelve months as from November 1st, 1937.

The salary attaching to the office is £50 per annum (non-resident).

Six copies of applications, with testimonials, must be left with the undersigned on or before Monday, September 20th, 1937.

(Sgd.) THOMAS HAYES, Clerk to the Governors.

July 22nd, 1937.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, MARYLEBONE ROAD, N.W.1.

APPOINTMENT OF REGISTRAR.

The Committee of Management invite applications for the appointment of Registrar.

The duties will include the compilation of the Annual Medical Report, the superintendence of the notes and monthly reports, and elementary teaching of Students. An honorarium of twenty guineas per annum will be paid.

Applications should be sent to the undersigned not later than September 1st.

H. B. STOKES, Secretary-Supt.

ST. JOHN'S HOSPITAL, LEWISHAM, S.E.13

Applications are invited for the post of MEDICAL REGISTRAR (male) to attend the Out-patient Department on two half-days a week, namely Monday afternoons and Thursday mornings. Honorarium of 52 guineas will be paid.

Applications with copies of testimonials, should be received by the undersigned, who will be pleased to give further information.

J. C. GILBERT, Secretary-Superintendent.

WOKING AND DISTRICT VICTORIA HOSPITAL (50 Beds.)

Required, male RESIDENT MEDICAL OFFICER (unmarried) for August 23rd, or as soon as possible thereafter. British born. Salary £150 per annum, with board, residence and laundry. Appointment for minimum period six months.

CITY MENTAL HOSPITAL, HUMBERSTONE, LEICESTER.

THIRD ASSISTANT RESIDENT MEDICAL OFFICER (male, single) under 30. Candidates must have had residential General Hospital experience. Salary £350, rising by £50 per annum to £450 per annum, together with board, lodging, washing and attendance, valued for purposes of superannuation at £150 per annum. An additional £50 per annum will be paid for possession of a D.P.M.

The appointment is subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

There is a good laboratory and two active Psychiatric Clinics, one attached to the Leicester Royal Infirmary.

Applications, giving particulars of experience, etc., together with names of three references—one of which should be non-professional, and marked "A.M.O." to be sent to the Medical Superintendent.

CITY MENTAL HOSPITAL, HUMBERSTONE, LEICESTER.

DEPUTY MEDICAL SUPERINTENDENT (MALE), under thirty-five.

Applications for the above post are invited. Salary £800 per annum, rising by £25 per annum to £850, together with an unfurnished house, valued for superannuation purposes at £50 per annum.

Candidates must have held resident house appointment in a teaching hospital for at least six months, and be in possession of a Diploma in Psychological Medicine.

The officer appointed will be required to assist at the Out-patient Clinics and to be responsible for the Pathological work.

The appointment is subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

Applications, marked "D.M.S.," with full particulars of Professional career, together with three references, one of which should be non-professional, to be sent to the Medical Superintendent.

ROYAL MANCHESTER CHILDREN'S HOSPITAL, PENDLEBURY.

Applications are invited for the Post of Non-resident ASSISTANT MEDICAL OFFICER at the OUT-PATIENTS DEPARTMENT, Gartside Street, Manchester. Salary, at the rate of £150 per annum, and the appointment is for a period of six months as from October 1st, 1937. Candidates must be on the Medical Register.

Particulars of duties can be obtained from the Secretary. The hours of duty are from 9 a.m. till 1 p.m., or until the work of the Dispensary is finished. Patients' attendances number about 100,000 per annum.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Thursday, September 2nd, 1937.

Canvassing, directly or indirectly, may disqualify.

By Order,
H. HEARDMAN,
Secretary.

ROYAL MANCHESTER CHILDREN'S HOSPITAL
PENDLEBURY, NEAR MANCHESTER.
(232 Beds.)
RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer. Salary £150 per annum. The appointment is for a period of six months, commencing as soon as possible. Candidates must be unmarried and duly registered. Previous hospital experience essential.

Applications, stating age and accompanied by copies of not more than three recent testimonials, to be sent to the undersigned immediately. Canvassing, directly or indirectly, may disqualify.

By Order
H. HEARDMAN,
Secretary.

HERTFORD COUNTY HOSPITAL.
(169 Beds 3 Residents.)

Applications are invited for the post of HOUSE PHYSICIAN (male).

Salary £150 per annum, with board, residence, and laundry. Duties to include Casualty. The appointment is for six months in the first instance.

Applications, together with copies of three recent testimonials, should be forwarded to the undersigned.

PERCY G. BROOKS,
Secretary.

THE ROYAL LIVERPOOL CHILDREN'S HOSPITAL, Myrtle Street, Liverpool, 7.

The Committee invite applications for the post of MEDICAL REGISTRAR for twelve months from October 1st, 1937, and for the post of Surgical Registrar for six months from January 1st, 1938. Salary in both cases at the rate of £150 per annum. Further particulars may be obtained from the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, to whom applications should be sent, with copies of recent testimonials, on or before Monday, August 16th, 1937.

THE PRINCE OF WALES'S HOSPITAL, PLYMOUTH.
Incorporating South Devon and East Cornwall Hospital, Greenbank Road; Royal Albert Hospital, Devonport; Central Hospital, Lockyer Street.

Applicants are invited for the following posts on the Honorary Medical and Surgical Staff:

(1) HONORARY AURAL SURGEON. Candidates must be masters of surgery of the United Kingdom, or Fellows of the Royal College of Surgeons of England, or must hold the special diploma in Oto-rhino-laryngology.

(2) HONORARY MEDICAL REGISTRAR. Candidates must be members of the Royal College of Physicians of London or Edinburgh, or M.D. of a University in the United Kingdom.

Applicants must send twelve copies of their application and testimonials to the undersigned by August 21, 1937. Canvassing disqualifies.

Greenbank Road, Plymouth. July 31st, 1937.
ARTHUR R. CASH,
Gen. Supt. and Secretary.

THE PRINCE OF WALES'S HOSPITAL, GREENBANK ROAD, PLYMOUTH.
(Formerly South Devon and East Cornwall Hospital.) (264 Beds.)

Applications are invited for the two vacant posts of HOUSE SURGEON and RESIDENT ANAESTHETIST AND HOUSE SURGEON TO SPECIAL DEPARTMENTS. Salary £120 per annum, with board, residence and laundry.

Appointments are tenable for six months, and are subject to renewal. Duties to commence immediately.

The Hospital is officially recognised for the surgical practice required before admission to the Final Fellowship Examinations of the Royal College of Surgeons of England.

Applicants must be registered under the Medical Acts. Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned forthwith.

ARTHUR R. CASH,
Gen. Supt. and Secretary.

COVENTRY AND WARWICKSHIRE HOSPITAL.

There being a vacancy on the staff for an HONORARY ANAESTHETIST, applications are invited for the post.

Candidates must be duly qualified Practitioners.

The appointment will be made for one year, subject to reappointment annually.

Candidates shall be resident in the City of Coventry, or within six miles radius thereof, or shall take up their residence within that radius within six months from the date of appointment.

Canvassing, either directly or indirectly, will be deemed a disqualification.

Applications, with original testimonials and registration certificates, must reach the undersigned on or before August 14th.

Candidates will in due course receive notice of their eligibility or otherwise from the Secretary, and after receipt of such notice eligible candidates are at liberty to send through the post printed copies of their application and testimonials, to the Members of the Board of Management of the Hospital, a list of whose names and addresses will be furnished by the Secretary. No such applications or copies of testimonials shall be sent until receipt of such notification from the Secretary.

By Order of the Committee,
(Miss) R. HOOPER,
Secretary.

THE YORKSHIRE CHILDREN'S ORTHOPAEDIC HOSPITAL,
KIRBYMOORSIDE, YORK. (124 Beds.)

Applications are invited for the position of HOUSE SURGEON (female). Salary £200 per annum, with board, residence and laundry. Previous orthopaedic experience is not necessary, but preference will be given to candidates who have held resident hospital appointments, and who are competent anaesthetists.

The appointment is for one year, and renewable, and may be terminated by three months' notice.

Applications, with copies of not more than three recent testimonials, should be forwarded to me at the above address, to arrive not later than first post on Friday, August 20th, 1937.

P. HANKS,
Secretary.

THE BUCHANAN HOSPITAL, ST. LEONARDS-ON-SEA. (103 Beds.)

APPOINTMENT OF HON. NEUROLOGIST.

Applications are invited from fully qualified Medical Practitioners for the post of Hon. Neurologist to the above Hospital.

The successful candidate will be required to inaugurate and conduct a clinic in the Out-Patients' Department on an approved day, and include in this clinic the treatment of Psychological cases.

Any candidate canvassing any members of the Elective Committee shall be disqualified.

Applications, together with at least three testimonials, should be sent to the undersigned

FRANK HART,
Secretary.

LIVERPOOL MATERNITY HOSPITAL, OXFORD STREET.

HOUSE SURGEON required for the six months commencing October 1st next, salary at the rate of £90 per annum, with board, residence and laundry. Previous experience as House Surgeon essential. Membership of a Medical Defence Society is a condition of appointment.

Applications, stating age, qualifications and experience, together with copies of testimonials, to be sent to the Honorary Secretary of the Medical Board on or before August 27th.

THE STAFFORDSHIRE GENERAL INFIRMARY, STAFFORD (100 Beds).

HOUSE PHYSICIAN AND CASUALTY OFFICER required on September 1st, also HOUSE SURGEON on September 21st. Salary £150 and £200 per annum respectively. Previous experience is desirable. There are two Resident Medical Officers and a well-equipped Clinical Laboratory.

Applications, stating age, with particulars of experience, and accompanied by copies of three recent testimonials, should be sent to me forthwith.

Stafford, July 30th, 1937.
A. E. COLLINS,
Secretary.

GREAT YARMOUTH GENERAL HOSPITAL.
(72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two appointments). Duties to commence August 23rd.

Applicant must be male and unmarried. Salary at the rate of £140 per annum, with board, residence and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FREDK. L. GATFIELD,
Secretary

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN
(Usually known as the Children's Hospital),
ST. MICHAEL'S HILL, BRISTOL.

Applications are invited for the position of HOUSE SURGEON, to take duty from September 1st. Salary £125 per annum, with board, rooms, attendance and laundry.

Applicants should state age, qualifications, experience, and send testimonials, to the undersigned on or before August 14th.

REGINALD C. THOMAS, F.C.I.S.,
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23 NORFOLK.—PARTNERSHIP in steadily increasing Practice, about £2,300, in delightfully situated country town. Panel about 1,850. Good society and sport. One-third share at first at two years' purchase.

24 S. MIDLANDS.—PARTNERSHIP (short preliminary Assistantship) in Practice, over £5,000 p.a., in first-rate town. Panel nearly 5,000. House with 4 bedrooms, garage and garden, to rent. One-fifth share at first at two years' purchase.

25 LONDON, N.5.—Middle-class PRACTICE averaging £866 p.a., including appointment worth £135 and a panel of 676. Nice corner house (5-6 bedrooms), garden and garage, to rent. Premium £1,250.

British Medical Bureau

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(Founded 1880)

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Practices and Partnerships for Disposal (continued).

26 LONDON, S.E.—Old-established and increasing PRACTICE of £2,500 p.a. in suburban district. Panel 2,000. Detached double-fronted house (5 bedrooms, etc.), garage and garden. Freehold for sale. Premium two years' purchase.

27 HOME COUNTIES.—Old-established PRACTICE of over £1,000 p.a. in beautiful country district on Bucks and Northants borders. Panel 536. Attractive house (6 bedrooms, etc.), Freehold for sale, or rent. Premium two years' purchase.

28 S. MIDLANDS.—PARTNERSHIP in steadily increasing Practice, averaging £2,500 p.a., in good town. Panel 1,200/1,900. Good house (3 bedrooms) to rent. Incoming partner should be aged about 35 and experienced in gynaecology and preferably hold F.R.C.S. or M.C.O.G. Premium for one-third share, two years' purchase.

29 S. OF ENGLAND.—PRACTICE of about £300 p.a. carried on by a medical woman in a cathedral town. Panel 100. House (2 bedrooms, etc.), to rent. Premium £500.

30 AUSTRALIA.—Old-established PRACTICE of £1,400 p.a., in agricultural township. Good house (3 bedrooms, etc.), for sale. Premium £1,000 and £250 for X-ray plant.

31 S.W. OF ENGLAND.—PARTNERSHIP in old-established Practice, averaging over £3,750 p.a., in attractive country town. Panel 2,300. Visits 3/6 to £1 10s. Choice of two houses (one for sale, the other to rent). Hospital and prospect of appointment. Premium one-third or two-fifths share at two years' purchase.

32 MIDLANDS.—Old-established PRACTICE in beautiful country district. Cash Receipts last year £1,280, including appointments worth about £60, and a panel between 650 and 700. Visits 2/6 to £1 1s. without medicine. Nicely situated house (4 bedrooms, dressing-room, etc.), with nice garden and two garages. Rent about £80 p.a. Premium two years' purchase.

33 N. WALES BORDER.—PARTNERSHIP (with early succession) in old-established County Practice, about £2,500 p.a., in important town. No panel. Surgery premises could be purchased or rented. The private residence is available if required. A share up to one-half would be sold at first with early succession. Premium two years' purchase.

34 DEATH VACANCY.—ESSEX SUBURB.—Receipts average nearly £350 p.a. Panel 423. Semi-detached house (4 bedrooms). Price £800 freehold. Reasonable offer accepted.

35 LONDON, S.W.1.—SPECIAL PRACTICE for catarrhal conditions, nasal catarrh, hay fever, asthma, etc., etc., about £1,600 p.a., in commanding position in Grosvenor Place. Consultations 1-3 guineas. Special terms for series of treatments. Excellent accommodation to rent at £166 p.a. on lease. Scope. Premium one and a-half years' purchase.

36 SEASIDE TOWN WITHIN AN HOUR OF LONDON.—Very old-established PRACTICE. Receipts average £625 p.a. Panel about 300. Well-furnished house (5 bedrooms), with garage and garden, for sale or rent. Good scope. Premium £1,000.

37 RESIDENTIAL DISTRICT WITHIN 15 MILES OF LONDON.—Old-established PRACTICE. Receipts last year over £2,000. Panel about 1,000. Well-appointed house residence (4 bedrooms, dressing-room, etc.), good garage and garden, for sale or rent.

38 LONDON (Western District).—PARTNERSHIP in Practice averaging about £1,700 p.a., rising to £2,000. House containing 5 bedrooms, etc., large garage and garden. One-third share at first. Premium two years' purchase. Preliminary Appointment if desired.

39 MIDLANDS.—Old-established mixed PRACTICE in first-rate residential town. Cash receipts average £1,640 p.a. Panel 560. House contains 6 rooms, etc., garage and small garden. Price £2,400 freehold. Scope. Hospital. Premium £2,000.

40 E. MIDLANDS.—Old-established country PRACTICE, averaging nearly £650 p.a., in pleasant village. Appointments worth over £100 and panel 500. Charming stone-built house (6 bedrooms), with central heating, main electric light and power and water supply. Large garage, garden about 1½ acres. Price freehold £1,700. Scope. Premium two years' purchase.

41 KENT.—Old-established and steadily increasing PRACTICE (in hand of Medical Woman) in rapidly developing district. Receipts last year £650. No panel. Visits mostly 5/-, medicine extra. Scope to double these receipts. Excellent scope. Premium £100.

42 N.E. COAST.—PARTNERSHIP (after preliminary Assistantship) in mixed Practice about £2,000 p.a. in seaport town. Panel 2,000. A share up to one-half obtained. One-third share at first to suitable man, two years' purchase for next offer, with option to increase to two-fifths in three years and to four-fifths later.

43 S. OF ENGLAND.—Old-established PRACTICE in agricultural district about two miles from the sea. Cash receipts, 1936, £995, including panel of 450. Fees 2/6 to £1 1s. Medicine extra. Good house (5 bedrooms, 2 bed-rooms, etc.), in half acre of ground with garage. Central heating. Electric light. Price freehold £1,000. Scope for increase. Premium £1,500.

44 LONDON, S.W.—Well-established PRACTICE (held by Medical Woman) in outlying residential district. Cash receipts average £960 p.a. No panel but scope if desired. Purchaser could have use of surgery premises and living accommodation with services by arrangement. Premium one and three-quarter years' purchase.

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A. N. OF SCOTLAND.—Country PRACTICE, old-established, in beautiful district. Receipts last year, £450. Panel 390. Excellent house to rent.

B. CENTRAL SCOTLAND.—Old-established. Receipts last year, £700. Scope for increase. Panel 446. Substantial house for sale. Premium one and a half years' purchase.

C. EDINBURGH.—Receipts £800. Panel 1,600. Suitable house for sale. Premium—Practice and house, £2,500.

D. ABROAD.—SIAM ASSISTANTSHIP with view to Partnership Agreement for two years. Salary, passage both ways. At end of two years if suitable, opportunity given of purchasing share in Practice.

E. LONDON, N.—CONSULTING ROOMS with SMALL NUCLEUS of furniture (dance music) to be rented, part of the house. Excellent opportunity for Doctor to build up practice. Moderate rent.

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BRITISH MEDICAL BUREAU

(The Scholastic, Clerical and Medical Association Ltd.)

(*FOUNDED* 1880)

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MANCHESTER.—PARTNERSHIP in sound old-established mixed Panel and Private Practice. Average cash receipts £5,500 p.a. Panel over 4,500 and appointments £760 p.a. Good house available to rent. Premium—5/9th or 3/9th share—2 years' purchase (to include share of book debts, drugs, etc.).—No. 1001.

CUMBERLAND.—Old-established and practically unopposed Seaside and Country PRACTICE in delightful district. Cash receipts last year £868. Panel 225 and transferable appointments £255 p.a. Excellent detached house, 3 reception, 8 bedrooms, electric light and gas, garage and garden. For sale, freehold. Premium—Practice—1½ years' purchase.—No. 998.

DEATH VACANCY.—LANCS TOWN.—Old-established mixed Panel and Private PRACTICE in late incumbent's hands 31 years. Cash receipts last year £1,529. Panel 1,650. Scope. Good house and surgery premises, 2 reception, 5 bedrooms, 3 Professional rooms. For sale, or may be rented on lease. Premium—Practice—best offer.—No. 1,000.

CHESHIRE/DERBYSHIRE BORDER.—Old-established PRACTICE in Country district. Cash receipts last year £700 (increasing). Panel 862. Great scope. Excellent house, 2 reception, 4 bedrooms, 3 Professional rooms (separate entrance), garage and good garden. Premium—£1,000.—No. 989.

DEATH VACANCY.—SHEFFIELD.—Very old-established mixed-class PRACTICE in late incumbent's hands 20 years. Cash receipts last year £1,664. Panel 1,200. Scope. Good house, 2 reception, 6 bedrooms, 3 Professional rooms, garage. To rent. Premium—best offer.—No. 999.

NORTH WALES. — PARTNERSHIP (after short Assistantship) in old-established middle-class Practice in pleasant Coast town. Knowledge of Welsh desirable. Cash receipts last year £6,717. Panel 2,600. Well-equipped Hospital. Incoming partner would be required to live in flat. Premium—1/5th share—1½ years' purchase. —No. 988.

LANCS TOWN.—PARTNERSHIP in sound practically unopposed mixed Panel and Private Practice near large town. Cash receipts last year £2,756. Panel 3,550. Good house, 2 reception, 3 bedrooms, garage. Price £800 Premium—one-half-share—best offer—No. 995.

YORKSHIRE (W.R.).—PARTNERSHIP SHARE worth £1,700 p.a. with Panel of 1,169 and appointments £80 p.a. in practically unopposed Country PRACTICE. Nice detached house, 2 reception, 4 bedrooms, garage, ¾-acre garden and tennis lawn. Electricity, etc. Premium—2 years' purchase. Reason for sale—ill-health of Vendor.—No. 985.

MANCHESTER.—Middle and better-class PRACTICE: in present hands 40 years. Cash receipts last year £2,151. Panel over 600. Good house, 3 reception, 6/7 bedrooms, garage and garden. Premium—Practice and house —£3,000. Long introduction if desired. Vendor retiring.—No. 858.

MIDLANDS.—Old-established mixed Panel and Private (non-dispensing) PRACTICE in large town. Cash receipts approximately £1,900 p.a. Panel 1,950. Good ten-roomed house, nice garden with tennis court and garage. For sale, or may be rented on lease. Premium—2 years' purchase.—No 983.

MONMOUTHSHIRE. — Old-established Panel Contract, and Private PRACTICE in prosperous district. Cash receipts last year £1,400. Panel 1,200, plus Contract work, yields £1,230 p.a. Good house, 2 reception, 5 bedrooms, Professional rooms (separate entrance) and garage.—*Rent £40 p.a. Expenses* low.—Premium—£2,000.—No. 970.

LANCS TOWN.—Old-established mixed-class PRACTICE in large town about 6 miles from Manchester. Cash receipts £1,800 p.a. Panel 1,500. Scope. Good house, 3 reception, 6 bedrooms, 3 Professional rooms, garage. Rent £72 p.a. Premium—1½ years' purchase.—No. 996.

YORKS (N.R.). — Old-established unopposed Country PRACTICE in beautiful district near to large town. Cash receipts approximately £1,200 p.a. (including £455 p.a. from Panel). Good house, 2 reception, 5 bedrooms, large garden, garage, water, gas and electricity. Rent £70 p.a., on lease. Premium—2 years' purchase or near offer, to include drugs and fittings. —No. 973.

NORTH MIDLANDS.—Old-established mixed-class PRACTICE, near beautiful country and within easy reach of large town. Average cash receipts £1,100 p.a. Panel 970 and transferable appointments £200 p.a. Scope. Nice detached house, 3 reception, 6/7 bedrooms, garage and large garden. Freehold. Premium—1½ years' purchase.—No. 991.

NEAR MANCHESTER.—Sound middle and working-class PRACTICE. Average cash receipts £2,692 p.a. Panel over 2,500. Scope. Detached corner house, 2 reception, 4 bedrooms, 3 Professional rooms, garage and garden. Premium—1½ years' purchase.—No. 952.

YORKSHIRE (W.R.).—PARTNERSHIP in old-established mixed-class Practice in important city. Average cash receipts £5,429 p.a. Panel 3,200. Scope. Convenient house available for incoming partner. Rent £50 p.a. Premium—1/4th or 1/5th share—2 years' purchase.—No. 997.

MANCHESTER.—Well-established middle and better working-class PRACTICE in residential district. Cash receipts last year £1,122. Panel 740. Nice detached corner house, 3 reception, 5 bedrooms, billiard room, garage and garden with tennis court. Premium—best offer.—No. 968.

DERBYSHIRE.—Old-established PRACTICE in pleasant district near large town, offering great scope for increase owing to building developments. Suitable for two men in partnership. Cash receipts last year £3,436. Panel 3,394. Two good houses, with ample accommodation and modern conveniences, each with garage, garden and tennis court. Premium—2 years' purchase.—No. 955.

LANCS TOWN.—Mixed panel and private PRACTICE, in present hands 30 years. Cash receipts approximately £1,500 p.a. Panel 1,500. Great scope. Good house, 2 reception, 4 bedrooms, garage and small garden. Rent £50 p.a. Premium, best offer.—No. 945.

NEAR MANCHESTER.—Very old-established mixed-class PRACTICE capable of much increase owing to building developments. Cash receipts last year £1,006. Panel 470. Nice detached house, 2 reception, 5 bedrooms, garage and large garden. Separate entrance to surgery. Price £650. Premium—Practice—1 year's purchase. Vendor retiring.—No. 875.

— WANTED —

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NEAR NEWCASTLE-ON-TYNE.—Colliery PRACTICE. Cash receipts last year £952. Panel 800. Scope. Good house to rent. Premium—1½ years' purchase.—No. 978.

NORTH WALES COAST.—Middle-class PRACTICE. Receipts £1,417 p.a. Panel 415. Excellent house with ample accommodation, garage and garden. Premium—£2,100.—No. 929.

MANCHESTER.—Very old-established mixed Panel and Private PRACTICE. Cash receipts last year £2,100. Panel 2,800. Scope. Good house, 2 reception, 4 bedrooms, 3 Professional rooms, garage. Rent £75 p.a. Premium—2 years' purchase, or near offer.—No. 990.

SUFFOLK.—Old-established Country PRACTICE, practically unopposed. Cash receipts last year £1,081. Panel 835 (yields £582 p.a.). Scope. Good house, 2 reception, 3 bedrooms, garage and nice garden. Rent £40 p.a. Premium —best offer.—No. 993.

LANCS TOWN.—*Old-established* Panel and Private PRACTICE in large town. Average cash receipts £1,360 p.a. Panel 900. Scope. Good house, 2 reception, 4 bedrooms, garage. Rent £60 p.a. Expenses low. Premium —1½ years' purchase.—No. 987.

SHEFFIELD.—Established PRACTICE. Cash receipts £1,112. Panel 600. House to rent at £52 p.a. Premium—1½ years' purchase.—No. 940.

NORTH WALES.—Old-established PRACTICE near Sea and Country, capable of great increase. Cash receipts last year, £1,026. Panel 800. Nice surgery premises. Premium, best offer.—No. 905.

MANCHESTER.—PRACTICE in Industrial district. Cash receipts £880. Panel 904. House to rent. Premium—any reasonable offer.—No. 855.

SOUTH AFRICA.—Established PRACTICE in Transvaal. Cash receipts last year £746. Premium—£650.—No. 986.

LANCS TOWN. — *Mixed-class* PRACTICE. Cash receipts £1,054. Panel 1,050. Good house. Premium—1½ years' purchase.—No. 951.

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1. BUCKS.—Old-established PRACTICE. Gross cash receipts stated to be over £2,000 p.a. Panel of about 1,550 patients. Fees 3,- to 5/-, with visits from 3/6 to 10/6. The Practice is at present run by two partners, and there is stated to be good scope for two friends working together.
2. YORKS.—LARGE TOWN.—Well-established better working-class PRACTICE. Receipts for last 12 months about £1,176 with Panel of 1,150 patients approximately. Fees, minimum 2/6 with visits from 3/6 to 7/6. Freehold house for disposal at £900 containing 3 bedrooms, 2 living rooms, surgery, waiting room, etc. Vendor wishes to specialise.
3. SURREY.—PLEASANT TOWN.—PRACTICE produced for past 12 months about £1,250 with a Panel of 800 patients. Fees 3/6 upwards, with visits from 5/- upwards. Midwifery 3 to 10 gns., about 15 cases per annum. Vendor has to give up owing to ill-health. Premium £2,000.
4. EASTERN COUNTY AND MARKET TOWN.—HALF-SHARE PARTNERSHIP in Practice established some 100 years, owing to retiral of junior partner. Average cash receipts over £2,400 p.a., of which over £700 comes from Panel and P.A.C. Suitable house available on rental. Ingoing partner should not be more than 30, preferably have a degree and some hospital experience.
5. ASSISTANTSHIP—with a view to a PARTNERSHIP SHARE to produce about £1,100 p.a., in a well-established Practice. Ingoing man must be young, have had considerable hospital experience, and preferably held an Ophthalmic H.S. He should be married or engaged, and a Protestant. Will applicants please give fully details of experience, etc.
6. DEVON, SOUTH COAST.—A well-established good-class entirely private PRACTICE producing for the past 12 months about £1,000. Panel could be had if desired. Fees 2/6, 3/6, 5,- and 7/6, with a few visits up to 21/-. Non-dispensing. Suitable house containing consulting room, 2 reception rooms, 6 bedrooms, for sale. Freehold £1,400. Partnership introduction. Would be suitable for ex-I.M.S. or similar.
7. NORFOLK AND SUFFOLK BORDERS.—A SHARE to produce about £1,100 p.a., is offered in an old-established Practice with considerable scope for increase. Receipts approximately £3,300 with a Panel of some 1,400 patients. Expenses are very low and there is likely to be a choice of houses.
8. DEVELOPING NORTHERN SUBURB.—A 3.8TH SHARE is offered in a well-established and growing Practice. Receipts for 12 months to 1/4/37 amounted to about £5,200, including about £80 from appointments and a Panel of some 5,300 patients. There is a choice of houses available.
9. LANCS.—SUBURB OF LARGE TOWN.—PRACTICE established for 10 years—gross cash receipts for year ended 31/3/37 amounted to about £800, with an increasing Panel of some 470 patients. Fees 2,6 and 3,6., with visits 3/6 and 5/-. Suitable house with good accommodation and separate surgery available on lease at £60 p.a. Premium £1,100, plus good debts, drugs and surgery equipment at valuation. Vendor giving up owing to ill-health.
10. SUFFOLK.—Within easy reach of sea and good towns. Old-established PRACTICE producing about £1,200 p.a. for disposal owing to ill-health. Panel of 700 patients. Nearest opposition 4 miles. Lovely Georgian house, with 2 reception and 4 bedrooms, dressing room and 2 attics. Professional accommodation with separate entrance. For sale £1,600 freehold, or might be rented for a short time. Premium £1,750 or near offer.
11. WEST COAST.—Well-established PRACTICE producing about £1,900 p.a., including Panel of 1,450 patients which gives £820 p.a. and one or two small appointments. Visits 3/6 to 12/6. Consultations 3,6, medicine extra. There is a Cottage Hospital, purchaser would get on the staff. There is stated to be scope for surgery. Suitable house on rental at £50 p.a., with rates of £26 p.a. Accommodation is ample, and consists of waiting and consulting room, dispensary with separate entrance, 2 reception, 7 bedrooms and billiard room, half-acre of garden and garage for 2 cars. Premium 1½ years' purchase.
12. WIMBLEDON.—Old-established PRACTICE for disposal. Gross income about £1,000 p.a., with Panel of 350 patients. There is also a possibility that the purchaser will obtain a hospital appointment worth about £120 p.a. House can be rented on lease or purchased.
13. LONDON, E.2.—Lock-up PRACTICE established 80 years for disposal. Income about £500-£900 p.a., with Panel of about 1,150 patients. Fees 2/6 and 3/6. Visits from 3/6. Suitable accommodation available consisting of consulting room, dispensary, waiting room, the remainder being sub-let for £280 p.a. Rent and rates £230 p.a. Premium 2 years' purchase to include about £150 fittings, fixtures, drugs, etc.
14. CENTRAL LONDON.—Long-established PRACTICE for disposal owing to ill-health. Income about £2,300 p.a. Panel of over 3,100 patients. There is also an appointment producing £160 p.a., which is not included in above receipts, but which might be transferable. Suitable accommodation available.
15. CITY PRACTICE.—Lock-up, hours 10-1 and 5.30-6.30, producing about £1,000 p.a., including £200 from Panel and appointments. Suitable accommodation available.
16. [illegible]
17. [illegible]

Small garden and garage for 3 cars. Freehold £1,350. Premium 2 years' purchase.

18. ESSEX COAST TOWN.—A ONE-THIRD SHARE is offered to a physician in an old-established Practice producing about £7,200 p.a. Panel produces about £900 p.a. Consultations 3,6 to 7,6. Visits 5/- to 21/-. There will probably be a choice of houses. Ingoing partner should be aged 35 or over and must have a good hospital experience. He should hold the M.D. or M.R.C.P.
19. SURGICAL OPENING.—WITHIN 50 MILES OF LONDON.—A £1,000 share is offered to a FIFTH PARTNER in an old-established Practice. The patients comprise all classes and there is little visiting done under 10/6. Ingoing partner would do all surgery, but must be prepared to do ordinary G.P. as well. Choice of houses. Applicants must be [illegible] degree and must have their English Fellowship. Premium 2 years purchase.
20. NORTH LONDON.—PRACTICE producing £750 p.a. [illegible] from Panel and £135 from one appointment. Fees 2/6 to 5/-. Suitable accommodation available, 2 consulting [illegible] and dispensary with separate entrances—2 reception [illegible] Nett outgoings approximately £107 p.a. From [illegible]
21. LONDON, S.W.—Old-established PRACTICE producing [illegible] panel of 1,266 patients for disposal. Appointments and [illegible] about £85 p.a. House available consists of [illegible] reception room and 3 bedrooms and maid's room [illegible] might be rented. Premium £3,000.
22. NORTH-WEST COAST.—SEASIDE TOWN.—[illegible] PRACTICE FOR A PHYSICIAN.—Established over [illegible] to come to London) 4 years ago. Receipts for [illegible] Minimum fee 2 gns. Suitable rooms available [illegible] Purchaser can choose his own residence and [illegible] M.R.C.P. Premium 1½ years' purchase on actual [illegible]
23. HAMPSHIRE.—COUNTRY PRACTICE.—[illegible] PRACTICE held by vendor for past 7 years. Gross cash receipts [illegible] £740 p.a. Panel of 472. Appointments worth about [illegible] upwards. Pleasant house containing 2 reception, 5 [illegible] sional accommodation. Good garden and garage. Rent [illegible]
24. LONDON, SOUTH-EAST.—Middle-class PRACTICE [illegible] 30 years, averaging over £700 p.a. Panel of 576 and one appointment worth £25 p.a. Roomy house with good garden and garage. Lease [illegible]
25. OUTLYING EASTERN SUBURB.—PRACTICE established over 40 years and averaging about £1,600 p.a., for disposal. Panel of about 2,000 patients. Suitable premises available at a rent of 30/- per week.
26. SUSSEX.—VILLAGE PRACTICE NEAR COAST.—Well-established PRACTICE producing about £600 p.a., and capable of increase, attractively situated within five miles of favourite seaside resort. Very nice house, with ¾ acre of garden, in excellent repair. Price for Practice and house, £3,100 or house might be rented for a short period.
27. LONDON.—WESTERN SUBURB.—Old-established private PRACTICE producing about £1,100 p.a. for disposal. There is stated to be good scope for a young man who will undertake panel and midwifery. Fees 3,6 to 10,6. Small compact house on rental. Premium £1,500.
28. SOUTH-COAST SEAPORT.—Long established PRACTICE for disposal owing to Vendor's retirement. He has held it for the past 39 years. Income last year approximately £573 with a Panel of about 400 patients. Vendor previously held a public appointment producing £450 p.a. [illegible] relinquished owing to age limit. It is considered that [illegible] time to the Practice would increase the receipts. Suitable [illegible] available on rental.
29. EASTERN COUNTIES.—Mixed-class PRACTICE [illegible] district producing for last 12 months over £1,300 p.a. [illegible] house in good position with 2 reception, 4 bedrooms, [illegible] Separate professional accommodation. Modern conveniences [illegible] garage. Price for freehold £1,300. Sport of all kinds and schools within reach.
30. [illegible] WO GOOD TOWNS.—Old-established [illegible] averaging over £1,600 p.a., [illegible] ow expenses. Detached house in own grounds, containing 2 sitting rooms 5 bedrooms, etc. Rent £70 a year. Premium £1,750.
31. LONDON.—NORTH-WEST.—Recently established and steadily developing PRACTICE producing for last 12 months approximately £1,600, and increasing at the rate of about £200 p.a. Suitable house can be rented or flat obtainable. Premium 2 years' purchase.
32. NORTH-EAST COAST.—Old-established PRACTICE producing about £900 p.a., but stated to be capable of considerable increase. Choice of houses. Partnership introduction given, as vendor retiring.
33. MIDLANDS.—FAVOURITE RESIDENTIAL TOWN.—Chiefly better class non-dispensing PRACTICE, producing for last 12 months over £1,600. Panel of 560 and one appointment worth £150 p.a. Fees 3/6 to 21/-. Very nice house with ample accommodation, garden and garage. Freehold for sale. Premium 2 years' purchase.
34. CENTRAL LONDON.—PRACTICE is worked as a "Lock-up" and averages about £1,000 p.a. Fees from 2,6. Suitable accommodation can be obtained. Premium 2 years' purchase.
35. SUSSEX.—ATTRACTIVE DISTRICT NEAR SEA.—PARTNERSHIP.—A ONE-FOURTH SHARE is offered (after preliminary assistantship of 6 to 12 months) in old-established Practice having good scope. Gross cash receipts for last 12 months approximately £3,275. Panel of about 1,300. Appointments worth over £300. Choice of houses on rental for ingoing partner. Premium 2 years' purchase.
36. SUSSEX COAST TOWN.—PRACTICE established 45 years for disposal owing to retirement of Vendor. Present receipts about £600. There is stated to be scope for increase as receipts have fallen owing to Vendor's [illegible] Panel about 650. Large house can be rented at £150, or part [illegible] probably choose own residence.
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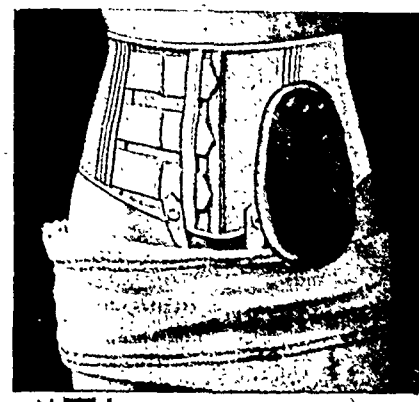
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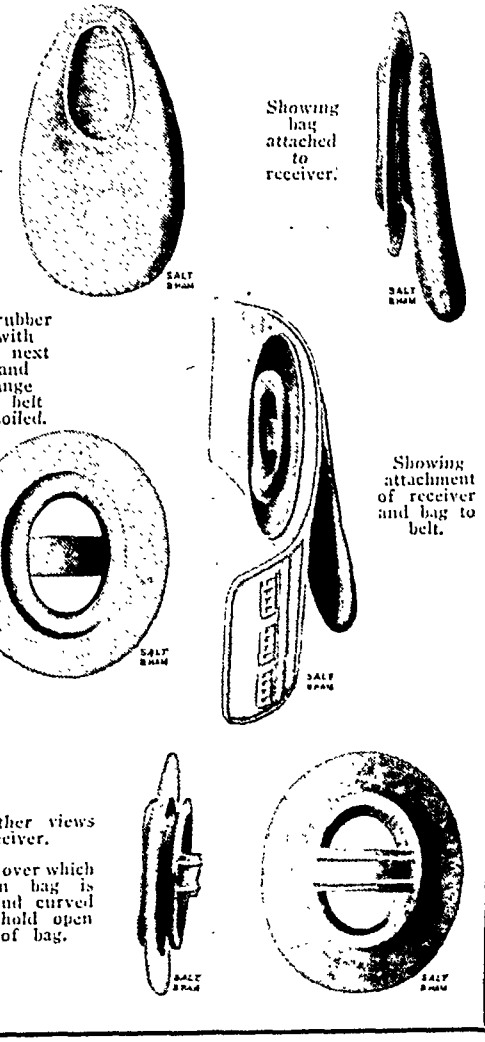
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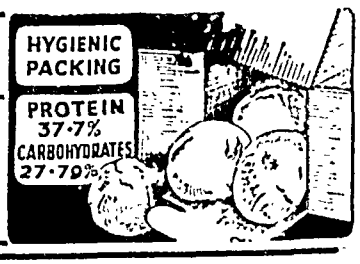
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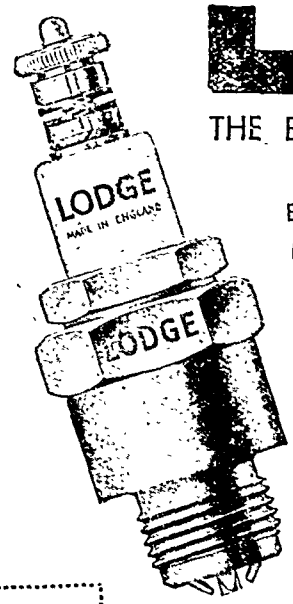
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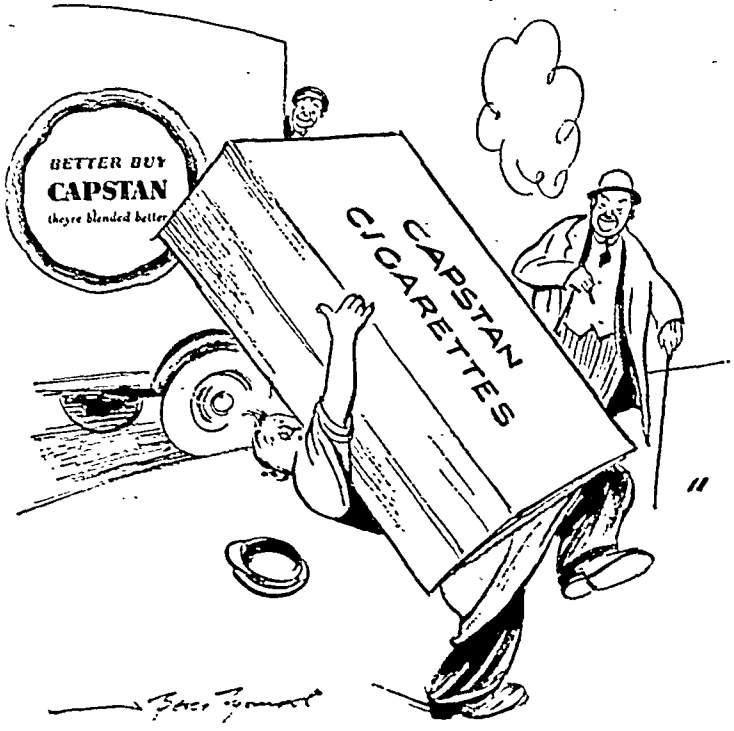
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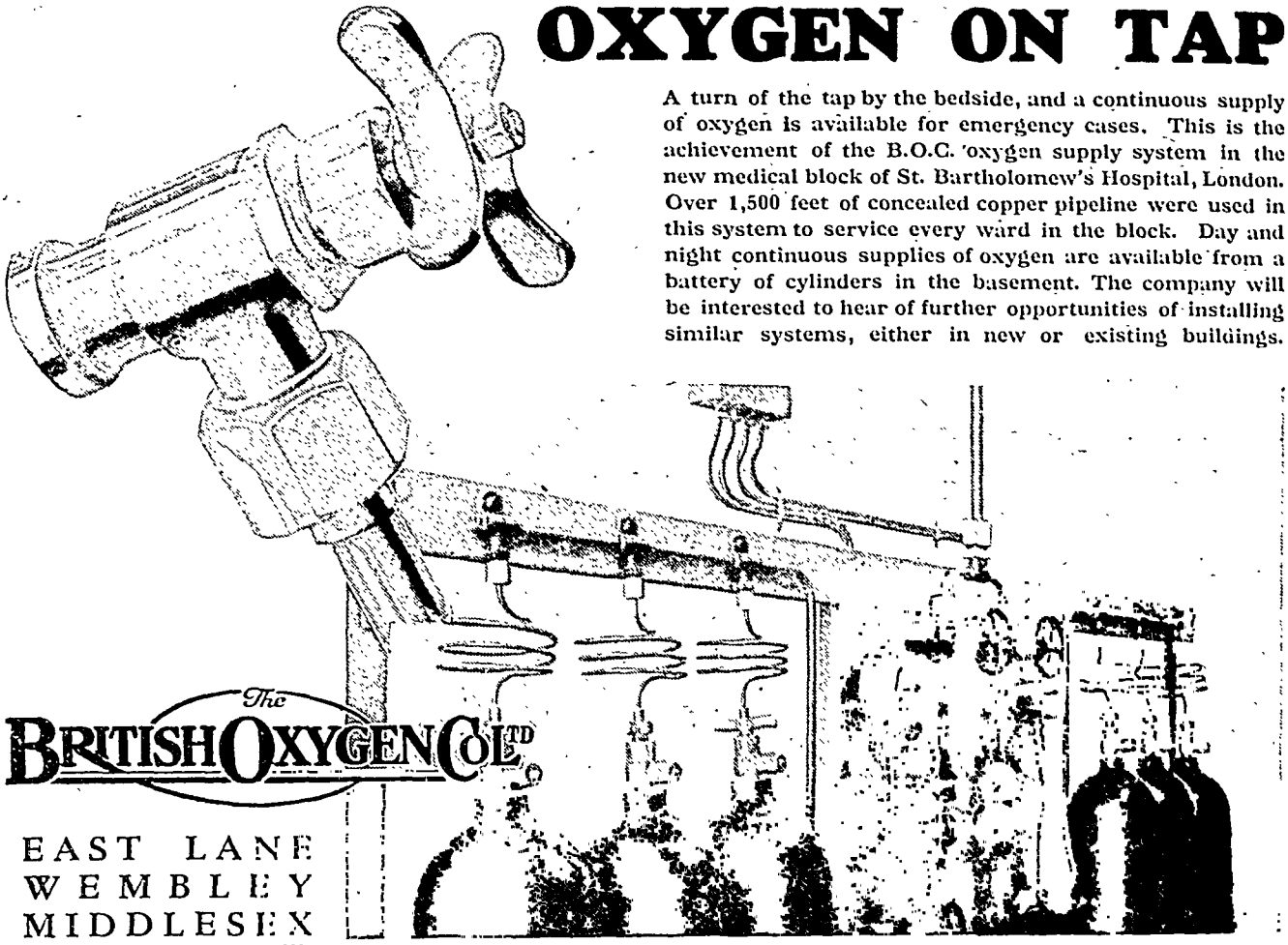
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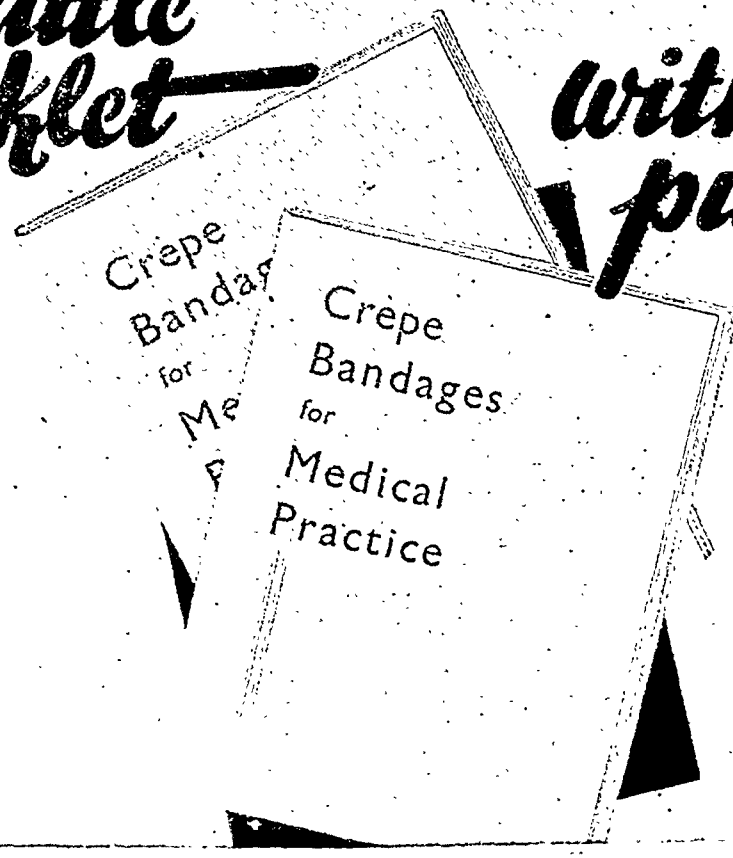
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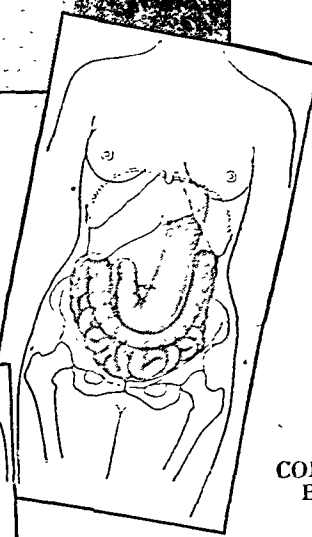


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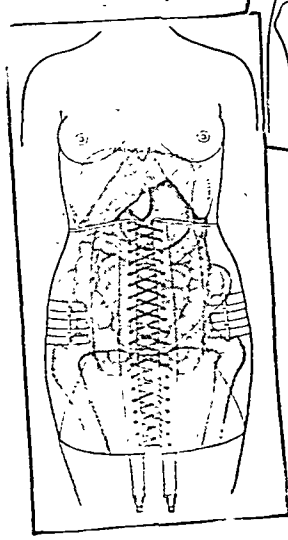
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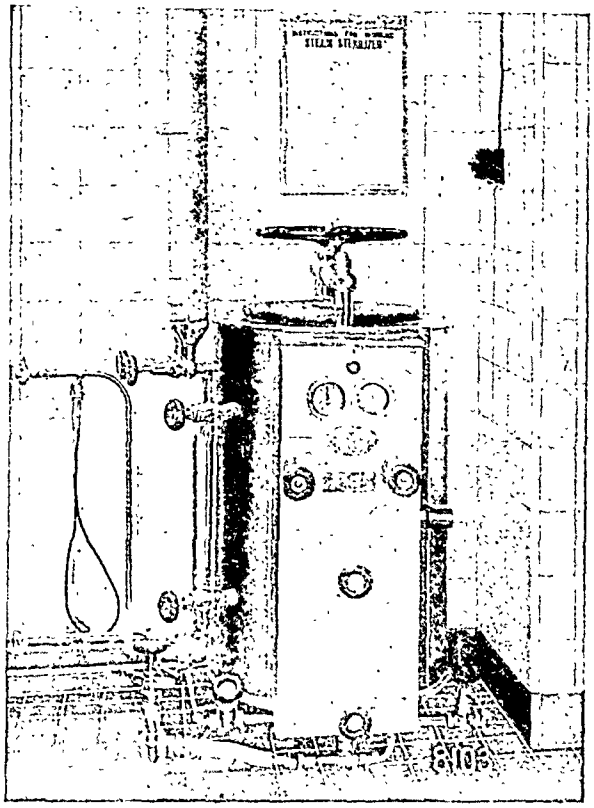


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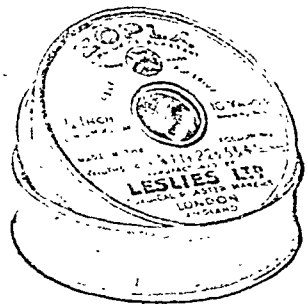
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LESLIES ZŌPLA

STRAPPING is available on elastic cloth as well as the usual cloth.

Thoroughly reliable under all conditions.

A Popular Strapping.
High Quality. Low Prices.

Strongly self-adhesive. White or flesh cloths.

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(Zōpla Elastic Plaster Bandage)

The ideal treatment for varicose ulcers, sprains, etc.

Material is very elastic, cream or flesh cloths.

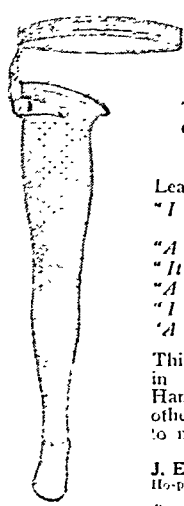
ZŌPLA ON WHITE FELT

is coming to the fore. Used as a padding and for protection. Does not become hard in use, and is long lasting. Many thicknesses and compressions.

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The great advances in recent years in prostheses for the lower extremities are exhaustively described and illustrated in a 72-page book under the above title.

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"I congratulate you on this interesting, instructive and artistic production. I consider it to be a very great addition to my library."—M.B., Ch.B., F.R.C.S

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This book is the result of practical experience gained in rehabilitating over **100,000 amputees** by the Hanger establishment. Many times larger than any other limb makers in the world. It is devoted solely to making and fitting artificial limbs alone.

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- "A" TABLETS in Diarrhoea, Flatulence and Colitis.
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DOSE FOR ADULTS.—One fluid drachm diluted, one hour before going to bed.
For Nervous Sleeplessness in Children.—10 to 20 minims diluted.

In 5, 10, 22, 40, and 90-oz. Bottles.

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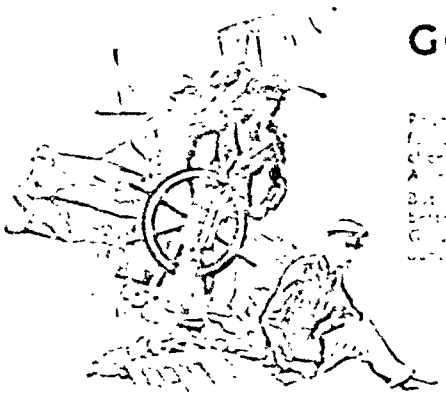
SHOP WINDOWS

Who is not tempted to glance at the goods displayed in the shop windows which brighten the streets of every town? The subtle attraction of articles thus brought to notice cannot be explained by any immediate need to purchase. Indeed, the majority of the contents of shop windows have no immediate appeal. They are seen and a mental note is made which may well prove useful later on.

So it is with the advertisements in the *British Medical Journal*. Sometimes, it is true, the reader searches these pages to find a particular preparation or appliance for use in the treatment of a specific case. More often the advertised products are noticed and remembered pending their being required at some future time.

In this way an up-to-date knowledge of proprietary aids to medical practice can be maintained without expense and with very little expenditure of time.

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WILLS'S

CUT GOLDEN BAR

2 oz. Vacuum tin

READY RUBBED
in 2 oz. Pocket Vacuum Tins and 1 oz. Air tight Tins
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1/- AN OUNCE

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KASENA THE VEGETABLE LAXATIVE

KASENA is a very pleasant and non-griping aperient prepared by a special process from matured Cascara Bark and selected Senna Leaves. Both are well known and very reliable aperients, and Kasena offers the Physician a trustworthy means of prescribing them when their use is indicated.

KASENA retains the full activity of its constituents and is specially suitable for elderly and delicate persons and for children.

It is invaluable in habitual constipation.

KASENA is supplied in bottles at 1/9, 3/- and 5/6. Postage 6d. extra.

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Relief and cure with Peat ointment.

Because eczema generally brings pain and itching, any local dressing should attempt soothing as well as healing. And this is the great virtue of Sphagnol peat ointment — that from its first touch, it gives coolness and comfort to tender skin.

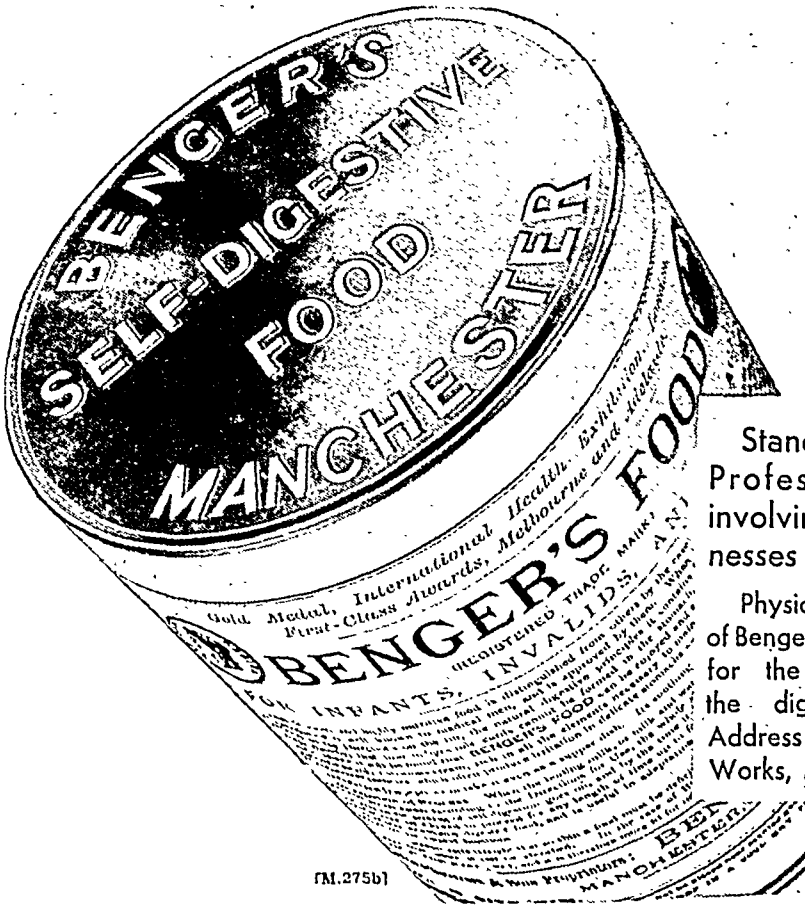
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"Thank you for the ointment. I have tried it on an incipient case of local eczematous trouble and found it to give great relief and to arrest the manifestation." Signed (Dr.) R. L.

Test Sphagnol personally. On receipt of a postcard we shall be pleased to send you a sufficient supply.

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Peat Products (Sphagnol) Ltd., Dept. B. 213, 21, Bush Lane, London, E.C.4.



Standardised by the Medical Profession for all illnesses involving or arising from weaknesses of the digestive system.

Physicians may obtain full particulars of Benger's Food and other preparations for the treatment of disorders of the digestive system, post free. Address: BENGER'S FOOD, Ltd., Otter Works, Manchester.

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[M.275b]

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NATURAL MINERAL WATER

FERMENTATIVE DYSPEPSIA

When the secretion is vitiated in quality, and the motricity of the stomach weakens, that organ dilates, and the gastric stagnation allows the micro-organisms of many ferments to develop. Quite a series of acids are then to be met with (butyric, lactic, acetic, etc.), which not only irritate the mucosa, but further, after their passage into the intestine, become absorbed by the lymphatics and swept into the circulation. **Vichy-Célestins,** by its slightly stimulating action, clears out the stomach, and thus avoids stagnation and consequent fermentation. As, in addition to doing this, it modifies stomachal metabolism, the secretions return little by little to their normal physiological condition.



NATURAL VICHY SALT for Drinking and Baths.

VICHY DIGESTIVE PASTILLES prepared with Natural Vichy Salt.

CAUTION.—Each bottle from the STATE SPRINGS bears a neck label with the word "VICHY-ETAT" and the name of the SOLE AGENTS:

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Samples free to Members of the Medical Profession.

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(ELIXIR OF AMMONIUM MANDELATE B.D.H.)

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WITH
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IN CARDIAC AND CARDIORENAL EDEMA, ASCITES, OBESITY, Etc.

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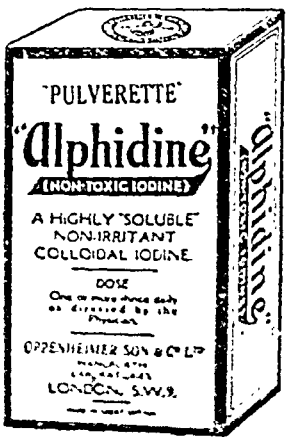
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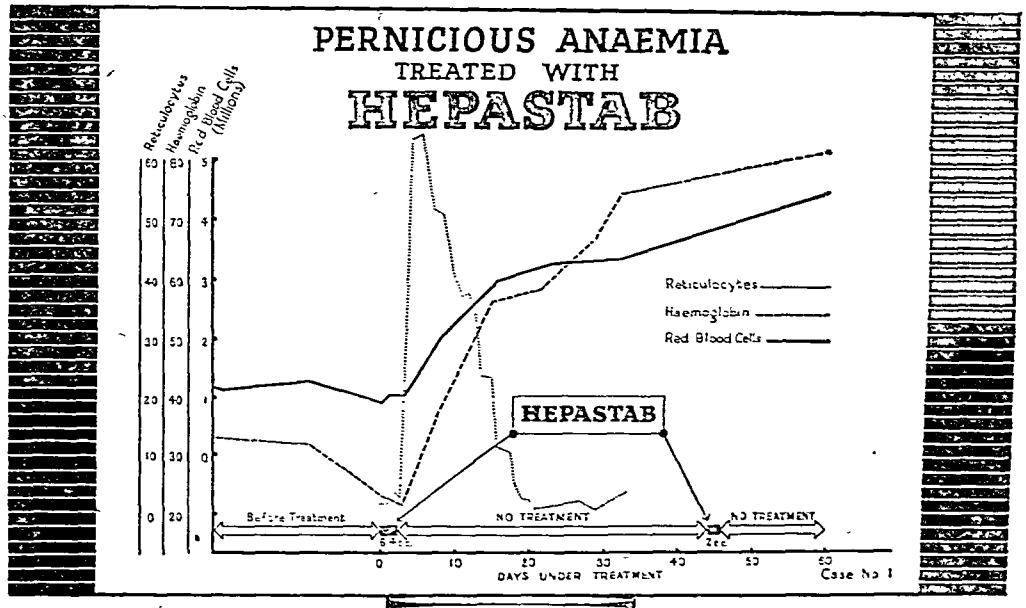
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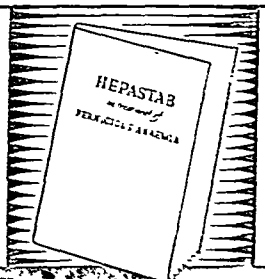
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Supplied in 2 c.c. and 4 c.c. ampoules.



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Purity · Activity · Stability

INSULIN 'A.B.'

Insulin 'A.B. was the first British insulin offered commercially to the medical profession. Its manufacture on an industrial scale was the direct result of research carried out by the joint manufacturers in their physiological and chemical laboratories; its supremacy has been fully maintained by the persistent work of the research staff engaged in its production.

Insulin 'A.B.' has a world-wide reputation for its strictly safeguarded sterility, its carefully standardised strength, its freedom from toxic reactions and its stability in hot climates.



Supplied in three strengths.

20 units per c.c.
Packed in bottles containing:
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10 c.c. (200 ,,) 2/10 ,,
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80 units per c.c.
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Full particulars and the latest literature will be sent free to members of the Medical Profession.

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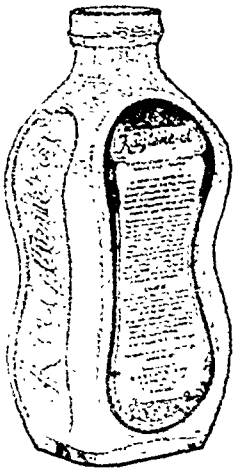
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KAYLENE TERRA SIG. ILLATA BRAND

Treatment

CHRONIC COLITIS

(Simple Mucous, Muco-Membranous, Post-Dysenteric).



(Kaylene Brand of Colloidal Kaolin with highly viscous liquid paraffin)

Alternating intervals of constipation and diarrhoea often occur in cases of colitis. Kaylene-ol is applicable in either phase. Its soothing and adsorptive actions combat the irritative diarrhoea, and its softening and lubricating actions counteract constipation during the intervals.

DOSE—KAYLENE-OL: 1 or 2 dessertspoonsful three times a day, half hour before meals, or in mild cases half hour before breakfast and at bedtime.

Kaylene-ol c Phenolphthalein (0.5 per cent.) is taken when constipation is particularly troublesome. Dosage as for Kaylene-ol.

Samples and Literature from the sole manufacturers:

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LABORATORIES AND AGENCIES IN

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BY APPOINTMENT

Schweppes

SUGAR-FREE GINGER ALE . . . .
SUGAR-FREE TONIC WATER. . .
SUGAR-FREE SPARKLING LIME

Approved by the Institute of Hygiene and the Diabetic Association.

These beverages have been analysed by the Institute of Hygiene and found "free from sugar and metallic contaminants." The analyses shown have been accepted by the Medical Advisory Council of The Diabetic Association and recommended for diabetic and obese subjects.

ANALYSIS SHOWED THE FOLLOWING RESULTS :

Schweppes Sugar-Free Dry Ginger Ale		*Ordinary Dry Ginger Ale*	*Schweppes Sugar-Free Tonic Water*		*Ordinary Tonic Water*	*Schweppes Sugar-Free Sparkling Lime*		*Ordinary Sparkling Lime*
Carbohydrates	absent	6.2%	Carbohydrates	absent	9.1%	Carbohydrates	absent	11.8%
Protein	absent	absent	Protein	absent	absent	Protein	absent	absent
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Modern Iron Therapy

Iron 'Jelloids' are an elegant and reliable means of administering the proto-carbonate of iron. The preparation has none of the disadvantages of Pil. Blaud. The iron content remains fresh and unoxidized indefinitely, and injury to the teeth is avoided.

The 'Jelloids' are highly effective in the treatment of achlorhydric anaemia and indeed in all the simple anaemias in which massive iron therapy is indicated.

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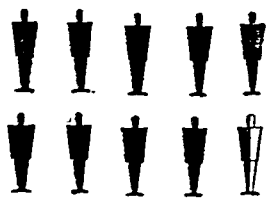
You are cordially invited to apply for samples for clinical test.
The Iron 'Jelloid' Co. Ltd., King George's Avenue, Watford, Herts.

BRAN



as effective as strong laxatives . . . *without the consequence*

7½D Per Packet



98% cases of CONSTIPATION yield to the BRAN remedy—

In laboratory tests, Bran has proved a definite remedy in 98 cases out of 100. The failures were all due to the patients' inability to accommodate bulk in fruit, vegetables, or Bran.

Most modern diets being deficient in bulk, the addition of a laxative agent becomes a necessity. Kellogg's ALL-BRAN supplies this deficiency and ensures regular elimination. ALL-BRAN needs no cooking. It is served with milk, cream or fruit and, in combination with moisture, forms a sponge-like mass in the body. This gently exercises the intestines and stimulates natural action.

Some patients prefer Kellogg's ALL-BRAN cooked in biscuits, cakes, omelettes, etc. It is rich in easily assimilable Vitamin B and iron.

Kellogg's ALL-BRAN is effective in all constipation cases except where a hyper-sensitive alimentary tract makes its use inadvisable.

Full-sized sample packet free on request.

Kellogg's ALL-BRAN

The Natural Laxative Food

KELLOGG COMPANY of GREAT BRITAIN, Ltd., Bush House, London, W. C. 2

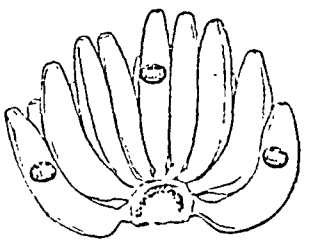
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THE THERAPEUTIC VALUE OF THE BANANA

II. Gram-Positive Results

B. S. Kahn states that fructose is an exceedingly favourable medium for the growth of Gram-positive intestinal bacteria. He reports that infants fed on a milk mixture containing 5 per cent. of banana powder showed a conversion of the intestinal flora from an almost complete Gram-negative to an almost complete Gram-positive state.

If, as appears possible, this is due to fructose, it emphasises the use of the banana as an article of diet during treatment, but only of course when fully ripe, for it is then that the fructose percentage is at its highest. In the successful use of bananas in the diet of diabetics, the improvement of the faecal flora has been assigned as this cause.



N.B. In the fully ripe banana the starch content is reduced to about 3 per cent., having been changed into soluble sugars. A banana is ripe when all green has disappeared from the skin and brown spots have formed upon the yellow surface.

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STREPTOCOCCAL INFECTIONS

STREPTOCIDE

(p-aminobenzenesulphonamide Evans)

Clinical experience with Streptocide indicates its value in the treatment of chronic wound infections due to the haemolytic streptococcus. Sterilisation of wound infections of long standing has been effected within three weeks and complete healing in six weeks.

(*vide Lancet July 3rd p. 18*)

Reduction in price—Increased production has made possible a further material reduction in price as detailed below.

Issued in	0.5 grm. (7½ grains approx.)	0.25 grm. (3¾ grains approx.)
Bottles of 25 tablets	2/9	2/–
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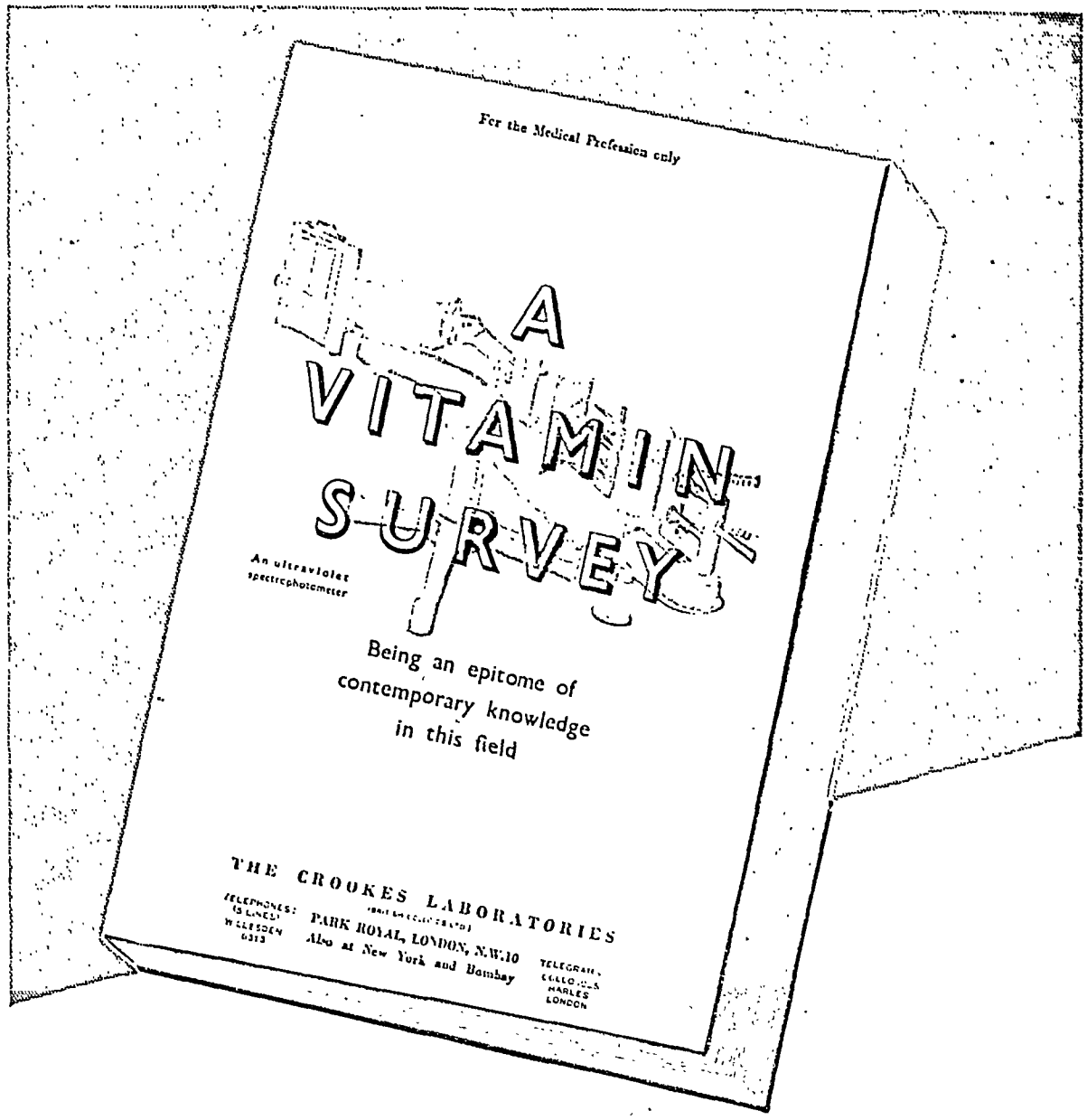
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Made at Evans' Biological Institute by

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This comprehensive survey may be described as an epitome of contemporary knowledge on the subject of those accessory food factors—vitamins. If any members of the medical profession have not received the above booklet will they please request a copy from the Crookes Laboratories.

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Cystopurin

The ideal biliary antiseptic

1 Produces no irritation or toxic effects.

2 Is readily absorbed.

3 Is active in either an acid or alkaline medium.

4 Renders the bile bactericidal and sterilises infected bile and the biliary passage.

5 Acts on causative organisms which may reach the biliary system through the systemic circulation and the alimentary tract.

6 Acts as a prophylactic.

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8 Is perfectly safe, even in large doses.

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From information received :—

"I wish to state that the patient with cholecystitis to whom I administered Cystopurin has recovered."

"Cystopurin worked well in cure of cholecystitis and cleared up all symptoms and tenderness. There is no doubt it is good and far easier to take and absorb than any similar preparation."

"Oral administration of Cystopurin was shown to be preferable to —— and within 15 days of the commencement of daily treatment, the organisms entirely disappeared. ——, administered for a similar period, whilst freeing the urinary system of organisms, failed to influence the infection of the gall bladder and bile, which remained positive."

Supplied in bulk and in tubes of 20 tablets for dispensing purposes.

Samples and literature available on request to

GENATOSAN LIMITED, Loughborough, Leicestershire.



Formula

Intestinal glands	0.05 grms.
Biliary extract	0.10 ,,
Lactic ferments	0.05 ,,
Agar-agar	0.05 ,,
Fiat tablet	0.35 ,,

Initial Daily Dose
Two Tablets

Laxatives, it is well known nowadays, must have two essential characteristics.

1. They must be biological, i.e., they must accord with and imitate in their action the natural physiological processes of the intestine.
2. They must be capable of educating the intestine, so that the habit of a laxative is not formed and the intestine can function unaided when bowel adjustment is attained.

Taxol has both these advantages.

Taxol has not the violent irritant action of many laxatives and purgatives, but stimulates the intestine by processes which resemble those of nature. The intestinal gland which is an important part of its composition acts on the intestine by reinforcing the deficient function which has culminated in constipation. This stimulating action is gentle, and does not force the weakened intestine to efforts beyond its power, which would culminate in aggravation of the constipation.

Taxol is not habit-forming. It re-educates the intestine to resumption of normal function unaided, thanks to the biological nature of its action. It contains no irritant drug of violent and artificial action to which the intestine can become accustomed. On the contrary, many stubborn cases of constipation, after a course of TAXOL, revert to normal and regular peristalsis.

CONTINENTAL LABORATORIES LTD.  **30 MARSHAM STREET, LONDON, S.W.1**

TRADE MARK 'TABLOID' BRAND

SULPHONAMIDE-P

0·5 gramme

(*p*-aminobenzenesulphonamide or sulphanilamide)

Successfully employed in Hæmolytic Streptococcal Infections such as:—

Streptococcal Septicæmia, including Puerperal Septicæmia, Scarlet Fever with Complications, Erysipelas, Tonsillitis and also in Meningococcal Infections, Gonococcal Infections, Urinary Tract Infections such as *B. coli* and Proteus ammoniæ.

Laboratory experience indicates that trial is also justified in:—

Staphylococcal Septicæmia and Staphylococcal Infections, Typhoid and Paratyphoid Fevers.

London Price to the Medical Profession

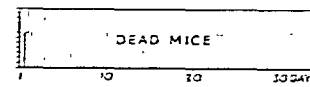
Bottles of 25 products, at 2 - per bottle
Bottles of 100 products, at 7 - per bottle

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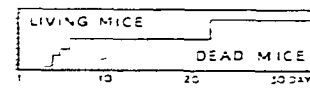
CHARTS SHOWING DECREASE IN DEATH-RATE OF MICE TREATED WITH TABLOID SULPHONAMIDE P AFTER INFECTION WITH HÆMOLYTIC STREPTOCOCCI

Areas indicate groups of 12 mice. Each mouse infected with 50,000 Streptococci = 10,000 lethal doses

(1) UNTREATED CONTROLS



(2) AFTER 2 MGM. SULPHONAMIDE-P

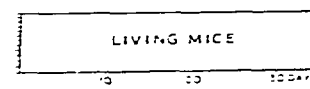


(3) AFTER 10 MGM SULPHONAMIDE-P



(4) AFTER 50 MGM. SULPHONAMIDE-P

No abscesses were seen on post-mortem examination. Spleen cultures were sterile



The Sulphonamide-P was given by mouth immediately after infection, the dose repeated 5 hours after, 2, 3, 4 and 12 days after infection

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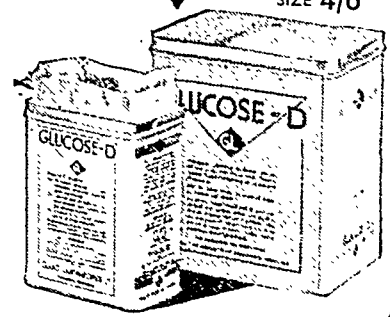
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INDIVIDUAL VARIATION IN RESPONSE TO DRUGS*

BY

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Every practitioner is familiar with the wide variation shown by patients in their response to drugs. Therapeutic success is indeed dependent on the adjustment of standard methods and doses to the needs and peculiarities of the individual patient. Such work makes special demands on clinical skill and experience, and here the general practitioner has a special advantage on account of his knowledge of the patient's peculiarities. It is sometimes suggested that medical practice is degenerating into an automatic process whereby diagnosis is supplied by a laboratory and the appropriate remedy by a therapeutic index. The individual variation of patients will, however, always constitute a factor limiting such tendencies, and is a sure safeguard against the replacement of practitioners of medicine by automatic machines.

The actual range of individual variation tends to be ignored because most therapeutic methods are such that the amount of drug given can be adjusted to the individual need. If the same dose of a drug is given to every individual in a large population then the extent of individual variation is at once revealed. Therapeutic methods of this type, however, are comparatively rare.

The usual method adopted in the administration of powerful drugs is to start with a small dose and to observe the effects produced on the patient before working up to a full dose. The administration of a volatile anaesthetic is an example of the manner in which it is usual to correct individual variation, since the anaesthetist concentrates his attention on each patient, and by suitable adjustment of the dosage secures a uniform response. Most well-established clinical methods of drug administration are of this type, and hence the range of individual variation is masked, and indeed is in danger of being forgotten. This is evidenced by the fact that from time to time therapeutic methods are recommended which involve giving patients a full dose of some potent drug without providing any opportunity for first determining their individual response to it. In most cases such a risk is unnecessary, but in some it is very desirable to produce a full therapeutic action as quickly as possible, and therefore to know the probable limits of human variation. The chief problem is to ascertain what ratio between the average lethal dose and the therapeutic dose represents a reasonable margin of safety in the use of a drug. The extent of the margin actually desirable is a matter of opinion, but it will be generally agreed that if a therapeutic measure involves the chance of producing a serious toxic effect even in one case in 1,000, it must be considered dangerous. This chance will therefore be taken as representing the limit of justifiable risks.

The determination of the incidence of severe toxic effects is obviously a problem which the clinician is glad to leave to the laboratory worker, and hence no apology is needed for the discussion of evidence provided by animal experiments. In order to measure directly the occurrence of occasional toxic actions it is necessary to use very large populations; considerations of cost preclude the employment of any but small animals, and therefore the discussion of individual variation must be based chiefly on experiments made on large numbers of rats and mice. It is obvious that there is a very wide difference between mice and men; but for the reasons mentioned the evidence available is limited, and it is necessary to make as much use as possible of the existing material.

Individual Variation in Animal Populations

The lethal dose of a drug is a primary pharmacological constant, and usually is one of the first characteristics to be determined. Until about twenty years ago the method employed was to give varying doses to a dozen or a few dozen animals, and to term the smallest dose which produced death the minimum lethal dose. Such doses were stated as mg./kg., and thus correction was made for variations in body weight. The introduction of the biological standardization of drugs necessitated increased accuracy in such methods, and as soon as systematic investigations were made it was found that animals showed a considerable individual variation in their responses to drugs, and that consequently the methods that had been in use for a century were inherently inaccurate.

The outstanding results of research of this type are as follows. All populations of animals show individual variation to all drugs. The extent of the scatter of the individual variation depends both on the nature of the population and on the drug. The scatter can be reduced by making the population as uniform as possible—for instance, by the use of inbred animals instead of stock animals, and by the use of animals similar in sex, body weight, and age. The nature of the diet is another important factor—for example, vitamin deficiency increases the susceptibility of animals to many drugs (Wien, 1936). Finally, it is essential to use only animals in good health. Even when all of these precautions are taken animals still show a wide variation in their response to drugs. For example, Poe, Suchy, and Witt (1936) measured the lethal dose of strychnine salts for rats. They used about 4000

* Read in opening a discussion in the Section of Pharmacology and Therapeutics, including Anaesthetics, at the Annual Meeting of the British Medical Association, Belfast, 1937.

animals, and therefore their results are statistically significant. In the case of adult male rats the average or mean lethal dose (50 per cent. mortality) was 2.25 mg./kg., but 4 per cent. were killed by 1.5 mg./kg., and a similar number survived 3.5 mg./kg. They found, moreover, that the mean lethal dose for adult females was 60 per cent. of that for males, whilst the mean lethal dose for young animals was about 70 per cent. that for adult animals. In the case, therefore, of adult animals of mixed sexes 4 per cent. were killed by about one-fourth the dose which 4 per cent. survived. In view of this result it is not surprising to note that previous workers who had estimated the minimum lethal dose for strychnine on rats by the old method of using one or two dozen animals had obtained results varying from 0.7 to 3.4 mg./kg.

The scatter shown in the individual variation of the response to drugs unfortunately differs very widely in the case of different substances. The simplest method of describing the scatter is by measuring the coefficient of variation. The "standard deviation" in the response to a drug is approximately equal to the difference between the doses producing 50 per cent. mortality (mean lethal dose) and that producing 16 per cent. mortality. (For the sake of brevity the mean lethal dose will be termed M.L.D.) The difference between these two doses expressed as the percentage of the M.L.D. is approximately equal to the "coefficient of variation." Examination of characteristic curves which relate dosage and percentage of mortality show that these vary from steep symmetrical sigmoid curves to highly skewed curves approximating in form to a hyperbola. The coefficient of variation in the former case may be as low as 10 per cent., whilst in the latter case it may be as much as 50 per cent. The occurrence of curves of the latter type raises the following difficulty. Our aim is to discover what percentage of the M.L.D. is likely to be safe—that is, to kill less than one animal in 1,000. The determination of this fact by direct experiment would involve the use of at least 10,000 animals for a single drug; but if the shape of the characteristic curve from 10 per cent. to 90 per cent. mortality is established, and the laws of probability can be applied, then it is possible by extrapolation to calculate the chance of a mortality of 1 in 1,000. If a variation is due to a large number of independent factors of similar importance then the distribution follows the "normal curve of error"; and if, for example, 90 per cent. of the M.L.D. kills 16 per cent., then the standard deviation (σ) is $100 - 90 = 10$, and $100 - 3\sigma = 100 - 30 = 70$ per cent. of the M.L.D. will kill about one individual in 1,000.

This simple calculation cannot, however, be applied to highly skewed curves, since it produces the absurd result that a considerable proportion of a population is killed by a dose of less than nothing. It has been shown by Gaddum (1933) that reasonable results can be obtained if characteristic curves are plotted with the dosage on the logarithmic scale. This converts the skewed curves described above into sigmoid curves. In the case already mentioned a 16 per cent. mortality is produced by nine-tenths of the M.L.D., and according to this method of estimation 1 in 1,000 mortality would be produced by $(9/10)^3 = 73$ per cent. of the M.L.D. In this case the two methods of calculation give very similar results, but in a case where 16 per cent. mortality is produced by half the M.L.D. the usual method of calculation results in the absurd conclusion that 3 per cent. mortality is produced when the dose is *nil*, whereas the logarithmic method gives the possible result that 1 in 1,000 mortality is produced by $100 \times (\frac{1}{2})^3 = 12.5$ per cent. of the M.L.D.

The calculation of incidence of effects by plotting the factor causing the effect on a logarithmic scale is not a new suggestion, since its use was recommended and justified in the case of living populations by Galton and MacAlister as long ago as 1879. Table I gives a few typical results obtained with this method of calculation. These results show that although individual variation always occurs, yet, with carefully selected populations of rats, its range in the case of many important drugs is relatively narrow, and that in most of the cases quoted a dose equal to 40 per cent. of the M.L.D. is safe (that is, will not kill more than 1 in 10,000 individuals). The example of dysentery toxin proves, however, that certain poisons are inherently unsafe, since the individual variation is so great that a very small fraction of the mean lethal dose will suffice to kill susceptible individuals.

TABLE I

	Fraction of Mean Dose which should Produce Effect	
	Once in 1,000 Individuals	Once in 10,000 Individuals
Lethal actions:		
Digitalis on frogs	0.5	0.42
Neoarsphenamine on rats	0.56	0.5
Strychnine on rats	0.47	0.4
Thallium on rats	0.47	0.39
Amytal on cats	0.5	0.42
Dysentery toxin on rats	0.036	0.016
Insulin convulsions in mice	0.33	0.25

The drugs that are shown by animal experiments to be possibly safe are obviously of chief interest, and the problem is to estimate what proportion of the mean lethal human dose is safe therapeutically.

Human Lethal Dose

We are at once confronted with the difficulty that the mean lethal human dose is not known for any drug. In the case of a common poison such as strychnine textbooks of toxicology provide the following information. Several deaths have occurred when the dose taken was probably not more than 1/2 grain. Deaths from 1/4 grain have been reported, but the evidence is less certain. Recovery after 2 grains is fairly well established, and recovery after 3 or 4 grains has been reported. Obviously it is nearly always difficult, after the occurrence of a fatal case of poisoning, to obtain reliable information as to what dose has been taken. Furthermore, in the case of recovery it is always uncertain how much of the drug has been removed unabsorbed from the stomach. It is worth noting, however, that animal experiments with strychnine proved that there was a fourfold range of dosage between the least resistant and the most resistant 5 per cent. of a population, even when every endeavour had been made to exclude causes of variation. Hence there is no reason to suspect the statement that some adults have been killed with 1/2 grain of strychnine and others have recovered from 2 grains.

The animal experiments are of service in that they provide formal proof of the fact that the minimum lethal dose is a quantity which cannot be measured accurately. It is simply the smallest dose that has been observed to be followed by death, and in the case of any drug the greater the population observed the lower the value is likely to be.

It is therefore preferable in toxicology to describe the usually fatal dose, and to avoid the term minimum lethal dose.

Human Variation to Narcotics

Quantitative evidence regarding the extent of the variation of the response of patients to therapeutic doses of drugs is very scanty. In the case of the narcotics used for pre-anaesthetic medication a certain amount of accurate evidence exists, because drugs such as nembutal, sodium amytal, and evipan are given by slow intravenous injection until a constant response is produced. Such methods provide exceptionally accurate evidence regarding the relation between dosage and the incidence of a constant response in a human population. For example, Paxson (1932) measured the amount of sodium amytal (mg./kg.) needed to produce analgesia in fifty-five women during labour. His results show that 16 per cent. were narcotized by three-fourths of the median narcotic dose. This is a variation like that found for the lethal action of sodium amytal in cats, rabbits, and rats (Swanson and Page, 1927), and for the related compound sodium nembutal given intravenously to dogs and rats (Swanson and Shonle, 1931) and to rats alone (Gage, 1933). Variations of a similar extent were observed in these cases in respect to both the hypnotic and the lethal doses.

Similarly in the case of avertin given per rectum, the figures of Flörcken and Mues (1928) indicate that 50 per cent. of the population is narcotized by 80 per cent. of the dose needed to narcotize 84 per cent. The scatter as regards the proportion of a population of rats anaesthetized by graded doses of avertin (per rectum) is of similar extent (Lendle, 1928; Tunger, 1931; Gage, 1933). These facts permit the calculation of the extremes of response that are likely to be encountered in a population of 1,000. These are shown in Table II.

TABLE II

Ratio of Doses Producing Effect in 16 and 50% of Population (D_{16}/D_{50})	Percentage of Mean Dose (D_{50}) Producing Effect		Ratio *a/b*
	(*a*) In 0.1% Population	(*b*) In 99.9% Population	
0.75	42	237	1/5.6
0.8	51	200	1/3.9
0.9	73	137	1/1.9

Reports regarding the occurrence of exceptional responses to basal narcotics indicate variation within the scale shown in Table II. In the case of avertin Shipway (1936) found that 1,300 out of 1,500 cases were narcotized by doses between 0.09 and 0.1 g./kg., but that three cases (0.2 per cent.) required 0.12 g./kg. This distribution suggests a ratio D_{16}/D_{50} of a little less than 0.9.

In the case of evipan McNelis (1936) noted that in 1,000 cases one man required 4 grammes to produce anaesthesia, and that with one woman 0.9 gramme appeared to be an overdose. This is the type of result to be expected from a D_{16}/D_{50} ratio of 0.8.

These results indicate that the variation in human beings in response to narcotics is very similar to the variation which occurs in animal populations. It would appear that a D_{16}/D_{50} ratio of about 0.8 must be expected, and consequently in a thousand cases it is probable that the most resistant individual will require about four times the dose needed by the least resistant individual. This unavoidable and unpredictable human variation would seem to constitute an important limiting factor in basal narcosis. Those methods in which the dosage can be adjusted to the individual response would appear to be preferable to those in which a standard dose has to be given to all patients. The latter method is satisfactory in the majority of cases, but produces unfortunate results when individuals are encountered who represent the extreme of variation.

Blood Alcohol and Intoxication

The measurement of the concentration of alcohol in the blood seems to be a much more accurate and scientific method than the estimation of the degree of intoxication by clinical examination. It is important to note, however, that although the former method may indicate accurately the amount of alcohol that has been taken, it does not indicate the effect produced on the patient, because there is a wide individual variation in regard to alcohol concentration in the blood and intoxication. This is shown by the reports of Bogen (1927) and of Widmark (1932), which describe in 250 and 562 cases respectively both the blood concentration of alcohol and the result of clinical examination. The results agree in demonstrating that a concentration of alcohol in the blood of 1.2 mg. per 100 c.cm. produces intoxication in 50 per cent. of cases. Bogen's figures show that intoxication was not present in any case in which the alcoholic content was less than 1 mg. per 100 c.cm.; whilst Widmark found none below 0.8 mg. per 100 c.cm., but observed six cases of intoxication in thirty individuals in whom the blood concentration was between 0.8 and 1.0 mg. per 100 c.cm. At the other end of the scale Bogen's figures show one case in thirty-five not intoxicated with 4 to 5 mg. per 100 c.cm., whilst Widmark's figures give one case in twenty-nine not intoxicated by 2.5 mg. per 100 c.cm. The ratio between the alcohol concentration not intoxicating the most resistant individuals and that affecting the least resistant individuals was about fourteen to one in Bogen's series and three to one in Widmark's series.

Examination of the figures shows that they do not follow the ordinary laws of probability, for there appears to be a lower limit of about 0.8 mg. per 100 c.cm., below which intoxication never occurs; whilst a concentration of 1.2 mg. per 100 c.cm. produces intoxication in about 50 per cent. of the population, but the more resistant half of the population reveals a wide scatter.

Animal experiments give a relatively small variation in response to alcohol. For example, Lendle's (1928) figures suggest a D_{16}/D_{50} ratio of 0.9. The difference in the results obtained with men and with rats is easily explained on the assumption that there is little natural variation with regard to the effects of blood alcohol on cerebral functions, but that a certain proportion of the human population acquire tolerance. Incidentally the results obtained by Bogen and Widmark provide fairly clear proof that the variation in tolerance to alcohol, which is such a familiar fact, is not merely due to differences in the rate of absorption, but that in addition there is a considerable individual variation in the effect produced by alcohol in the blood on the functions of the brain.

Measurements of the relation between the quantity of alcohol drunk and the incidence of intoxication would probably show a much wider scatter of individual variation than do the figures under discussion, because of wide differences in the rate of absorption of alcohol from the alimentary canal. Bogen's figures disclose a wider scatter of variation in the resistant half of the population than do Widmark's figures, but even in the case of the latter the distribution indicates that one individual in 1,000

would not be intoxicated by about four times the blood alcohol concentration that intoxicates 50 per cent. of the population.

Massive Digitalis Therapy

Digitalis preparations are standardized biologically on cats and on frogs, and figures for the variation in response of large populations are available. These figures show a very uniform response. The ratio D_{16}/D_{50} is about 0.9, and hence a dose equal to 73 per cent. of the mean lethal dose would kill only one individual in 1,000. Such results suggest that massive digitalis therapy may be a relatively safe procedure. There is, however, a very wide difference between a population of healthy cats and a population of patients with heart disease of varying intensity. Animal experiments prove that this apparent uniformity in response is obtained only when acute toxic effects are observed. For example, Bauer (1933) gave cats one-half a lethal dose of digitoxin, and then measured the amount of ouabain required to produce death twenty-four or forty-eight hours later. The individual variation with this latter dose was far greater than that found for the acute lethal action of these drugs. The ratio D_{16}/D_{50} was about 0.75, which indicates that one animal in 1,000 would be killed by 42 per cent. of the M.L.D. Similarly Li and van Dyke (1936) measured the individual variation in respect of cumulative poisoning in frogs. They gave doses of digitalis glucosides on alternate days, and their figures reveal a wide variation in the sum of the doses needed to produce death. The ratio D_{16}/D_{50} is about 0.4, and in this case a mortality of 1 in 1,000 would probably be produced by 1/16 of the M.L.D. Even with healthy animals, therefore, the uniformity of response to digitalis glucosides ceases as soon as opportunity is allowed for the action produced to be influenced by such factors as rate of excretion, etc.

The variability of the response of patients to digitalis therapy is well known; the following quantitative data give an indication of the scatter that occurs.

Murray Lyon and Gilchrist (1927) measured the changes produced in the heart rate by massive digitalis therapy. Their results show that the reduction in heart rate in cases of auricular fibrillation may range from 20 to 100 beats per minute, and that the greater the initial rate the greater was the reduction. In their group of thirty-seven cases with an initial heart rate between 70 and 100 per minute the reduction varied from 18 to 45 per minute in fibrillating cases, and from 0 to 40 per minute in non-fibrillating cases. Alstead (1936) noted the daily dose of powdered digitalis that produced nausea in thirty-six patients. In two nausea was brought about by 1 grain daily in a week, whilst in twenty-two cases 2 grains daily did not produce nausea in two weeks. Figures such as these indicate a wide individual variation in the response of patients to digitalis. The scatter of the variation appears to resemble the scatter observed in cumulative experiments on animals much more closely than the relatively uniform responses met with when the acute lethal dose of digitalis for animals is measured.

The question of practical interest is the probable margin of safety in massive digitalis therapy. The existing evidence is admittedly imperfect, but it suggests that in different individuals there is likely to be at least a fourfold range in the quantity of a drug required to produce a given effect. Consequently it appears to be very improbable that any method will be found of judging *a priori* the dose needed accurately enough to ensure that the average therapeutic dose will not produce severe overdosage in the occasional patient who is abnormally sensitive.

Conclusion

Individual variation is an unattractive subject because its existence constitutes a limitation to therapeutic measures of an annoying and irrational character. If a therapeutic method has produced satisfactory results in a dozen cases it seems irrational that the same technique should have an undesirable effect in the next case on which it is tried. It seems probable that the extent of individual variation is consistently under-estimated, because if an individual representing an extreme of variation happens to be encountered in a small group the result is apt to be discounted as an accident. The evidence available suggests, however, that whenever it is possible to measure quantitatively the effects produced by a drug in a large population an orderly distribution of variation in response is revealed. If this is the case, then the laws of probability indicate that if very large populations are studied occasional individuals will show very wide deviations from the mean response. These exceptional individuals are undoubtedly a nuisance from the clinical standpoint, but their existence must be recognized.

I feel that an apology is needed for the incomplete and inconclusive nature of the evidence collected in this paper. The examples chosen were the best I could find, and the result is evidence of the urgent need for fuller information regarding the distribution of human variation in response to drugs.

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The Hon. Edward Cadogan, deputy chairman of the National Advisory Council set up by the Government to assist in the "National Fitness" scheme, gave an address recently at Harrogate in which he discussed the question of grants for projects of physical training and recreation. He said that when some local body was in need of funds for building a club, gymnasium, or swimming pool, or to lay out a recreation ground, its proposals would go before an area committee, which, after examination, would pass them on with comments to the Central Grants Committee in London. Grants would not be given to central organizations for distribution, but would be made directly in aid of particular local projects put forward by the voluntary organizations and by local authorities. In the Government's efforts to make a healthier and a fitter nation the element of compulsion would be entirely lacking. Mr. Cadogan ended with a tribute to local authorities and voluntary organizations for having done so much with meagre resources to supply the needs of those over school age; but the demand for means for physical training and recreation now far exceeded the supply.

FOOD REQUIREMENTS AND FOOD INTAKES*

BY

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AND

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In quantitative work of any kind it is most important always to distinguish clearly between what is actually being measured and the deductions that are being made therefrom. This statement applies to the study of human food requirements and intakes just as much as it does to any other scientific investigation involving measurement, and the purpose of this article is to examine some of the assumptions and deductions commonly made in such work.

Food Requirements

As applied to food or food constituents the term requirement is used in several rather different senses. To most people the unqualified term "requirement" seems to mean the amount of any food constituent which will maintain an individual or a group of individuals in the *status quo ante* over a prolonged period of time. The term is used very loosely because the *status quo*, which is usually average health, is often presumed to be a state of perfect health, but in the absence of any tests must often not be so. This use of the term "requirement" is to be discouraged. The term "minimum requirement" permits of more precise definition, and may be stated for adults to be the least amount of any dietary constituent necessary to maintain a perfectly healthy individual in equilibrium for a given (usually a short) period of time. For children a separate definition is required. Here the minimum requirement is the least amount of any dietary constituent which will support an optimal rate of storage in the growing body.

The minimum requirements of many food constituents can be directly determined both in animals and man. The determination always involves some experimental departure from natural conditions, and the actual method varies with the particular food constituent to be investigated. Thus the determination of calorie requirements may involve a totally different approach and technique from the determination of the various mineral requirements. "Optimum requirements" for both adults and children are of far greater practical importance than minimum requirements, but they are exceedingly difficult to assess. They always exceed the minimum requirements by an allowance for foreseen and unforeseen eventualities. This allowance cannot be experimentally determined. In its assessment many independent lines of evidence may have to be considered, and the final decision is always a matter of judgement and will vary with the investigator. Everyone is agreed, however, that the requirements of different food constituents vary with age, sex, and occupation, and do not necessarily all vary in the same direction. Thus the calorie requirement rises with age up to puberty and thereafter varies with the amount of physical work performed. The calcium requirement, on the other hand, is certainly greater in childhood and adolescence than it is after growth has ceased, and is possibly greatest of all during pregnancy and lactation. Women's iron requirements are probably greater than men's throughout the whole of the child-bearing epoch. Vitamin requirements are admittedly greater during childhood than they are in later life, and, as with calcium, pregnant and nursing women rank with children in this respect.

Food Intakes

Food intakes are usually measured with a view to determining the chemical composition of the diet, although in some cases the kinds and amounts of the actual foods eaten are of primary importance. The determination of food intakes might appear at first sight a relatively simple matter, and so indeed it is, but even here assumptions are usually made. These can be reduced to a minimum if individual diets are weighed, and duplicate portions of all food and drinks are set aside and analysed by reliable chemical methods. In practice this is only possible if relatively few persons are studied. If individual diets are weighed and the composition calculated from food tables it is assumed that the composition of the foods eaten is the same as that of the foods analysed. This is certainly not the case, since the composition of different samples of the same food may vary widely. Experiments have shown, however, that the error introduced under favourable conditions is not a large one. Individual food intakes, therefore, can be assessed with a high degree of accuracy and the result regarded with a corresponding measure of confidence. They are not, however, synonymous with individual requirements and should never be so regarded, although they may be used, but only in special circumstances and with special precautions, as a guide to optimum and even minimum requirements.

In dietary investigations individual intakes have been little studied, and the usual procedure has been to determine the food intake of a group of persons. The accuracy with which this can be done varies with the group to be studied and the method to be employed, but, speaking generally, it can be done with an accuracy little, if at all, inferior to that attending the determination of individual intakes. If the experiment is performed on a group of persons of the same age and sex the average intake for that age and sex can readily be obtained. It is perfectly justifiable to average in this way, although, if one does, the value of the results is limited by the fact that the individual variations—which are of the greatest importance in medicine—remain quite unknown. The moment a less homogeneous group is selected for study difficulties begin to arise, not in the measurement of the food consumption of the group, but in the handling and interpretation of the data. Let us suppose that the group selected for study is a boys' school where the ages vary from 8 to 12. The results obtained expressed as averages on a per capita basis have considerably less significance than those obtained from the homogeneous group discussed above, because it is known that the intakes of boys of 8 are less than those of boys of 12. In most practical nutritional studies the difficulties are very much greater, for the unit or group commonly selected for study is the family, consisting generally of an adult of each sex and a variable number of children of different ages. To average family food intakes on a per capita basis is obviously of little scientific value. The following device was accordingly introduced many years ago and has been employed ever since.

Arbitrary scales for the food requirements of adults and of children of all ages and both sexes have been drawn up by various workers. The requirements of the family studied are worked out from one or other of these scales,

* Read in the Section of Nutrition at the Annual Meeting of the British Medical Association, Belfast, 1937.

and the sum of the individual requirements may then be compared with the family intake actually obtained. More usually the scale of requirements may be used to reduce the family intake to a unit value—the so-called "man value" basis. By these means one family may be compared with another and the manipulation of the results generally is greatly facilitated. Now let us consider the shortcomings of this method.

1. Many assumptions have to be made, even in the collection of the data.. If any members of the family take meals away from home the amount consumed by them is a matter of guesswork. The same applies if visitors are entertained during the period of investigation.

2. At best the "family" method gives only average results. Individuals within the group may not behave in the predicted manner, and the results obtained therefore have little or no individual significance. To cite a particular instance, if a mother were to starve herself to death for the sake of the other members of the family, the result would merely be a somewhat subnormal intake for the family on the "man value" basis.

3. The use of a scale of requirements to reduce an accurately measured group intake to a unit value is fraught with danger. Requirements are always a matter of judgement, and every investigator either selects one of the thirty-eight scales of requirements already proposed or introduces yet another more in keeping with his own ideas. When, therefore, the same family intake is reduced to a unit value basis, the results shown may vary by 30 per cent., according to the reducing scale adopted.

4. The scales of requirements in current use are scales of calorie requirements. Everything that we know about requirements indicates that a different scale of requirements should be used for each food constituent investigated. It is in fact a serious mistake to apply a scale of calorie requirements to evaluate intakes of calcium—or iron—or indeed of anything other than calories. This mistake, however, is still frequently made (Cathcart and Murray, 1936; Newcastle, 1936). It is no excuse to plead that requirement scales for calcium or iron are not in existence. Better far to give no results for these ions than to give results which are incorrect and misleading. Actually, scales have been drawn up on these lines, and that suggested by Stiebeling and Ward (1933) is probably the best in existence at the present time.

Conclusions

The food intake of a family may be ascertained with considerable accuracy, but the result has little meaning, and the reduction of this result to a unit value basis gives at best an average without individual variations and is achieved only by making some very daring and wholly unwarranted assumptions. Obviously the family method can never be used to assess requirements, since an arbitrary scale of requirements is invariably used in manipulating the results.

It is difficult indeed to understand why the family method of investigation has had such a vogue, but this point lies quite outside the scope of the present critique. The question is rather whether it should ever be used again. If no other method of studying food intakes were available there would of course be no question, but it is difficult to see what advantages, if any, the family method has over the individual method. Any result obtained by the former technique can be obtained with greater accuracy and without assumptions by the latter. The individual method of study is not difficult, and we would urge those desirous of making nutritional investigations to give it a trial rather than to follow slavishly a method the results of which are so very difficult to interpret.

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THE TREATMENT OF NON-STENOSING PEPTIC ULCER*

BY

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This discussion has been limited advisedly to the treatment of non-stenosing peptic ulcer, because where stenosis has established a mechanical obstruction there can be no difference of opinion as to the appropriate treatment. Mechanical obstruction demands surgical relief.

In the treatment of non-stenosing ulcers there has been a movement during the past decade, in practice rather than in opinion, towards conservative measures. The best surgical opinion has always upheld a sane conservatism. It was a favourite *obiter dictum* of Lord Moynihan's that he never operated on a case of duodenal ulcer until it had been cured nine times by a physician. But there is no doubt that some years ago there were numerous surgeons who regarded all chronic peptic ulcers as suitable grist for their mill, though, being what are known as "practical surgeons," they were not given to airing their views in the medical literature. The swing of medical opinion that has effectually prevented this wholesale and indiscriminate operating upon non-stenosing ulcers is, it will be agreed, a good thing. But in a discussion such as this we should not be influenced greatly by the vogue of the moment, but should seek to inform medical opinion on the more controversial points of treatment, and to lay down clear and precise indications as to the place of surgery in this field.

The change in practice to which I have alluded has been brought about partly by the unfortunate results of indiscriminate surgery, but chiefly by improved medical technique. The almost universal use of fractional gastric analysis has provided a much better guide to treatment than to diagnosis. Far more attention has been devoted to diet, and it has been widely realized that diet is more important than alkalis in the continuous neutralization of hyperchlorhydria which is the aim of medical treatment. There is also a praiseworthy tendency in many quarters to test the results of medical treatment by repeated radiological studies, though, as we shall see later, there are dangers in placing too much reliance on the picture of an ulcer crater.

These advances in medical technique compel our admiration and approval. A less admirable development of recent years has been the widespread use by patients of the various proprietary alkaline powders and medicines, often in large doses over a prolonged period and often with serious toxic results. On the recent vogue of treatment by histidine injections I will merely say that in my

* Read in opening a discussion in the Section of Surgery at the Annual Meeting of the British Medical Association, Belfast, 1937.

judgement it has no convincing scientific foundation save that of psychotherapy, and venture to predict that it will soon have its day and cease to be.

Duodenal Ulcer

The proper treatment of non-stenosing duodenal ulcer is medical. Few, I imagine, will dispute this statement, or deny that if the medical treatment is thorough, including an adequate period of rest in bed at the start and the most punctilious regulation of diet and manner of life in the later stages, the results will usually be good. But cases are not uncommon in which medical treatment fails because the patient is unable or unwilling to carry out instructions as to diet, or for various other reasons. When medical treatment has repeatedly failed or is for social reasons impracticable, ought we to refuse the patient the benefit of surgery until, after years of suffering, he can provide evidence of pyloric stenosis? Some would answer "Yes," but I would not count myself as one of these pessimists.

Another indication for surgery in duodenal ulcer is the occurrence of severe haemorrhage, in one or more attacks. I do not now advocate operation during or immediately after a grave haemorrhage, for I believe the risks are too great. But a serious haemorrhage is very prone to recur, and our aim should be to prevent the chance of a recurrence if we can do it with reasonable safety. The grave emergency can generally be tided over by blood transfusion, and then, when the pulse rate and volume and haemoglobin percentage show that we can operate with safety, we should not delay longer if the patient is on general grounds a good surgical risk and if we are sure that he has a chronic ulcer. I do not dwell on acute perforation as an indication for surgery, since that is outside the realm of controversy.

The Choice of Operation for Duodenal Ulcer

We have not solved the problem, however, when we have laid down the indications for operation. An equally important question is, What operation should we perform? Where the main indication for operation is the prevention of recurrent haemorrhage I am sure that the right answer is this, that the first essential is to excise the ulcer, and with it the vessel that has been bleeding. Gastro-enterostomy alone is a very ineffective operation for a bleeding duodenal ulcer, and gastro-enterostomy combined with excision of the ulcer is both difficult and dangerous. The most effective method of excising the ulcer is to include the first part of the duodenum in some form of gastrectomy. This both controls the source of the bleeding and averts the danger of a recurrence. But where the ulcer is a penetrating one on the posterior wall of the duodenum with great surrounding fibrosis its excision may involve too much danger. In such cases it may be more prudent to leave the ulcer alone, divide the pre-pyloric portion of the stomach some two inches above the pyloric sphincter, and do a high Polya gastrectomy. The ulcer will be left in a cul-de-sac of duodenum removed from contact with acid gastric juice, and may be relied upon to heal without delay.

We must now consider the choice of operation for simple non-stenosing duodenal ulcers with no history of haemorrhage. It is comparatively rarely that we are called upon to operate on such cases, but in recent years opinion has been more divided as to the best operation to perform in this condition than upon any question in gastric surgery. We may, I think, exclude from our consideration such operations as gastro-duodenostomy in its various forms, which have never achieved great popularity among surgeons in these islands, and other "fancy operations," and limit our attention to the question of posterior gastro-enterostomy versus gastrectomy. Posterior gastro-enterostomy is an operation with a very low mortality—not more than 2 per cent. in competent hands—and the vicious-circle vomiting so often met with twenty years ago has been eliminated by modern technique; but over it hangs the dread of gastro-jejunal ulcer, and gastro-jejunal ulcer is a far worse calamity than the duodenal ulcer to which it may succeed. What is the risk of this calamity after a posterior gastro-enterostomy? The most careful and comprehensive inquiry into this problem was the collective investigation carried out for the Fellows of the Association of Surgeons of Great Britain and Ireland by Garnett Wright and published in 1935. In a series of 1,730 cases of duodenal ulcer treated by posterior gastro-enterostomy he found an incidence of gastro-jejunal ulcer amounting to 8.49 per cent. But there are certain difficulties in accepting this figure as the whole truth. No fewer than 1,004 other cases were untraced, and it is a matter of speculation whether that large number contained a higher or a lower incidence of gastro-jejunal ulcers than the cases that were traced. My own opinion, for what it is worth, is that the incidence would be somewhat higher. Then there was a series of 507 gastric ulcers in this investigation with the surprisingly high incidence of 10.45 per cent. of gastro-jejunal ulcers. This is surprising, for the reason that operations for gastric ulcer are in the experience of most surgeons far less likely to be followed by gastro-jejunal ulcer than are operations for duodenal ulcer. Garnett Wright very justly ascribed this anomaly to the inclusion in this gastric group of many "pyloric ulcers" that should more properly have been described as duodenal. A correction of this classification, had it been possible, would have swollen still further the incidence of gastro-jejunal ulcer. I think it is not unfair to conclude that if we take the work of surgeons of repute all over the country we may consider that posterior gastro-enterostomy for duodenal ulcer is followed by gastro-jejunal ulcer in about 10 per cent. of cases. I do not forget that Sir James Walton (1934), in a personal series of 893 duodenal ulcers, all of which were traced, found only 3.24 per cent. of gastro-jejunal ulcers; but that is gastric surgery at its best, and I suggest the figure of 10 per cent. for gastric surgery of good average quality. Some may estimate the incidence as even higher.

This conclusion is a grave indictment against the operation of posterior gastro-enterostomy for the non-stenosing duodenal ulcer, and this is the reason why many surgeons in this country, and I think more surgeons on the Continent, are abandoning gastro-enterostomy except where stenosis is present. There is good evidence for the belief that gastrectomy, by permanently lowering the secretion of hydrochloric acid, involves a much lower risk of anastomotic ulcer later, but it is a more difficult operation, with a higher mortality, and is certainly no operation for the occasional surgeon.

What is the operative mortality of gastrectomy for duodenal ulcer? It is higher, I believe, than that of the same operation when performed for gastric ulcer, because of the greater technical difficulties, and it may be estimated as somewhere in the region of 6 per cent. But it is essentially capable of reduction in competent and experienced hands, though it is too much to hope that gastrectomy for duodenal ulcer will ever carry as low an operative mortality as gastro-enterostomy.

The conclusion I submit is the following. Where the gastric analysis shows a high hydrochloric acid curve, as it commonly does in young men with duodenal ulcer, the

risk of gastro-jejunal ulcer later is so grave that we should do a high gastrectomy, preferably of the Polya type. In duodenal ulcer in women the risk of recurrent ulcer is much less, and here, if the test meal shows a low acid curve, gastro-enterostomy is a very satisfactory operation. In elderly patients who are poor risks by reason of cardiac or pulmonary degeneration there is also less danger of recurrent ulcer, and where some operative measure is inevitable the less severe operation of gastro-enterostomy should be performed.

Gastric Ulcer

Although gastric ulcers share with duodenal ulcers a common, and largely uncertain, aetiology, their surgical treatment presents very different problems. As we have seen, our treatment of a duodenal ulcer is conditioned by the fear of a more or less remote gastro-jejunal ulcer. Operations for gastric ulcers, however, because of the much lower gastric acidity, are very rarely followed by anastomotic ulcers. But gastric ulcers carry their own special nightmare—the dread of carcinoma. Carcinoma in the first part of the duodenum is so rare that it may almost be said not to occur there, nor does a cancer of the pyloric end of the stomach ever spread into the duodenum. But the stomach is the commonest site of cancer in the body.

The Relation of Gastric Ulcer to Cancer

The danger of cancer supervening on a chronic gastric ulcer has been greatly exaggerated in many quarters. It is a long time since Wilson and MacCarty (1909) of the Mayo Clinic startled the medical world by the statement that 68 per cent. of all gastric ulcers removed at operation showed microscopical evidence of malignancy, and that 71 per cent. of all gastric carcinoma showed pathological evidence of a preceding simple ulcer. It has been proved by many succeeding investigators, approaching the problem from both the pathological and the clinical aspects, that the incidence of the so-called ulcer-cancer is far smaller than Wilson and MacCarty claimed. The site of election of gastric ulcers, which are mostly on the lesser curvature, differs in a striking way from that of cancer, which occurs most commonly near the pylorus, and Stewart's investigations on this point are visualized on the accompanying diagrams (Figs. 1 and 2). Stewart (1931), in a series of 277

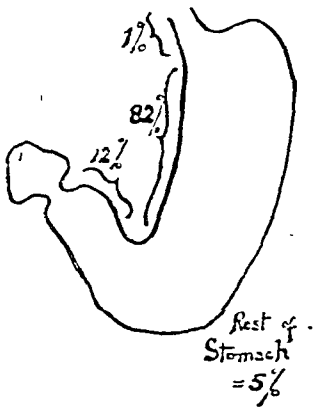


FIG. 1.—Site of ulcer.

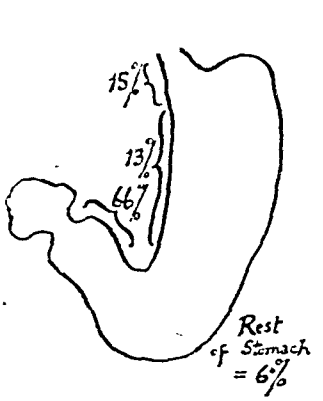


FIG. 2.—Site of carcinoma.

chronic ulcers removed by operation, found evidence of early carcinoma in 6.1 per cent. Newcomb (1932), in another careful pathological investigation, showed that 3.5 per cent. of gastric ulcers showed an early malignant change. My own opinion, based upon both histological and clinical evidence, is that malignant transformation of a simple gastric ulcer is a very rare event. In a series of fifty-four cases of proved cancer of the stomach I found (1923) that the average duration of gastric symptoms before examination was 12.7 *months*, whereas in forty-five cases of proved simple chronic ulcer the average duration of symptoms was 10.3 *years*.

It is not, I would suggest, the frequency with which they become malignant that should influence our attitude to the treatment of gastric ulcers so much as the difficulty in many cases of arriving at an accurate diagnosis between simple and malignant ulcers. There is a type of slow-growing cancer of the stomach, by no means uncommon, which very closely simulates the clinical picture of gastric ulcer. In these cases the pain is at first periodic in character, and is relieved both by food and by alkalis. Appetite is often retained, and the gastric analysis in the early stages shows a high or normal acidity. The growth may be regarded as a simple ulcer for a year or two, and yet is a carcinoma from the beginning. The radiological appearance may be either doubtful or suggestive of simple ulcer.

In view of the rarity of simple ulcers and the frequency of carcinomata in the pyloric region lesions in that position that appear to be simple ulcers should always be regarded with suspicion. It is a sound rule that where a pre-pyloric ulcer has been treated medically for three weeks, and there is still occult blood in the stools, gastrectomy should be performed. Whenever a patient of cancer age presents a considerable ulcer crater in any part of the stomach with a short history of gastric pain a suspicion of malignancy should be entertained, no matter how innocent the radiological appearance may be. The following case illustrates this point dramatically.

A lady aged 60 consulted her doctor complaining of vague epigastric pain of a few weeks' duration and some loss of weight. She had never suffered from indigestion before. A radiograph showed a penetrating ulcer in the middle of the lesser curvature that was regarded as simple. Medical treatment was advised. Six weeks later she was rather better, and had put on a few pounds in weight. A second radiograph now showed that the ulcer crater was nearly filled up. After a further three months she was again losing weight and feeling rather more discomfort, in spite of medical treatment. A third radiograph taken less than six months from the onset of symptoms showed a definite carcinoma at the site of the original ulcer crater. I explored the abdomen and found widespread secondary deposits in the peritoneum, and was unable to do anything. It is certain, I think, in spite of the earlier *x*-ray appearance, that this was a carcinoma from the beginning.

Such a case teaches us most eloquently that in gastric surgery clinical history may be more reliable than radiological signs.

Whether the wider use of the flexible gastroscope will prove of great value in this difficult matter of distinguishing simple from malignant ulcers I do not know. When I think of the number of cases I have seen in which the innocent naked-eye appearance of the specimen after resection has been falsified by the microscopical evidence of malignancy, I am doubtful.

Quite apart from the urge that the fear of cancer gives us to radical measures for gastric ulcers, the results of surgical treatment of ulcers in this field are more favourable than in the non-stenosing duodenal ulcers. This is mainly attributable to the fact that in gastric ulcers we find a much lower average acidity than occurs with duodenal ulcers, and consequently there is comparatively little danger of recurrent or anastomotic ulceration. Medical treatment, on the other hand, especially in the larger ulcers, is often followed by relapse after relapse.

Choice of Operation in Gastric Ulcer

It will be agreed by most surgeons that simple gastro-enterostomy is not a satisfactory operation for gastric ulcer. Although it will produce brilliant results in a proportion of cases it is too often followed by recurrence. And any operation that fails to excise the ulcer gives no safeguard against the development of a cancer if the diagnosis should be mistaken. Gastro-enterostomy is not enough. Simple excision of the ulcer also stands condemned because it leaves unaltered the physiological conditions that led to the formation of an ulcer, and is followed in a large proportion of cases, as we might expect, by recurrence. Excision of the ulcer combined with gastro-enterostomy is a much more satisfactory operation, but its results are in no respect better than those of partial gastrectomy, and it is often a much more difficult operation to perform. For this reason I now find myself doing it very rarely.

The operation of choice for any accessible chronic ulcer in the stomach is undoubtedly some form of partial gastrectomy. On this main question there is very general unanimity among surgeons. It is only when we come to discuss the precise method of performing the gastrectomy that differences of opinion appear. This is not the place to discuss the minutiae of surgical technique, but the choice lies between some form of Billroth I operation in which the stump of the stomach remaining is anastomosed with the first part of the duodenum, or some variety of the Polya gastrectomy (including Finsterer's operation) in which the stomach is united to the side of the first jejunal loop. There is perhaps no very fundamental principle involved, and every surgeon will tend to get the best results with the type of operation in which constant practice has steadily improved his technique. My own preference is decidedly in favour of that modification of the Billroth I operation associated with the name of Schoemaker. It has the advantages that it is simple to perform, it is less destructive of gastric function than the Polya operation, and it is therefore less liable to be followed by a severe degree of achlorhydric anaemia. I repeat that each surgeon will be guided chiefly by his practical experience. My own experience is that the Schoemaker gastrectomy is the safer operation. For gastric ulcer I have performed the Polya operation only forty-seven times with three deaths, a mortality of 6.4 per cent., while I have performed the Schoemaker operation 171 times with five deaths, a mortality of 2.9 per cent.

I submit that a method of gastrectomy involving a mortality of less than 3 per cent. is getting near to the ideal that it should be as safe as gastro-enterostomy. The convalescence is always smooth and uneventful, and the late results are good in a very high proportion of cases. I have a record of only one anastomotic ulcer following the Schoemaker operation in my own series. For the large ulcers extending high up on the lesser curvature I find this operation rather more feasible than the Polya, because one is not compelled to use the fibrosed lesser curvature adjacent to the ulcer in making the anastomosis.

Treatment of Gastro-jejunal Ulcer

There is no comparison between the ease of operating on a gastric or duodenal ulcer that is, so to speak, virgin soil for the surgeon and the difficulty of an operation for an anastomotic ulcer. To undo the gastro-enterostomy, excise the ulcer, and restore the stomach and jejunum to their original state is often a long and arduous undertaking, so that a surgeon who has accomplished it is tempted to be content and to close the abdomen. But if he does the original duodenal ulcer may usually be relied upon to re-form, and if later another gastro-enterostomy should be undertaken for its relief the gastro-jejunal ulcer will almost inevitably recur.

There is only one satisfactory operation for a gastro-jejunal ulcer that resists all medical treatment, as a good many of them do, and that is to undo the gastro-enterostomy and then to proceed to perform a high Polya gastrectomy. Only by abolishing the gastric function and removing the oxyntic cells as completely as possible can the vicious circle be broken. There is no more formidable operation in the surgery of the stomach, particularly where a gastro-colic fistula has to be closed in addition. The mortality is a very considerable one, but for those patients who come safely through the operation the prospects of a permanent cure are extremely good.

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THE VALUE OF PATERNITY EXCLUSIONS MADE BY THE BLOOD-GROUPING TEST

BY

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With the increasing demand for the introduction of legislation in this country to allow of the use of the blood-grouping test in all paternity cases it is desirable to examine the test in greater detail to see exactly what it will do. It is unnecessary to discuss in detail the method of inheritance of the blood groups, as this has recently been done by other authors (Harley and Roche Lynch, 1937, 1937a), but it may conveniently be summarized in four laws, two relating to the ABO system and two to the MN system. The heredity of the ABO system is dependent upon three allelomorphic genes, A, B, and O, of which A and B are dominant over the recessive O. The MN system is inherited by two genes, M and N, each of equal dominance. Thus we have the four main blood groups, A, B, AB, and O, each of which may be further subdivided by the independent MN system into M, N, or MN.

The Laws of Inheritance

The laws of inheritance which have been formulated from the investigation of many thousands of families are:

ABO.—(1) The factors A and B cannot appear in the blood of a child unless they are present in the blood of one or both parents. (2) The combinations AB parent and O child, and vice versa, are incompatible with the laws of heredity of the group factors.

MN.—(1) The factors M and N cannot appear in the blood of a child unless they are present in the blood of one or both of the parents. (2) The combinations M parent and N child, and vice versa, are incompatible with the laws of heredity of the group factors.

The groups A and AB may be further subdivided into A_1 and A_2 and A_1B and A_2B by the use of appropriately absorbed group B or normal animal sera. This observation was first made by von Dungern and Hirsch-

feld in 1911, and from it has arisen the accurate subgrouping of the factor A; A_1 being the "strong" A and A_2 the "weak" A. Recently Friedenreich (1936) has demonstrated the existence of a still weaker type of A receptor, which he calls A_3. All these factors are inherited according to simple Mendelian laws, A_1 being dominant over A_2, which in turn is dominant over A_3. I propose to ignore the A_3 group, as the factor is extremely rare and very few families have so far been investigated. However, with the introduction of the A_1–A_2 system into paternity cases we have a greatly increased probability of exclusion based upon four further laws:

A_1–A_2.—(1) The agglutinogen A_1 cannot appear in the blood of a child unless it is present in the blood of one or both parents. (2) The combinations A_1B parent and A_2 child, and vice versa, are incompatible with the laws of heredity of the group factors. (3) In the special matings $A_1B \times B$ and $A_1B \times A_1B$, A_2B children cannot result. (4) Where several children are available in each mating further special exclusions are possible with the following five special crosses: $A_1 \times O$, $A_1 \times A_1$, $A_1 \times B$, $A_1 \times A_1B$, and $A_1 \times A_2B$. In these matings, if there is one child belonging to either group O or B none of the remaining children can be of group A_2 or A_2B, and conversely. This is easily understood from a consideration of the genotypes of the parents concerned (Table I).

We are dealing, therefore, with two independent genetic systems (the ABO and A_1–A_2 systems may conveniently be taken together), the genotypes of their various constituent groups being shown in Table I.

TABLE I.—*Composition of the Blood Groups.*

Genotype	Phenotype	Genotype	Phenotype
A_1–A_2 system:		ABO system:	
A_1A_1	A_1	AA	A
A_1A_2		AO	
A_1O			
A_2A_2	A_2		
A_2O			
A_1B	A_1B	AB	AB
A_2B	A_2B	BB	B
		BO	
MN system:		OO	O
N_1N_1* MM	M		
N_2N_2 NN	N		
MN_1 MN	MN		
MN_2			

* The N_2 type is discussed under exclusion type 4. No person corresponding to N_2N_2 has yet been demonstrated.

It is upon these laws of inheritance that the possibility of making paternity exclusions is based. There are, however, certain reservations attached to some of the exclusions, and I propose to discuss each of the various types of exclusion in detail, starting with the strongest and going down to the weakest.

Types of Exclusion

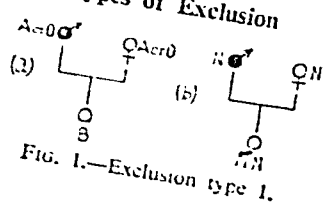


FIG. 1.—Exclusion type 1.

In these two cases the exclusion of the man from paternity is so strong as to be almost absolute. In case 1a we know that the father must possess the B factor, and in case 1b he must possess the M factor, neither of which obtains with the men in question. Both the B and the M factors are extremely stable, and there is no reason to suppose that they are ever suppressed—that is, fail to appear in the phenotype although actually present in the genotype. This exclusion, therefore, is the strongest which is compatible with the accuracy of the test.

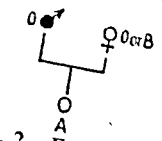


FIG. 2.—Exclusion type 2.

This exclusion, although apparently the same as type 1, is in fact slightly weaker. This will become obvious after discussion of type 3.

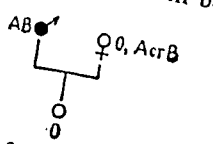


FIG. 3.—Exclusion type 3.

Haselhorst and Lauer (1930, 1931) described a case of an AB mother whose child had persistently remained group O. This is the only proved exception to the ABO system that has been demonstrated, all the other reported exceptions of the same type showing a latent development of the specific factors in the child. In the Haselhorst case, as the child was blind at birth, was markedly deformed, and suffered from a severe anaemia, the anomaly is probably due to a failure in the development of the agglutinogen in the child. The mother was of group A_2B, and in view of the stability of the B factor it is probably the A_2 factor which has not developed—that is, the child is a "latent" or "repressed" A_2, which may later become manifest or may remain hidden throughout his life.

Exclusion type 3 is really a Haselhorst case against the father, and in estimating the value of the exclusion we have to take into account the possibility of a recurrence of the Haselhorst case. Owing to the comparative rarity of group AB, relatively few AB mother–child combinations have been investigated (1,500), whereas 15,000 group O mothers have been examined, none of their children being of group AB. The estimated chance of the failure of a dominant gene in the genotype to develop phenotypically is less than 1 in 10,000, so that, even bearing in mind the possibility of an exception, the value of the exclusion is still very great. It cannot, however, be as absolute as that of exclusion type 1.

Suppose, now, that a person did contain a suppressed A gene which was not apparent in the phenotype. It is possible, if he married, that he might transmit the suppressed gene, which in the next generation might assume its normal dominance and become apparent in the phenotype. Thus it is remotely possible for two group O parents to have a group A child if this eventuality came to pass. Such a case is envisaged in exclusion type 2, in which a group O man is to be excluded as the father of an A child, the mother being either O or B. The chance of such an occurrence is extremely remote, being obviously even less than that of the Haselhorst case, but to be entirely accurate a "formal reservation" in these cases should be made.

It is possible that type 3 of the exclusions may operate against the mother in a paternity case, and if an AB mother is found with an O child in such a case there is a very strong probability that the child is not the natural child of the woman but has been adopted for the purposes of blackmail. Such a case is recorded by Wiener in

New York, where he was able to show that the woman was not the mother; she withdrew her charges against the defendant and the case was stopped (personal communication).

This type of exclusion may be further divided by the A_1–A_2 system:

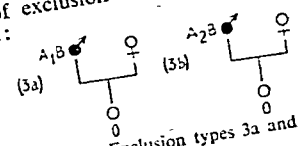


FIG. 4.—Exclusion types 3a and 3b.

The A_1 factor is very much more stable than the A_2 and is more on a par with the B factor in its exclusion power. Thus the exclusion type 3a is almost as strong as type 1, whereas type 3b, in which exclusion has to be made on account of the A_2 factor, is equivalent to the Haselhorst case and requires a definite reservation in assessing its value.

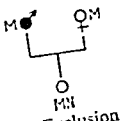


FIG. 5.—Exclusion type 4.

This again appears superficially to be an absolute exclusion, the N factor not being present in either of the parents. Crome (1934), however, described a 19-year-old mother of group OM with an 18-months-old child of group ON, and this apparent exception was confirmed by a number of workers. Thomsen examined the mother with exceptionally strong sera and found that she actually possessed a very weak N receptor as well (analagous to the A_2 factor), and he classified her as OMN_2. The father was an N, so that the child's genotype became NN_2 instead of the MN which was expected. Friedenreich (1936a) has investigated a number of families in which the N_2 receptor is present, and has shown that in fact the MN system is represented by three genes—M, N_1, and N_2—instead of just M and N as was previously supposed. Of these N_1 is dominant over N_2 in the same way as A_1 is dominant over A_2.

In this exclusion type the possibility is that either of the parents may be MN_2, the N_2 receptor being suppressed in them but becoming dominant again in the child. There is a second possibility—that the N_2 factor might be missed by the use of too weak test sera. The possibility of suppression of the N_2 factor is the same as that for the suppression of the A_2 factor, and requires only a formal reservation in interpreting the value of the exclusion. The possibility of an error in technique outweighs the possible error in genetic transmission. It is therefore essential that blood-grouping tests, when used for medico-legal purposes, should be entrusted only to competent experts who have the requisite apparatus and sera continually in use under properly controlled conditions (Thomas, 1937).

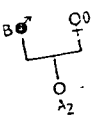


FIG. 6.—Exclusion type 5.

Here again a factor (A_2) is present in the child but is not present in the blood of either the mother or the putative father. The A_2 factor is a weak one and may easily be missed, especially if it is present in conjunction with the more powerful B receptor. As an instance of this I may give my own blood group. As a matter of interest a year ago I was grouped by three persons independently. The first told me I was a group O—his sera were useless, being totally inactive; the second informed me I was a group B—his anti-A serum was of low titre and reacted with A_1 only as far as a dilution of 1 in 2, and with A_2 not at all; the third correctly grouped me as an AB, although even with his potent sera the A reaction was not marked. In fact, the correct group is A_2B, so that there is a very real possibility of error in failing to detect the A_2 in an A_2B blood. Unless this possibility is excluded by the use of properly controlled sera of high titre the value of the exclusion is lost.

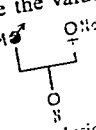


FIG. 7.—Exclusion type 6.

Here, at first sight, the man may be excluded, as his blood contains no N receptor. The exclusion is similar to that of type 4, the same reservation applying to both, the possibility being that the man may be an MN_2, in which case the child could be genotypically N_1N_2. Although it appears exactly similar to type 4 it is in fact a slightly different exclusion. In this case the child is N_1N_2, inheriting an easily demonstrable factor from the mother, the possibility of error arising from the failure to demonstrate the weak N_2 in the alleged father. In type 4 the exclusion is obviously stronger, for if the child is MN_2 and one of the parents is MN_2 there is no reason why the N_2 should be demonstrated in the one and not in the other. Thus the possibility of technical error is greater in type 6 than in type 4.

In effect the exclusion made by type 6 is the case which Crome described, and the possibility of error must always be borne in mind. The error, however, is one of technique rather than of heredity, and as such should be guarded against and overcome.

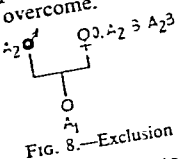


FIG. 8.—Exclusion type 7.

This is an immediate exception to the laws of inheritance of the A_1–A_2 system, in that A_2 is not present in either the mother or the alleged father. The reservation which must be made in these cases is again one of the possibility of error in technique, and unless the criteria of proper technique are satisfied and unless the reactions obtained the exclusion cannot stand.

FIG. 9.—Exclusion type 8.

No importance should be attached to this exclusion type owing to the possibility of technical error at the present time.

Considerations in Evaluation

In general the following considerations apply in the evaluation of paternity exclusions by the blood-grouping test.

ABO System

By far the most complete investigations of the heredity of the blood groups have been made with the ABO system, and out of the many tens of thousands of families examined only one exception to the accepted laws of transmission of the group factors has been demonstrated (the Haselhorst case). The possibility of the recurrence of such a case is so slight that *paternity incompatible with the ABO system must be excluded with as great a degree of certainty as a biological method can give.* It is justifiable to leave the Haselhorst case out of consideration unless there are quite exceptional circumstances, apart from the blood-grouping test, which indicate that the paternity is established.

TABLE II.—*Paternal Exclusions by the ABO and A_1–A_2 Systems*

Mother	Child	Father	
		Possible	Impossible
O	O	O, A_1, A_2, B	A_1B, A_2B
O	A_1	A_1, A_1B	O, A_2, B, A_2B
O	A_2	A_1, A_2, A_2B	O, B, A_1B
O	B	B, A_1B, A_2B	O, A_1, A_2
A_1	O	O, A_1, A_2, B	A_1B, A_2B
A_1	A_1	All groups	None
A_1	A_2	O, A_1, A_2, B, A_2B	A_1B
A_1	B	B, A_1B, A_2B	O, A_1, A_2
A_1	A_1B	B, A_1B, A_2B	O, A_1, A_2
A_1	A_2B	B, A_1B, A_2B	O, A_1, A_2
A_2	O	O, A_1, A_2, B	A_1B, A_2B
A_2	A_1	A_1, A_1B	O, A_2, B, A_2B
A_2	A_2	O, A_1, A_2, B, A_2B	A_1B
A_2	B	B, A_1B, A_2B	O, A_1, A_2
A_2	A_2B	B, A_1B, A_2B	O, A_1, A_2
B	O	O, A_1, A_2, B	A_1B, A_2B
B	A_1	A_1, A_1B	O, A_2, B, A_2B
B	A_2	A_1, A_2, A_2B	O, B, A_1B
B	B	All groups	None
B	A_1B	A_1, A_1B	O, A_2, B, A_2B
B	A_2B	A_1, A_2, A_2B	O, B, A_1B
A_1B	A_1	All groups	None
A_1B	B	All groups	None
A_1B	A_1B	A_1, B, A_1B, A_2B	O, A_2
A_1B	A_2B	A_1, A_2, A_2B	O, B, A_1B
A_2B	A_1	A_1, A_1B	O, A_2, B, A_2B
A_2B	A_2	O, A_1, A_2, B, A_2B	A_1B
A_2B	B	All groups	None
A_2B	A_1B	A_1, A_1B	O, A_2, B, A_2B
A_2B	A_2B	A_1, A_2, B, A_1B, A_2B	O

A_1–A_2 SYSTEM

Here the available family material is considerably smaller than that of the other two systems, but there can be no doubt as to the correctness of the genetic hypothesis which has been advanced. In a few persons the red cells give atypical reactions so that they cannot be classified sharply into either group A_1 or A_2, and no conclusions ought to be drawn from them by the A_1–A_2 exclusion system. When, however, the group reactions are quite typical the possibility of a man being the father in fact when he has been excluded by the A_1–A_2 system is exceedingly slight. The possibility of A_1 being mistaken for A_2 in rare cases cannot, however, be entirely ruled out, although it is very remote if the examination is properly conducted by agglutination *and* absorption tests, and typical reactions have been obtained. It is not safe at the present time to consider a paternity incompatible with the A_1–A_2 system as excluded with biological certainty; it is, however, justifiable to regard such incompatibility as *strong circumstantial evidence of non-paternity*.

Owing to the possibility of technical error, the diagnosis of group A_2B is less reliable than that of group A_2, although the diagnosis of group A_1B is quite as reliable as that of group A_1. If a paternity is incompatible with the A_1–A_2 system because one of the parties is of group A_2B (while no exclusion could have been made had this person been of group A_1B) *it is not justifiable at present to consider the paternity so improbable that a decisive importance may be attached to the blood grouping in such a case.*

MN SYSTEM

The material available here is already large and is steadily growing. Although the system has been widely investigated for ten years now, it was not until three years ago that the N_2 factor was discovered. This factor is extremely rare, and is characterized by an abnormal but inherited weakness of the N receptor; one has always to consider the possibility that it may escape detection with a resulting erroneous exclusion. This, however, only applies to certain of the parent-child combinations (exclusion types 4 and 6).

The remaining exclusions made by this system are not affected, as paternity would still be incompatible even if there were a concealed N_2 receptor in one of the parties. In these cases a *paternity incompatible with the MN system may be excluded with as great a degree of certainty as a biological method can give.*

List of Paternal Exclusions

All the possible exclusions are given in Tables II and III, Table II showing the combined exclusions by the ABO and A_1–A_2 systems, and Table III those by the MN and N_1–N_2 systems.

TABLE III.—*Paternal Exclusions by the MN and N_1–N_2 Systems.* (After Thomsen, 1936.)

Mother	Child	Father		
		MN System (old)		M–N_1–N_2 (new)
		Possible	Impossible	
M	M	M, MN	N	If the child is MN_2 the father may be NN_2 or possibly N_2N_2. Thus N cannot be excluded with certainty
M	MN	N, MN	M	M still excluded
N	N	N, MN	M	If the child is NN_2 the father may be MN_2, so that M cannot be excluded with certainty
N	MN	M, MN	N	N still excluded
MN	M	M, MN	N	If the child is MN_2 the father may be NN_2 or possibly N_2N_2. Thus N cannot be excluded with certainty
MN	N	N, MN	M	If the child is NN_2 the father may be MN_2, so that M cannot be excluded with certainty
MN	MN	All	None	Theoretically a N_2N_2 father may be excluded. This is of no practical significance
M	N	The mother may be MN_2, and the child may receive its N from the father. Thus all M men are excluded. If the father is MN_2 the child can be N_1N_2		
N	M	The mother may be NN_2, and the child must be MN_2. In this case the father must be M or MN. Thus all N men are excluded		

Summary

1. The value of each type of paternity exclusion has been discussed.

2. In most cases the possibility of error is that of an error in technique rather than a deviation from the genetic laws which govern the heredity of the group factors, and as such should be properly guarded against.

3. The appropriate reservations for each type of exclusion have been discussed.

I am greatly indebted to Professor Dr. Knud Sand and Dr. V. Friedenreich of the Universitets Retsmedicinske Institut, Copenhagen, for their valuable assistance in the preparation of this paper.

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The German Pathological Society will hold its congress at Frankfurt a.M. under the presidency of Professor H. Beitzke of Graz from September 16 to 18, when the chief subjects for discussion will be allergy, and degeneration and cancer. Further information can be obtained from the secretary, Professor G. B. Gruber, Planckstrasse 8, Göttingen.

TECHNIQUE OF CATARACT EXTRACTION DURING NARCOSIS*

BY

BASIL GRAVES

Operations on the interior of the adult eye are performed with the patient awake, particularly in the case of cataract extraction. This is because with the usual operative technique the co-operation of the patient is necessary to supplement the control of the position of the eye, and the congestion, vomiting, and other disturbances commonly associated with general anaesthesia entail risks to the eye. The mental strain on the average elderly person of consciously submitting to a cataract operation is considerably more than is realized. Medical thought is accustomed to the use of local anaesthesia, the patient remaining fully conscious, and to the extreme degree of unconsciousness of general anaesthesia. But attention has not been given to the attainment of a less extreme state of somnolence, in which, besides being given the usual local injection of novocain, the patient may also be put to sleep to a degree sufficient to abolish all consciousness of the proceedings. "Surgical narcosis" might be a suitable name for such an intermediate state.

The purpose of this article is to describe, first, a routine technique—which I have employed for a long time—for rendering the patient quietly unconscious during operations on the interior of the eye. The state of sleep lasts for some seven to fourteen hours after operation—a period in which pain is commonly experienced after the effect of the usual local anaesthetic has disappeared. The patients wake up as from a long normal sleep, with no pain in the eye and seldom with any unpleasant general sensations. Secondly, I propose to describe briefly a modification of the operative technique of cataract extraction, which meets these conditions of narcosis, adds safety to the orthodox method, and has the advantage that the patient can safely be propped up in bed on the next day and can sit out of bed usually on the third day instead of staying in bed for the customary seven days.

Elderly persons, especially women, after cataract operations may experience serious symptoms such as vomiting, flatulence, abdominal pain, and constipation, which are usually attributed to the absence of peristalsis due to lying on the back for many days. Delirium may follow cataract extraction done with the patient awake, as may urinary retention. If patients who have not had cataract operations lie flat for days they do not get the same, if any, distressing symptoms. In my experience these symptoms do not ensue if "surgical narcosis" has been employed, and it can therefore reasonably be suggested that they are connected with "mental shock" consequent on operations done on the eyes of elderly persons while conscious.

Orthodox Technique

The most important point in cataract extraction is that the surgeon should leave the face of the vitreous fluid intact. Even if the patient has reasonably good vision afterwards any loss of vitreous during or after the operation is a grave surgical disaster, due practically always to faulty technique. Prolapse of the iris is the most feared post-operative complication, since it necessitates a further and risky operation on a sensitive eye. The first case of prolapsed iris that I had in private practice was due to delirium coming on the day after extraction of the cataract. The patient in her violence ruptured the face of the vitreous, of which much escaped. This case turned my attention to devising methods of increased safety.

When the incision is made in cataract extraction the eye is usually steadied by fixation forceps which grip the friable conjunctiva either at W (Fig. 1) or at X, or at some point between. In either case the active co-operation of the patient is needed to control the eye and prevent the movement of the knife rolling it sideways if the grip is at W, or rolling it upwards if the grip is at X. Some operators insert a length of silk (R, Fig. 3) in the tendon of the superior rectus; this stabilizes the eye to some extent, but not adequately by itself. In the customary procedure the "puncture" (P, Fig. 1) and counter-puncture (P') are outside the limbus (L). The knife (K, Fig. 1) makes a "peripheral" incision cutting out close to the base of the iris so as to create a conjunctival flap (C, Fig. 2) beneath which the incision eventually heals. The

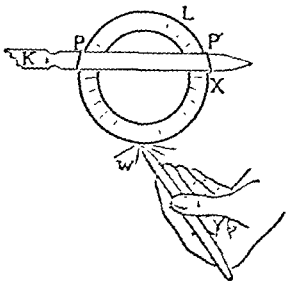


FIG. 1.

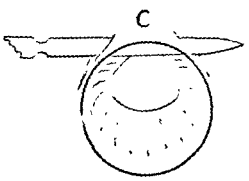


FIG. 2

peripheral position of the incision predisposes to prolapse of the iris, which is not prevented even if the conjunctiva is sutured, as is occasionally done. I prefer to make the incision mainly on the corneal side of the limbus away from the base of the iris.

Surgical Narcosis

In 1934 I used various recognized agents, including bromide and chloral hydrate and rectal paraldehyde; nembutal causes restlessness in some patients. In 1935, after consultation with Dr. R. J. Clausen, Dr. Maitland Scott, and Mr. L. Broster, I decided that rectal paraldehyde was reasonably satisfactory. Later I combined with this a hypodermic injection of omnopon, and the result was excellent. The amount of paraldehyde given—one drachm being dissolved in ten drachms of saline—is three-quarters to one drachm for each stone of the patient's weight, and the dose of omnopon should be one-thirtieth of a grain for every stone (*vide*:—Section of Anaesthetics of the Royal Society of Medicine: "Preliminary Medication in Anaesthetics," December 7, 1928: also "Premedication," *Journal*, October 17, 1931, p. 693, both by Stanley Rowbotham). Bromide is given by mouth in the preceding twenty-four hours. The paraldehyde is given by the rectum an hour before the operation; the omnopon is injected about half an hour before the operation. About three-quarters of an hour before operation some biniodide of mercury ("cust") ointment is placed beneath the eyelids. At the same time two small cotton-wool swabs, soaked respectively in 2 per cent. homatropine and adrenaline 1 in 1,000 (to produce full dilatation of the pupil) are inserted beneath the upper eyelid. The swabs and the ointment are renewed a quarter of an hour before operation, with an additional swab soaked in 1 per cent. cocaine. (I omit here the description of certain customary novocain and adrenaline injections of the eyelids, etc., besides nursing details of the preliminary preparation for narcosis, which is simple.) If less paraldehyde and omnopon is given, so that deep narcosis is not attained, then, despite semi-consciousness,

* Received June 8, 1937.

the patients afterwards deny having any memory of the operation.

Many of my cases have been dealt with in the nursing home of Sister E. E. Hughes, and Sister A. Bryant, formerly staff-nurse to the eye department of St. Bartholomew's Hospital. They have been impressed by the absence of post-operative mental and other distress in cases operated on under "surgical narcosis"—an opinion more convincing when expressed by the nursing staff than by a surgeon who visits the patients only briefly.

Modified Technique of Operation

The patient being soundly asleep, the conjunctiva is incised along WX (Fig. 3) and is retracted to GH. The steadying suture, R, is then inserted in the superior rectus tendon. With a "broad needle" (N, Fig. 3) I then pierce a small tunnel, T, in the surface of the "cleaned" sclera. Perforation of the sclera has been done daily for decades in inserting the stitches in operations for squint. This tunnel, instead of being horizontal, may be vertical (T^1, Fig 4), a special broad needle (bent on the flat at K) being used. In the drawings here reproduced the tunnel has been drawn arbitrarily either vertical or horizontal. The relative merits of each cannot be described here; on the whole the vertical (Fig. 4) is preferable.

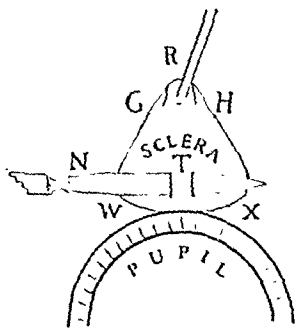


FIG. 3.

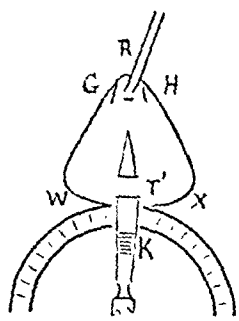
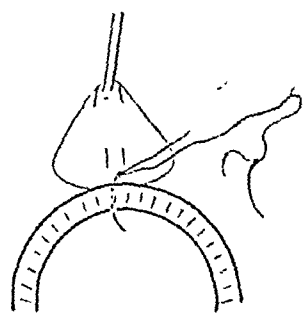


FIG. 4.


FIG. 5.

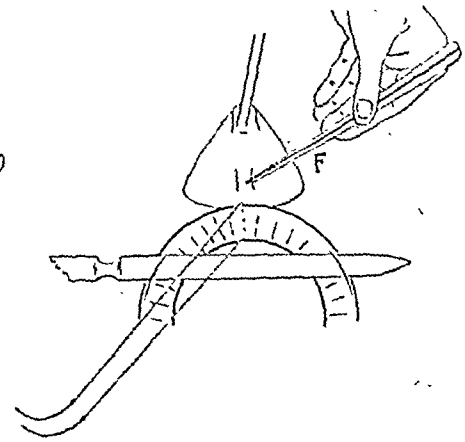


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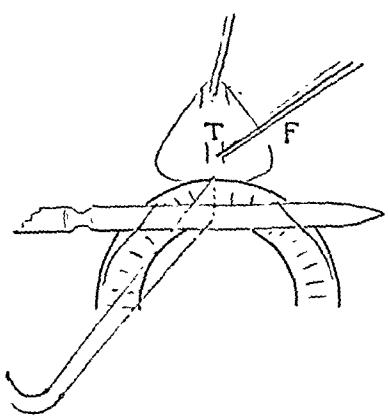


FIG. 7.

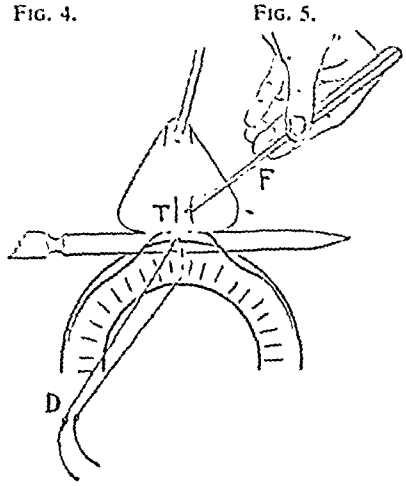


FIG. 8.

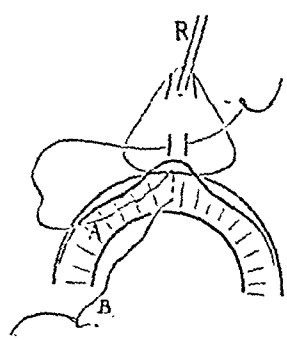


FIG. 9.

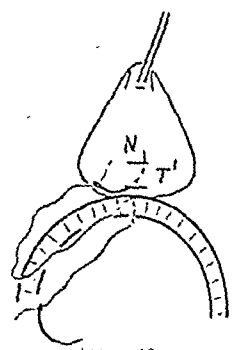
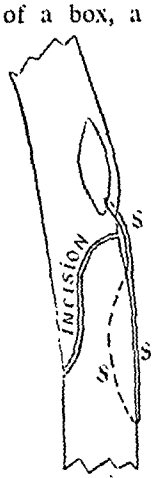


FIG. 10.

One of two fine needles (Fig. 5) on a piece of Wiess's finest black silk is then inserted through the middle layers of the cornea, without penetrating to the interior of the eye. The precise manner of inserting this corneal suture in relation to the tunnel, T, depends on the way chosen to tie it at the end of the operation. The assistant then holds the steadying superior rectus stitch (R, Fig. 3) with one hand and this fine corneal stitch with the other. In making the incision to open the eye the operator secures an absolute yet most delicately variable control of the eye—from what is mechanically the correct point of application—by gripping the edge of the cover of the tunnel, T, with a pair of fine-pointed forceps (F, Figs. 6, 7, 8).

The knife, which has been dipped in hot vaseline, is passed slowly upwards behind the corneal stitch (Figs. 6, 7, 8) and, after a deliberate pause to select the site, is slowly brought out between this stitch (D, Fig. 7) and the tunnel, T. One end of the corneal suture is then threaded through the tunnel (Fig. 9). Alternatively, the needle (N, Fig. 10) can have been placed in the tunnel before the incision is made, after which it is drawn completely through. (If it is drawn right through before this there is risk of cutting the stitch as the knife emerges.) By pulling on the parts A and B of this thread (Fig. 9) the incised upper part of the cornea is lifted up like the lid of a box, a piece of the lens capsule is removed with capsule forceps, and the cataractous nucleus is tilted forward and upward by the lightest of pressure on the lower part of the cornea and is then picked out on the point of a cystitome.



S: STITCH
FIG. 11.

The dilated iris is not touched throughout the operation; no iridectomy is needed. The fine suture is then pulled fully through the tunnel and tied, after which it is passed through the conjunctiva and tied again. Fig. 9, in which the conjunctiva is omitted, shows sectionally how the suture does not enter the interior of the eye. Drops of atropine, 1 per cent., and argyrol, 15 per cent., are finally instilled.

The patient sleeps on for seven to fourteen hours and sits up in bed the next day, rested and free from pain, and usually can sit out of bed on the third day instead of the customary seventh. In trephining for glaucoma I put the patient to sleep in a

similar way. The superior rectus stitch gives adequate steadying of the globe in trephining, and abolishes any need of the patient's co-operation.

Conclusion

I have given the procedures mentioned here a long and detailed trial. They will be described more fully in a publication I have in preparation. I think that eventually the custom of patients walking into an operating theatre and consciously co-operating in the performance of an operation on their own eye may come to be regarded as anomalous. Apart from the absence of discomfort and distress in the days following the operation, and the benefit to the patient of being asleep during it, the advantage it affords to the operator is such that I believe no operator who had accustomed himself to the method I have described would care to resume cataract-extraction, or glaucoma-trephining, on patients when they were not thus asleep. Nervous patients can be kept asleep for still longer by the administration of more hypnotics later. The eye is the only transparent part of the surface of the body. After an operation for cataract, expert examination can at any time during the rest of the patient's life provide an accurate estimate of the competence of the technique employed by any operator. It follows that theoretical objections to innovations can always be met with the proposal that all cases be submitted after operation to impartial expert examination.

Clinical Memoranda

Bilateral Spontaneous Pneumothorax

In view of the article by Dr. R. A. Young (1936) in the *British Medical Journal*, and a further communication by Herbert L. Settle (1936), it is hoped that the following case will be of interest. Although I did not see this patient the full notes were passed to me for perusal, and from them the following extract was made.

At Jerusalem Sergeant B, aged 34, a quiet, temperate, and apparently healthy young man, rose from his bed before réveillé on November 11, 1936, and complained to his comrades of a pain "below the chest." He then went for a short walk, and on his return said he felt better. He ate a usual breakfast, but at 8.30 a.m. he went back to the sergeants' mess and ordered a lemonade, which he drank quickly, saying afterwards, "That's better." Later in the morning, while in the orderly room, he suddenly fell face forward to the ground. He was removed to hospital immediately, but on examination was found to be dead. Prior to this catastrophe there had been no undue strain from laughing, coughing, sneezing, shouting orders, or from exercise such as running or mounting stairs. There was no history of injury to the chest wall. At the post-mortem examination both lungs were found to be completely collapsed. The lungs were of normal texture, and there was no macroscopic evidence of tuberculous, neoplastic, or other disease. The pleural surfaces were normal in appearance over the whole of the lungs and chest wall. The pleural cavities contained no exudate. There was no evidence of an opening on the lung surfaces when water from a tap was forced through the main bronchi. The heart was in diastole, with well-developed and normal muscle. In the pericardial cavity there was no excess of fluid and no sign of inflammation. The brain and abdominal viscera appeared healthy and free from tuberculosis. The cause of this sergeant's sudden decease was considered to be due to spontaneous bilateral pneumothorax.

This case appears, therefore, to belong to the class described by Dr. Young in his paper as pneumothorax in the apparently healthy, or pneumothorax simplex.

From the history it is most probable that it was the occurrence of a sudden pneumothorax on one side which caused him to wake up before réveillé complaining of "pain below the chest," by which he meant, presumably, the upper abdomen. Settle's patient, too, complained of pain in the same region. That the soldier did not feel quite comfortable from that time until 8.30 a.m. is evidenced by his return to the sergeants' mess for a drink; and, from what he said, the fizz of the lemonade temporarily eased his discomfort. It is further presumed that somewhat later, when he was in the orderly room, pneumothorax occurred on the other side, thus causing the inevitable and immediately fatal result.

My thanks are due to Colonel G. H. Richard, Deputy Director of Medical Services, British Forces in Egypt, and to Colonel R. W. D. Leslie, O.B.E., late Deputy Director of Medical Services, Palestine, for permission to submit these notes for publication.

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Case of Herpes Zoster with Facial Paralysis

The association of common facial palsy with herpes zoster of the neck is rare, and is of interest in view of the controversy regarding the causative organism and its mode of transmission in the latter disease.

The patient, a rather anaemic male aged 62, complained on April 8 of pain in the left occipital region, below the ear, and over the sternomastoid area of the left side of the neck. The pain continued for three days, and was described as being like a neuralgia. He had been employed as a night watchman on a road-building scheme, being exposed for hours at a stretch to cold winds. Three days later an erythema appeared on the left side of the neck, and on examination some hours after I found a typical vesicular rash of herpes zoster over the sternomastoid region on the left side, together with some adenitis in the posterior triangle. The cutaneous area affected by the vesicles suggested involvement of the second cervical nerve.

On the following morning I saw him again. He was now tender below the left ramus of the jaw, and complained of his left eye "running." Examination of the face showed evidence of a left-sided common facial palsy with the mouth drawn to the right side, inability to close the left eye, epiphora, and escape of fluid after drinking from the left corner of the mouth. No other cranial nerve was found to be affected. His temperature was 99.2° F., and pulse 88. With warmth and rest in bed the facial palsy soon improved, and, with the herpes, had disappeared in a fortnight.

The organism responsible for herpes zoster is a filterable virus, the infection passing outwards along the sensory nerve from the corresponding posterior root ganglion. Degenerative changes may spread upwards into the posterior columns of the cord and downwards along the peripheral nerves. On rare occasions the infection has spread horizontally in the spinal cord from the posterior to the anterior horn, resulting in a motor paralysis. The temporary paralysis of the seventh cranial nerve may be explained in this way, the only other solution occurring to me being that the two simultaneous conditions of palsy and herpes were separate entities, the cold winds acting as a common exciting factor.

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Penistone.

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Reviews

ENDOCRINOLOGY

The Endocrines in Theory and Practice. Articles republished from the *British Medical Journal.* (Pp. 278. 9s. net.) London: H. K. Lewis and Co. 1937.

It was a wise move on the part of the *British Medical Journal* to invite a series of articles on endocrinology and to republish them in book form. One's first impulse is to congratulate the Editor on planning the series and choosing the contributors, for the success of the enterprise is largely due to his generalship. It is curious that good endocrinologists have written bad books when left to their own devices and that the two best books on endocrinology have been produced when they have been led in editorial chains. Both these books were published by medical associations because important advances have been made and difficulty is experienced by the ordinary medical man in separating the wheat from the tares so assiduously sown by those whose interest in endocrinology is commercial. The American Medical Association's symposium on *Glandular Physiology and Therapy* (1935) was an amazing achievement, which it is fair to say no other country in the world could have duplicated, and it at once became the research student's bible, but it is rather heavy going for the ordinary practitioner. The *British Medical Journal's* book on the *Endocrines in Theory and Practice* is built on simpler lines and fulfils the task of bridging the gap between theory and practice. For, as Sir Humphry Rolleston indicates in his chapter on the history of endocrinology (curiously placed at the end of the volume), the output of scientific investigation has been enormous, and practical application of this new knowledge has not had time to keep abreast.

Much of the work of the past has been discredited because the extracts used were utterly powerless, excessively weak, badly contaminated, or given in vehicles or channels through which they were imperfectly absorbed or too rapidly excreted. Effects differ in different species, and there is therefore an immense field for clinical research, in which the only, but at the same time the indispensable, apparatus is a critical outlook and knowledge of the pitfalls of therapeutic trials in man. Powerful extracts are now available from almost all the endocrine glands, and in many cases the chemical constitution and formulae are known. Wherever possible, as suggested by Professor E. C. Dodds, dosage should be expressed in milligrammes of crystalline material, for the units derived from small animals such as the mouse and the rat need multiplying to astronomical figures to produce effects in man, and the practitioner, unconsciously influenced by memories of units of antitoxin and insulin, may be afraid to give adequate amounts. This may be one reason why the harvest of the new knowledge has so far been disappointing, and in the field of the sex hormones we can point as yet to little more than the relief of menopausal symptoms by oestrin and the acceleration of imperfect migration of the testes by gonadotropic hormone from the pituitary or the urine of pregnancy.

Many readers distrust popular reviews as they so often degenerate to the level of favourite prescriptions and unjustified generalizations. The present volume is free from such faults: the physiology of the glands is clearly described and therapeutic advice is based on experiment. The pituitary gland is described first, as befits its dominant role, and then follow accounts of the thyroid, adrenals, gonads, thymus, pineal, and parathyroid glands, with separate chapters on menstruation, pregnancy, and the menopause. It is invidious to cite names where all are good, but special mention must be made of the introductory chapter in which Sir W. Langdon-Brown discusses the present position of endocrinology. He points out how the endocrine glands have come under the control of the diencephalo-pituitary system and are linked with the central nervous system and the autonomic. The hormones themselves fall into two groups: the first, of complex chemistry, are formed by the pituitary gland, which uses them to stimulate or inhibit the secretion of the second, chemically simpler grade, by the other endocrine glands. The latter have affinities with the substances by which nervous impulses are transmitted, with the stimulants to the organization of the embryo, and with certain carcinogenic chemicals. We can now clearly see a future in which the halting language of infant science is discarded and we no longer speak of vitamins, hormones, or vagus-stuff, but of ascorbic acid, thyroxin, acetylcholine, and other equally well-defined substances.

L. J. WITTS.

THE PROBLEM OF DRUG ADDICTION

Drug Addiction. By E. W. Adams, O.B.E., M.D. (Pp. 174; 8s. 6d. net.) London: Oxford University Press, Humphrey Milford. 1937.

Drug addiction is a many-sided problem, and it is rare to find the subject dealt with as a whole, because few writers have knowledge of all its aspects, political, social, medical, and pharmacological. Dr. E. W. Adams has, however, very exceptional knowledge and experience, because not only is he a pharmacologist, but he has also had under the Ministry of Health full acquaintance with the administrative features of the problem. Hence his book, though short, deals with all the aspects indicated. With regard to the range of drugs discussed it may be mentioned that the author does not touch on alcoholism and devotes his attention especially to the "white drug"—namely, morphine, heroin, and cocaine. So far as these are concerned he gives a very full account of the world problem as it exists to-day. The only aspect he leaves alone is the commercial one. The manner in which the drug industry has catered for the vices of mankind is a lurid story, which probably has been omitted for reasons of prudence.

Dr. Adams gives a brief outline of the history of addiction to opium, to cocaine, and to morphine and its derivatives. The chapter on epidemiology is very clear and interesting. In this respect Great Britain occupies an exceptional position, since the number of addicts is estimated at less than 1,000, whereas the estimated figures for the U.S.A. and Canada are 100,000 and 8,000 respectively. One of the primary facts that British writers must remember in discussing the importance of drug addiction is that our country is exceptionally lucky. Aetiology is fully discussed; the association between crime and addiction is very clear in the United States, and the problem is whether addiction should be looked upon as the cause or the consequence of criminal tendencies. Dr. Adams suggests that there are at least three classes of addicts: accidental, natural, and criminal. The first class comprises normal persons who have accidentally become habituated to drugs. The second class are people of inadequate personality who seek in drugs an escape from reality. The third class are the fundamentally vicious type.

The pharmacological problems of the mechanism by which tolerance and addiction to drugs are established are dealt with fully, and so also are the methods of treatment. It may be said that, in spite of the intensive research that has been carried out during the last decade, there is as yet no satisfactory explanation of the pharmacological basis of drug tolerance and addiction. Hence methods of treatment are still empirical. With regard to therapeutic measures the author emphasizes the fact that it is useless to break addiction unless this is followed by some process of rehabilitation, since otherwise relapse nearly always occurs. Drug addiction, as we have said, presents a protean problem of which it is extraordinarily difficult to give a brief and yet comprehensive survey. Dr. Adams must be congratulated on having produced a well-balanced and readable account of this intricate subject.

A MEDICO-LEGAL VOCABULARY

A Dictionary of Medico-Legal Terms. For Criminal Lawyers and Police Officers. By Albert Crew and K. W. Aylwin Gibson, M.R.C.S., L.R.C.P. (Pp. 80. 5s. net.) London: Sir Isaac Pitman and Sons, Ltd. 1937.

One of the barriers which prevent the medical and legal professions from understanding one another is language. Medical men think in a rich and complicated technicology which means little or nothing to laymen. They are so used to this dialect that they forget that there is anything extraordinary about it. Experienced medical witnesses know how to make themselves clear to judges, counsel, and jury, but witnesses of less experience cannot escape from the bounds of their professional vocabulary, either in giving oral evidence or in writing reports. Moreover, medicine permeates the practice of law over a much wider field than most medical practitioners realize. A solicitor or barrister who handles personal injury cases, workmen's compensation cases, or probate actions, to mention only a few, often has to understand medical reports or proofs. This small dictionary will fill a great need, for it contains most of the ordinary medical terms which are met with, at any rate in criminal practice, and also most legal terms the meaning of which ought to be known by medical witnesses. Mr. Crew is a prominent members of the Criminal Bar and Dr. Gibson has long experience of the law; between them they have compiled an accurate and clearly intelligible series of definitions. The preface contains a caution to medical witnesses to use intelligible language, and the authors quote the classic instance in which a witness defined a black eye in terms of contusion, ecchymosis, and abrasion. The reviewer was recently taken to task for using this very instance, but maintains that it is still the best example of the misuse of technical jargon. The author's support for this view is reassuring.

LECTURES ON FEVERS

Maladies Infectieuses (Deuxieme Serie). Leçons Cliniques Professees a l'Hôpital Claude-Bernard. By A. Lemierre. (Pp. 310. 55 fr.) Paris: Masson et Cie. 1937.

In this second series of clinical lectures on infectious diseases—the first was reviewed in these columns two years ago (1935, 2, 15)—Professor Lemierre deals with a number of cases, most of which found their way into the Claude-Bernard Hospital, a fever hospital in Paris. Although every case receives exhaustive attention in respect of aetiology, clinical symptoms, pathology, diagnosis, and treatment, yet each has been primarily selected for some special reason: thus two cases of Hodgkin's disease because they were mistaken for undulant fever; a case of Weil's disease because the jaundice was wanting; several cases of ulcerative pharyngo-stomatitis (misdiagnosed as diphtheria) on account of their causes (the administration of salts of mercury and bismuth in unsuitable patients, the eruption of teeth, and leukaemia). One case of kala-azar and a few of malaria are introduced, partly as a warning that these diseases are indigenous in certain districts of France, partly because of difficulties of diagnosis. A particularly interesting lecture is that on a case of a haemorrhagic exanthem due to novarsenobenzol, suspected of being haemorrhagic small-pox. The rashes caused by this drug may simulate those of certain of the infectious diseases, and Professor Lemierre discusses Milian's hypothesis of biotropism, according to which certain drugs have the power of bringing into action any micro-organisms which happen to be latent in the body, so that these drug rashes are really evidence of attacks of such diseases as scarlet fever and measles. This hypothesis, however, has not met with general acceptance. The remaining lectures are devoted chiefly to septicaemia due to organisms rarely found in that condition, and to unusual cases of erysipelas.

This volume affords highly interesting and instructive reading, valuable both to the specialist and to the general practitioner

CHRONIC RESPIRATORY DISEASES

The Diagnosis and Treatment of Chronic Diseases of the Respiratory Tract, with Especial Reference to the Lesions of the Trachea, Bronchi, Lungs, Pleura, and Diaphragm. By Elmer H. Funk, M.D. Revised by Burgess Gordon, M.D. (Pp. 618; 182 figures. 40s. net.) New York and London: H. Milford, Oxford University Press. 1936.

This book has been produced on a lavish scale, and is therefore published at a price which puts it out of the reach of many for whom it is intended—in this country at all events. The actual contents do not justify either the lavishness or the price. There is evidence of acute clinical observation, and there is a due appreciation of the relative importance of various factors in diagnosis and treatment; but the style is heavy, and the arrangement of the subject-matter is confusing and shows lack of proportion. Indeed at times the book suggests a collection of essays rather than a textbook. Thus special chapters are devoted to curiosities like fibrinous bronchitis, broncholithiasis, chylothorax, and hernia of the lung, subjects of no practical importance to the general practitioner, for whom presumably the book was written, since minute details of procedures like strapping the chest are given, and the use of expectorants and similar drugs is fully discussed. The summary handling of some subjects—for instance, twenty lines are devoted to the pathogenesis of pulmonary tuberculosis—is not merely uninformative but may be misleading. Several inaccuracies and omissions can be pointed out. Phrenic avulsion is discussed in four pages, but the "crush" operation is not mentioned; atelectasis and collapse are considered throughout as synonymous; and we cannot agree that congenital bronchiectasis is rare and of interest only to pathologists, or that only 5 per cent. can benefit by supplementing pneumothorax with pneumolysis. The author's close association with bronchoscopic clinics is shown by constant reference to the value of this diagnostic and therapeutic measure. In fact in discussing the lipiodol investigation of the lungs no details of the other methods of introducing lipiodol are given, such as the cricothyroid and transglottic routes—exclusively employed here. On the other hand several subjects, often ignored elsewhere, are discussed in this book in a practical and concise manner—for instance, heliotherapy in pulmonary

tuberculosis. Many useful skiagrams are reproduced in the text.

The scope of the book is not broad enough for the specialist in chest diseases; the points we have indicated above show that it is too wide for the general practitioner.

FLORENCE NIGHTINGALE

Florence Nightingale. The Woman and the Legend. By Margaret Goldsmith. (Pp. 320. 15s. net.) London: Hodder and Stoughton. 1937

Here we have a further contribution to the literature on this remarkable Victorian, of whom thirteen other biographies are cited in the list appended to the present volume. The author gives a balanced account of Miss Nightingale's life and work, successfully resisting the temptation to be carried away by admiration and sympathy for her heroine, and giving adequate, though not undue, attention to certain defects in her character. Naturally there is much in this book to interest medical readers. The appalling conditions existing in the military hospital at Scutari, where Miss Nightingale arrived a few days after the Battle of Balaclava, are described in some detail. The unfortunate patients, many of whom were suffering from cholera and dysentery, were fed entirely upon meat; their quarters were overcrowded, ill ventilated, and filthy; the sanitary arrangements were at one time so inadequate that only twenty chamber pots were available for the use of two thousand men. The story of how Florence Nightingale, hampered at every turn by the intricacies of red tape and stubbornly opposed by the majority of the Army medical authorities, produced order out of chaos, ameliorated the lot of the wounded, and within six months reduced the death rate at the hospital by nearly 50 per cent., is an epic of determined perseverance and a triumph of organization.

In the concluding chapters the author does not unravel as clearly as one could wish all the threads of Miss Nightingale's later work. Apart from this criticism her book may be commended as an excellent biography of one whose life exerted an immense influence on hospital management and the nursing profession.

Notes on Books

The monograph by Dr. MARCEL GERVOIS, entitled *Le Bacille de Type Bovin dans la Tuberculose Humaine* (Lille, L. Daniel) consists entirely of a review of existing knowledge. The author is appalled by the general ignorance and apathy hitherto manifested in so many countries in relation to the problem of tuberculosis of bovine origin. At a time when there seems at last to be some evidence of awakening of the public conscience towards the hygiene of milk, he thinks it opportune to present a summary of the evidence on which our case against the bovine tubercle bacillus, and particularly milk-borne tuberculosis, is based. The monograph itself consists largely of tables reviewing the findings of different workers in different countries during the past fifty years. Some idea of the work involved may be gathered from the fact that the results of no fewer than 17,045 examinations of tuberculous material for determining the type of infecting bacillus have been collected, and that the table of figures giving the frequency of tubercle bacilli in milk covers eighteen pages. Even those who are well acquainted with the subject material will be astonished at the massiveness of the documentation which the author has been able to build up against the bovine tubercle bacillus. His general conclusion that pasteurization of milk affords the only immediate practical and efficacious method of combating tuberculosis of bovine origin is inescapable.

The realization that despite the great reduction in the infantile mortality rate in the last fifty years the neonatal death rate has not followed this downward path has led to an increased interest in the whole problem of the very young infant. In *Diseases of the Newborn* (H. Milford, Oxford Press, 27s. 6d.) Dr. ABRAHAM TOW has performed a valuable service by not only collecting the latest views in the literature, but also adding observation of his own, a particularly useful feature when he is discussing controversial matter. The subject is well covered from the preliminary considerations of physiological principles and feeding to more detailed discussions of the disorders commonly met with. The section on the premature infant is particularly good in its presentation of modern views, though it may be noted that the incubator is now being discarded in many centres. The chapter on birth injuries is somewhat uneven, and there is no indication that intracranial disorders (for example, cerebral oedema) other than actual haemorrhage may occur: Cruickshank's classical monograph on this has apparently not been consulted. This, however, is the only serious omission found, and the book may be confidently recommended to all those concerned in the care of the newborn infant.

Biological Time, by LECOMTE DU NOÜY, is a short volume in which this problem is dealt with in an original manner. The author, who is a distinguished physical chemist, assisted Dr. Alexis Carrel in his work during the war in Hospital 21 at Compiègne. The systematic study of the healing of wounds which they carried through showed that the process proceeded at a rate which could be expressed by mathematical formulae. They also found that the rate of healing was a function of the age of the patient. Later experiments with tissue cultures showed that, when these were grown in serum, the rate of division was a function of the age of the animal from which the serum was taken. From these and similar experiments the author deduces the idea of a biological time which alters with age. Such a conception is of course familiar to biologists in general and clinicians in particular. One of the most obvious facts in clinical medicine is that a diseased infant changes its condition far more rapidly than does an adult. From these familiar facts the author makes a variety of interesting philosophical deductions concerning the nature of time. His book is published by Methuen and Co. at 7s. 6d.

The Proceedings of the second International Medical Week in Switzerland have now been published. This congress was held at Lucerne in the first week in September last year. The majority of the papers read then appear in German, but some are in French, including the opening speech by Dr. H. Carriere, director of the public health service in Berne. The main subjects under discussion related to diseases of childhood, hormones and vitamins, and affections of the circulation and respiration, but various papers on other medical subjects are incorporated in this report, which is produced by the *Journal Suisse de Médecine* and published by Benno Schwabe and Co., Basle.

Dr. JAIME MENDOZA'S *Notes of a Doctor* (Sucre, Escuela Tifografica Salesiana) are divided into two unequal parts. The first and larger part, entitled "Essays," deals mainly with the medical aspects of Bolivia, especially as regards the incidence of tuberculosis, congenital syphilis, and malaria in that country; while the second part is devoted to psychiatry, the history of the Medical Institute at Sucre, founded in 1892, and infant welfare.

Dr. ROBERT HUTCHISON'S wise little book on the *Elements of Medical Treatment*, which originally appeared rather more than ten years ago, has now come out in a third edition, and the author has made some minor changes and additions to bring his material abreast of present practice. The publishers are John Wright and Sons; the price is 5s.

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THE WORK OF THE MINISTRY OF HEALTH

The Ministry of Health is not merely concerned with health, a fact which has to be noted in relation to the financial statistics contained in its annual report[1] and widely quoted. Much local government activity not directly affecting the health of the people comes under its purview, especially if capital expenditure is involved, and the block grant it administers covers many services. It is therefore difficult to discover what the country spends on the preservation and restoration of health out of moneys raised by central and local taxation. In 1936–7 central departmental administration cost £2,219,985. On national health insurance £34,200,000 was expended out of a revenue totalling £37,400,000, which contained an Exchequer grant of £5,925,000. The outlay included £6,868,900 paid to insurance practitioners in capitation fees, £204,000 for mileage, £190,000 for medicines and appliances supplied or dispensed by them, and sundry smaller sums for medical purposes. For objects, therefore, which are directly intended to promote health, rather more than thirty-six millions were spent through central channels in addition to grants to local authorities. On what is called public health local authorities disbursed £44,200,000 net (which included expenditure falling on Government grants), but this covered items like baths, washhouses, parks, and public conveniences, which do not fall within the province of public health unless the term is used in a very broad sense; while the cost of the school medical service and the very large organization for the care of the sick under the Poor Law are not separately distinguished. The treatment of mental disease and deficiency cost about £11,800,000, and housing £16,800,000 net, towards which grants amounting to more than fourteen millions were received from the Ministry. If the very substantial proportion of public assistance expenditure (totalling just short of £40,000,000) attributable to domiciliary and institutional care of the sick were added the local cost of sickness and the preservation of health might be estimated at about £100,000,000.

[1] Ministry of Health, Eighteenth Annual Report, 1936–7. H.M. Stationery Office, Cmd. 5516. 1937. (5s.)

Figures of this order, while falling far short of the whole cost of what are called the social services, naturally impel the Minister to prove that they are balanced by returns in the form of a healthier and fuller life for the people. The standardized death rate has fallen from 13.0 to 9.2 per 1,000 since the Ministry was constituted in 1919, the infant mortality per 1,000 live births from 89 to 59. Even the maternal mortality rate was unusually low at 3.81 per 1,000 live births. The provision of 3,000,000 new and decent houses, it is stated, "is probably the greatest contribution which this generation has made to better health." Since 1901–10 the standardized mortality from pulmonary tuberculosis has been more than halved, while the rate for the non-pulmonary form is now actually little more than a quarter of what it was then. Emphasis is laid on the new service of midwives provided under the Midwives Act, 1936, and on the expectation of an improved maternity service as the result of the Ministry's and the local authorities' reactions to the recently issued report on an Investigation into Maternal Mortality. It is pointed out that developments in public health and social services are rarely dramatic in their coming. Advances are made, gaps filled up, machinery overhauled, and salients smoothed. The Minister is justly pleased with the general effect, and is determined to promote a campaign of public education extending over six months of the coming winter, designed to induce the public to make fuller use of the public health services. But there are serious gaps remaining to be filled and some salients from which a retirement might possibly be contemplated. Extension of medical benefit requires to be carried much further than the "under sixteens," and new types of provision of a specialist character for insured persons are rather urgently required. The whole question of the relation of the clinical services of local authorities to insurance and private practice needs serious consideration. The proposal to amend the rules for midwives so as to establish a service of semi-specialist obstetricians is a bad form of the advance by capturing salients, since it does nothing to bring even these elect into ante-natal contact with the women they may be summoned to confine. The Ministry's regard for the continuity of medical care of the sick poor through local panels of practitioners has been lukewarm; nor does it recognize as of public health importance the public medical services organized by the profession. In a field more remote from medical practice, the anomaly that such records of sickness as insurance provides are buried in the archives of friendly and approved societies ought to be faced after a quarter of a century of its persistence. The dissatisfaction, too,

which younger members of the public health service freely express as to the existing machinery for filling vacancies in that service deserves notice.

The medical profession, through the British Medical Association, has fostered and will continue to support efforts in behalf of the public health. It welcomes the evidence this report affords of the general soundness of the measures which have been taken. Advance by salients and the filling of gaps are good tactics, but the Association believes that they should be part of a carefully thought-out strategic plan, a plan in the preparation of which it is ready to help, in conference both with the Ministry and with the local authorities, who are shouldering health responsibilities in the exercise of which they would be wise to consider advice from every well-informed quarter.

TOXOPLASMA AND PROBLEMS OF IMMUNITY

The subject of the toxoplasma is hardly one with which the majority of medical men are familiar. Yet it is not unimportant, for these parasites occur quite commonly as latent infections in several experimental animals—rabbit, guinea-pig, mouse—introducing a complication in transmission experiments; and they have occasionally been reported as causing disease in man. It is true that most of these reports have been unconvincing, but Bland's evidence[1] that toxoplasma are the cause of glandular fever cannot be so lightly dismissed and certainly calls for further investigation. Toxoplasma are small oval or pyriform parasites about 6 μ × 3 μ in size, with definite nucleus and protozoan appearance. They have been described in a number of species of birds, including the sparrow, *Passer domesticus*, and have been observed in the rabbit in Brazil by Splendore[2] and by Nicolle and Manceaux[3] in the African gondi, a small mammal of the desert. As already indicated, their occurrence in laboratory animals has been noted by several workers, some of whom have made these parasites a subject of special study (Levaditi *et al.*[4]). Despite this the taxonomic position of toxoplasma remains obscure, and, apart from saying that they are intracellular parasites most commonly found in the liver and spleen and that they can multiply by longitudinal division, not very much is known.

The most recent addition to the literature of this subject is a short article by A. B. Sabin and P. K. Olitsky.[5] These workers encountered toxoplasma in the course of their investigations on viruses, and, struck by the fact that many of the problems presented by the study of these highly organized parasites are very similar to those met with in the investigation of filterable viruses, they decided to study toxoplasma more closely. Perhaps their most interesting observations and comments concern the question of immunity to these parasites. They observed, as did Bland, that the inoculated monkey develops a febrile not-fatal illness, recovery from which is associated with immunity to reinfection. They further noted the presence of neutralizing antibody in the blood, the test for which consisted of making mixtures of serum and a suspension of toxoplasm-containing tissue and injecting it intracerebrally or intraperitoneally into mice or intradermally into rabbits. It will be recalled that a year or two back Sabin[6] published a series of papers in which he claimed to show that virus and neutralizing antibody did not unite *in vitro*, and concluded that the function of neutralizing antibody was not to unite with the virus but with the susceptible tissue cells, which it protected in so doing. He further suggested that the antigen responsible for the production of neutralizing antibody was not a component antigen of the virus but the product of the tissues of the infected host. According to Sabin the mechanisms of immunity to a virus and to a bacterium differed fundamentally. This view is now supported by experiments made with toxoplasma. Sabin and Olitsky find that in neutral mixtures of immune serum and toxoplasma the parasites undergo no agglutination or lysis even after several hours' incubation, and that the toxoplasma recovered from such mixtures by centrifugation and freed from serum are fully infective. They further draw attention to the solid immunity which may be found in recovered rabbits, despite the fact that little or no neutralizing antibody is demonstrable in their serum, an immunity which they consider to be solely an affair of the tissues.

It may be that a true tissue immunity unassociated with antibody does occur. Possibly the immunity to the virus of poliomyelitis may be of this nature, and the "interference phenomenon" demonstrated by Salaman[7] in the case of the X virus of potato and by Findlay and MacCallum[8] with yellow fever virus is probably an example of a tissue immunity. But the mere inability to demonstrate free neutralizing antibody in the blood is not sufficient reason for assuming the existence of a pure tissue immunity. And as far as the union of virus and neutralizing antibody *in vitro* is concerned might it not be that an optimum balance between antigen and antibody was necessary for the demonstration of this union? This

[1] *Brit. J. exp. Path.*, 1931, 12, 311.
[2] *Rev. Soc. sc. São Paulo*, 1908, 3, 10.
[3] *Arch. Inst. Pasteur Tunis*, 1909, 2, 97.
[4] *Ann. Inst. Pasteur*, 1929, 43, 673.
[5] *Science*, 1937, 85, 336.
[6] *Brit. J. exp. Path.*, 1935, 16, 70, 84, 158, 169.
[7] *Nature*, 1933, 131, 468.
[8] *J. Path. Bact.*, 1937, 44, 405.

emerges clearly from the experiments of M. H. Salaman,[9] which demonstrate that union between vaccinia virus and its neutralizing antibody does occur *in vitro*, but that this might easily be missed unless the correct absorbing dose of antigen were used. Furthermore, it would seem wise before drawing comparisons between the action of protective antibody on viruses and on bacteria to make quite sure what really does take place in the latter case, for recent work by Enders and Shaffer[10] has shown that what some have thought to be phenomena peculiar to viruses and their antisera can be demonstrated equally well with Type III pneumococcus and its antiserum.

A CIRCULAR TO PREFECTS

The establishment of a co-ordinated scheme of health government in a new country where the ground is unencumbered by relics of any previous ventures may be a comparatively simple task. But where existing organizations of long standing require preliminary absorption or extinction the sure founding of a new system is not so easy. Each successive need may have been met in the past by legislative or other changes, each good enough in its day and still of some value, but on a general view revealing much inequality of distribution, some areas enjoying an embarrassment of service while others are left untended. In any well-governed country which can look back to a historic past the natural tendency is to give co-ordination a trial before resorting to more drastic measures. This has been evident in France lately, when the Minister of Health issued a Circular to Prefects on the co-ordination of services and institutions. He had observed, despite remonstrances by his predecessors in office, a tendency in too many departments of the country to isolated action by hospital boards, relief agencies, and others. His problem was how to bring these various bodies into touch with one another. He resolved to use the financial lever, and accordingly issued his circular announcing that there would be no more grants in aid other than to services affiliated to the official social hygiene bureau of the area, which would thus co-ordinate all their activities. In cases where this could not be done for any reason the Prefect was to appoint without delay a local co-ordinating committee for the same purpose.

The circular is of interest not only as an administrative instrument but also on account of an article by the Minister, in collaboration with the head of a department, which serves as an introduction to the circular as printed in the *Revue d'Hygiène*.[11] In this paper the Minister explores the fundamentals of communal health control. The essential conflict of interest between the individual and the community, he says, has been exacerbated by repressive sanitary legislation, but it is the aim of hygiene to restrain anti-social inclinations by ministering to the physical, mental, and social diseases of the people. In all public health work he urges the importance of the social outlook. The medical officer should have experience of family practice, which gives social insight. The health visitor should be fitted for both hygienic and social duties. The welfare centre can never effectively safeguard the health of the persons who frequent it unless it can extend its influence into their homes. Domestic hygiene and social service are inseparably intertwined, and the centre itself should work in liaison with the public assistance authority. In the field of mental prophylaxis, while recognizing that good may result from early treatment in clinics attached to mental hospitals, the Minister considers that in many cases still earlier intervention is required. The trained health visitor, as she moves among the homes of the people, is well fitted to bring to light unhappy or delinquent children who are oppressed by their home conditions and whose parents stand in need of either advice or warning. The reconciliation of traditional medicine with technical medical science is a problem in France as in other countries, but free choice of doctor should be maintained and a direct financial relationship should exist between doctor and patient. Vaccination, disinfection, and the removal of infectious cases to hospital no longer comprise the entire field of public health. Uncertainty for the morrow, whether individual or national, is one of the main causes of the physical, mental, and moral sickness of the time. For such conditions social service as an integral component of public hygiene may do much.

[9] *Brit. J. exp. Path.*, 1937, 18, 245
[10] *J. Immunol.*, 1937, 32, 379.
[11] *Rev. d'Hyg.*, 1936, 58, 561.

AURICULAR FIBRILLATION AND CONGESTIVE FAILURE WITHOUT ORGANIC HEART DISEASE

More than any other arrhythmia auricular fibrillation is a symptom of organic heart disease, especially when it lasts more than a few days. There are, however, exceptions to this rule, notably when fibrillation is associated with toxic goitre, where an alteration in the functions of the myocardium without structural change is assumed, since removal of the offending gland, if not too long delayed, is quickly followed in most cases by a return of normal rhythm. Short paroxysms of fibrillation are not at all uncommon in infections, especially in pneumonia, apart from any structural disease of the heart. In another group of cases fibrillation is an isolated symptom, unassociated with any discoverable disease of the heart or other organ; here the arrhythmia may be a chance discovery, or attention may be drawn to it through palpitation. Most often in this group the condition is of short duration, occurring in short paroxysms; but it may be permanent. Generally the irregularity is well borne, the ventricular rate being not very rapid. An exceptional case believed to be of this type, and in which congestive failure developed, is reported by Brill.[1] His patient, a woman aged 43, had no rheumatic history; blood pressure was normal; there was no arteriosclerosis and no goitre; before treatment

[1] *Amer. Heart J.*, February 13, 1937, p. 175.

the ventricular rate was 160, and from the history it appeared probable that the arrhythmia had been present for several weeks, the onset being preceded shortly by a sinusitis. After digitalization congestion quickly disappeared and the ventricle slowed to 85 per minute; a trial dose of quinidine (3 grains) unexpectedly restored normal rhythm; the patient was soon able to resume a normal life, and has remained well during subsequent observation for one year. Electrocardiograms during the attack revealed no abnormality apart from the rhythm and digitalis effects; radiographs taken after the disappearance of failure showed a cardiac shadow within the normal limits of size and shape. The investigations carried out on this patient would appear to exclude all the usual causes of congestive failure with fibrillation: absence of clinical and radiographic signs of mitral stenosis and the subsequent course are against rheumatic heart disease; there was no evidence of coronary occlusion, nor of hypertension or toxic goitre. This case, in which it is presumed that fibrillation with a rapid ventricle had been present for some time before severe symptoms developed, seems best explained by analogy with the rare cases of paroxysmal tachycardia where, though no organic heart disease exists, a long-continued rapid beating finally leads to myocardial exhaustion. The only apparent explanation for the abnormal rhythm was the sinus infection which shortly preceded it. The use of quinidine, though now regarded as unjustifiable in the presence of severe organic heart disease, as is usual when there is congestion, is held to be rational in the above case, in which, after the relief of symptoms, no structural lesion was found.

THE HEADACHES OF LADY ANNE CONWAY

Lady Anne Conway died in 1679, a life-long sufferer day and night from severe headaches, which in her latter years were associated with "fits." In addition to the constant pain she suffered much at the hands of many physicians, for she was treated by her kinsman, Dr. William Harvey, by Dr. Willis, by Sir Theodore Mayerne, by Van Helmont, and, as she lived at Ragley, seven miles from Stratford-on-Avon, by Dr. Stubbs, the local practitioner. For a time she passed under the hands of Valentine Greatrakes, a quack who promised much by his method of "stroaking," but failed to give her relief. In spite of such a grave disability Lady Conway became a great metaphysician, and Dr. Henry Moore of Cambridge, "who was almost perpetually in her chamber," used to speak of her as his "heroine pupil." It is said that her ruling passion was for the most abstruse treatises on philosophy and mysticism. Dr. Macdonald Critchley, in the April number of the *King's College Hospital Gazette*, reconsiders the nature of her illness, and arrives at the conclusion, as Dr. Gilbert R. Owen had done before him, that Lady Conway probably suffered from major migraine and not from tumour, aneurysm, or hydrocephalus, as has been suggested at various times. The Rev. John Ward, who was the contemporary vicar of Stratford-on-Avon, reports: "My Lady Conway hath a tumour on one side and a scirrhus of ye Mesenterie as is supposed, as Mr. Stubbs says. She came into this miserie by a brother of hers who had some skill in chymisterie and tried experiments uppon her." She lies in the Arrow churchyard, just outside the gates of Ragley Park. She died while her husband was in Ireland, and Van Helmont caused her body to be preserved in a coffin filled with spirits of wine and provided with a glass cover that Viscount Conway might see her face when he returned to England.

THE MECHANISM OF ACCOMMODATION

Whether from satisfaction with the achievements of nineteenth century physics or from sheer irritability at the unsuspected complexities of the eye, Helmholtz considered it a very imperfect optical instrument which no respectable optical manufacturer would have made. One of the complexities of the eye is the faculty of accommodation. That some mechanism exists whereby objects at different distances can be clearly focused at the retina was, of course, appreciated in antiquity, and the failure of this mechanism after middle life was a serious matter when glasses as an artificial means of correcting it were not known. No clear distinction between presbyopia and hypermetropia was achieved until the days of Donders, and it was only in the second half of the last century that the puzzling fact that some young people benefit from glasses generally used by old people—"old sight" in young people—was clearly understood. As to the nature of accommodation itself, though Scheiner proved it conclusively in 1619 with the simple experiment of looking at a needle through two pinholes, subsequent observers advanced a host of arguments to dispute not only various explanations of accommodation but its very existence. When accommodation was finally accepted as a fact it was left to the genius of Thomas Young to reduce a mass of hypothetical explanations to one which implicated the lens, and the lens only, as the site where changes occurred to allow the focusing of both distant and near objects; and since his days the dispute has centred round the exact mechanism whereby the lens changes its refractive power. Thomas Young himself held that the lens had muscle fibres which made changes in contour possible, but the explanation which finally came to be accepted almost to the exclusion of all other views was the one advanced by Helmholtz in the fifties of the last century. Underlying Helmholtz's theory was the conception that the lens was in a state of constant tension during rest; many later workers regarded this idea as unphysiological, and the arguments on the subject have often assumed a metaphysical tinge. The broad facts of Helmholtz's explanation have, however, held their ground; what has been disputed is the relative value of different factors. Largely owing to the work of Tscherning the exact changes in the contour of the lens during accommodation can now be more clearly appreciated. The uniform increase in spherical contour postulated by Helmholtz has given way to the

demonstrable formation of something like a central anterior lenticonus with a flattening of the periphery. Such a deformation of the lens during accommodation does not fit in with Helmholtz's conception that contraction of the ciliary body, leading to relaxation of the suspensory ligament, allows the lens previously under tension to assume its normal globular form. Modern views emphasize not the elastic nature of the lens but its plasticity, and Helmholtz's explanation does not solve these difficulties. Granted the plasticity of the lens, a host of theories have been advanced to explain the peculiar deformation that the lens undergoes during accommodation. Pressure from the vitreous and pressure from the aqueous are but two of these. Of late years much attention has been paid to the capsule of the lens as the means of moulding the plastic lens. The work of Hess and Gullstrand was ably elaborated by Fincham, who held that the deformation of the lens seen in accommodation could be explained by the differences in thickness seen in the capsule at different points; a central anterior lenticonus follows naturally since the anterior central part of the capsule is the thinnest. Thus, while the essential details of Helmholtz's theory still stand, the appreciation of the part that the capsule plays is held to resolve some of the difficulties in the original theory. The stress upon the part played by the capsule has its origin in theoretical conjectures. The mass of laborious work that Fincham has brought forward in support of this explanation is ably summarized by him in a monograph.[1] Most of the work has been published as individual articles from time to time as the facts accumulated. The student of the subject will be glad to have it in the present form free from the repetition that a series of isolated articles must of necessity contain.

THE NATION'S CRIMINALS

"The Amazing Dr. Clitterhouse," in the popular play now running in London, continually raises his glass to "Crime and Research." Had he possessed himself of the Home Office annual report on criminal statistics[2] he might have found enough to engage him without pursuing the adventures among crooks which led to his own undoing. When it is stated that in 1935 (the latest statistical year) over three-quarters of a million people were found guilty in the courts of some offence or other, it seems a big proportion of the population of 35 million (excluding children under 10) of England and Wales. More than half these persons, however, were traffic offenders—although, of course, that may mean in some cases an offence as heinous as anything in the calendar. The bulk of the remainder were guilty of non-indictable offences, such as drunkenness and breaches of by-laws, and only 70,000 had committed crime, chiefly theft. Of the 70,000 indicted more than 60,000 were males, three-fourths of them being under 30 years of age. Larceny appears to be the crime of youth, frauds and false pretences the crimes of maturity. Crimes against the person have diminished during the present century. The number of cases of malicious wounding is only a fraction of what it was a generation ago, though there is an increasing tendency for violence to accompany crimes against property. Rape and indecent assault are less frequent, but the number of cases of defilement of girls under 16 has increased. Leaving out bigamy, which is grouped among sexual offences in the police records, such offences have fallen from an annual average of 779 for the years 1900-4 to 500 for the years 1931-5. The number of persons in England and Wales who committed suicide in 1935 was just over 5,000. Far more males than females commit suicide, but the number of those who make the attempt and do not succeed is more nearly equal as between the sexes. The suicide age for women is between 40 and 50; for men it is over 60. The number of criminal lunatics (the word has not passed out of the language when mental disorder is linked with crime) received at Broadmoor and at county and borough mental hospitals was 127, of whom forty-five were "King's pleasure lunatics," being found either insane on arraignment or "Guilty but insane," and the others were "Secretary of State's lunatics," being found insane after conviction. Perhaps more important sociologically than the crime is the manner of dealing with it. In view of the Home Secretary's decision to appoint a committee to review the question of corporal punishment, on which such a variety of views were put forward at the recent Annual Representative Meeting, it is interesting to learn exactly how often the courts impose such sentences. Corporal punishment may be inflicted as an additional penalty for robbery with violence; also for any attempt to choke or suffocate (but not for otherwise assaulting) a person with intent to commit an indictable offence such as rape; for being an "incorrigible rogue," though in fact the only offence coming within this category for which corporal punishment has been ordered in recent years is indecent exposure; and in the case of male persons living on the earnings of prostitution or soliciting for immoral purposes. There is also power to inflict whipping on boys between 14 and 16 for malicious damage, arson, and larceny. In the ten years from 1926 to 1935 sentences of corporal punishment have been imposed by the courts of assize and quarter sessions in 253 cases, of which number 235 were cases of robbery with violence, 129 of the offenders being sentenced to the cat and the remainder to the birch. Another class of cases is that in which corporal punishment—not more than six strokes of the birch rod—is inflicted by juvenile courts. The number of such sentences passed in 1935 was 218, and the ten-year average has been below 200. The great majority of the one thousand juvenile courts in England and Wales, including the metropolitan courts and the courts of the principal towns, do not use the method. The 218 boys who were birched during the year under review were not necessarily worse than their fellows, but they had the ill luck to come before the few courts—mostly in the counties and smaller towns—which have not learned to spare the rod.

[1] *Brit. J. Ophthal.*, 1937, Monograph Supp. VIII. London: G. Pullman and Sons, Ltd. 1937.

[2] *Criminal Statistics, England and Wales, 1935.* Issued by the Secretary of State for the Home Department. Cmd. 5520. H.M. Stationery Office. (3s. 6d. net.)

ANAESTHESIA IN GENERAL PRACTICE

This is one of a series of articles, contributed by invitation

DEPTH OF ANAESTHESIA FOR VARIOUS OPERATIONS

BY

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It is frequently stated that the least possible quantity of the least toxic drug or combination of drugs should be administered to produce just sufficient depth of anaesthesia for any given operation. Like most generalizations this is only a half-truth. At first sight it appears most laudable to produce the lightest degree of narcosis which will enable the surgeon to perform his task, as it is evident that the less a patient inhales of a toxic drug the less there is to eliminate, and consequently metabolic changes will be minimized.

Operative Shock

In practice, however, a formidable difficulty arises. One of the causes of operative shock is the effect of traumatic stimuli on the central nervous system. This "reflex" type of shock was at one time thought to be due to exhaustion of the vasomotor centre from excessive stimulation. The modern view, however, is that there is a definite inhibition of the centre by certain afferent stimuli. Whatever the actual mechanism may be, this type of shock can be greatly diminished by deep general anaesthesia and practically abolished by suitable local analgesia which prevents the stimuli from reaching the central nervous system. A good example of the first method is afforded by the operation of osteoclasis for rickets. If the child is lightly anaesthetized he may show signs of severe shock immediately after fracture of the bones, but if he is deeply etherized the pulse rate and blood pressure may scarcely change. As examples of the protection afforded by nerve-blocking, a disarticulation through the hip-joint or a hind-quarter amputation may be cited. The immediate effect on a patient's condition may be almost unnoticeable under spinal analgesia. As a rule it is not possible for the general practitioner to perform combined methods of general and local anaesthesia, so that in this article it will be assumed that he only has the simpler forms of general anaesthesia at his disposal.

Abolition of Reflexes

The question of reflexes must next be considered. It is obvious that the normal response to stimuli must be abolished, but what of the protective cough reflex? If there is any possibility of liquid or solid material reaching the air passages during the performance of the operation either the anaesthesia must be kept sufficiently light to preserve the protective cough reflex, or adequate provision must be made to prevent aspiration, such as by endotracheal anaesthesia, with packing, suction, etc. It is possible for the operation to induce inconvenient reflexes unless anaesthesia is extremely deep. For example, if an inflamed bladder is distended with fluid before cystoscopy straining will occur unless the narcosis is carried to a very deep plane.

In certain cases a light anaesthesia may be more dangerous than a deep one. For instance, if chloroform or a mixture containing it is being used there is an increased risk of primary cardiac failure if the patient is incompletely anaesthetized, the most dangerous period being at the end of the second stage. In most prolonged operations there are times when the anaesthesia can be appreciably lightened without detriment to the surgeon's work, and a careful anaesthetist who takes advantage of these periods may save his patient much unpleasantness afterwards by a quicker recovery and freedom from after-effects.

Lastly, we have to remember that deep anaesthesia is not always accompanied by complete muscular relaxation. Straining may actually occur during overdosage if the airway is partially obstructed. Conversely, the anaesthetist who is always careful to maintain a perfectly clear airway will find that he can obtain adequate relaxation at a surprisingly light level of narcosis.

Passing next from the general to the particular, we have to consider the depth of anaesthesia necessary for certain common operations.

Minor Operations

Small surgical proceedings, such as circumcision, myringotomy, the incision of whitlows, the removal of superficial tumours, etc., do not give rise to an appreciable amount of shock and can consequently be performed under the lightest anaesthesia which will prevent reflex movements. The only proviso is that no chloroform or mixture containing it may be employed.

Dental Extractions

The removal of teeth does not require muscular relaxation provided that a prop or gag has been inserted in the mouth before anaesthesia. In children the single-dose ethyl-chloride or di-vinyl ether technique is usually adequate. It sometimes happens that the depth of anaesthesia is such that the cough reflex is abolished. It is always wise, therefore, to insert a sponge or pack to obviate any chance of the inspiration of fragments of teeth. For short extractions in adults gas or nasal gas and air is the usual method. Although the cough reflex is generally unimpaired it is prudent to employ packing as an additional safeguard.

If a long dental operation is proposed the patient should, if possible, be removed to a hospital or nursing home and anaesthesia be conducted by the nasal endotracheal route, with packing. This is the only safe method of securing a smooth anaesthesia for an indefinite period. A plane of light third-stage narcosis will suffice for this type of operation. The actual techniques are discussed in another article.

Removal of Tonsils and Adenoids

The rapid guillotine method of tonsillectomy in children is as a rule performed under the single-dose ethyl-chloride or di-vinyl ether technique, preceded where possible by oral nembutal or rectal paraldehyde. Unfortunately the majority of such operations are performed upon out-patients and adequate premedication is impossible. A rather deeper anaesthesia is needed than for dental extractions, as the pharyngeal reflex should be abolished. Immediately after the removal of the second tonsil the child should be turned on to his side and allowed to come round until the cough reflex returns before the adenoids are

scraped. If any solid matter should then slip off the curette and be inhaled it will be immediately coughed up.

If the tonsils are to be dissected continuous anaesthesia is necessary. The simplest method is the pharyngeal insufflation of ether vapour through the tube on the tongue-depressor of a Davis gag. Anaesthesia must be sufficiently deep to enable the surgeon to exert traction on the tonsils without causing retching. With this plane of anaesthesia the cough reflex may be absent, so that blood must be prevented from reaching the larynx. This can be accomplished by suction and by the position of the patient. The latter varies with the individual surgeon, but is usually the "thyroid" position with extended head, or the lateral "Butlin" position with the head low. The only certain method of protecting the air passages from blood and debris is the nasal endotracheal technique with a gauze pack. Neither the tube nor the packing must be removed at the end of the operation until the cough reflex has returned.

Nasal Surgery

Short procedures such as antral puncture and turbinectomy can be done under a "single dose" anaesthetic technique.

In longer intranasal operations, such as sinus drainage or submucous resection of the septum, continuous anaesthesia is needed. Pharyngeal insufflation with a post-nasal pack or Shipway's ballooned airway is only safe if the cough reflex is preserved, since it is impossible to be certain that no blood will leak past the pack. Oral endotracheal anaesthesia with gauze packing or a ballooned tube is undoubtedly the method of choice, and an even level of narcosis can then be maintained with perfect safety.

Abdominal Surgery

Comparatively minor procedures such as operations for hernia and varicocele require little relaxation and can be performed under light third-stage narcosis. Extensive intra-abdominal operations, on the other hand, demand good relaxation. The nearer the incision is to the diaphragm the greater will be the respiratory excursion and consequently the greater the need for shallow respiration. The suturing of hollow viscera is both tedious and difficult if the suture line is moving over an extensive range. Furthermore, traction on the diaphragmatic attachments tends to cause reflex laryngeal spasm with consequent laboured breathing and poor relaxation. For these reasons an ordinary inhalation anaesthesia may not prove satisfactory for such operations as gastro-enterostomy, partial gastrectomy, and cholecystectomy. A thorough cocainization of the glottis may help to obviate laryngeal spasm, but the only certain preventive is the passage of an endotracheal tube. In many cases it is possible to use this technique without additional apparatus by means of "blind" nasal intubation, the administration being continued as before with a mask. A "gas" mixture is naturally preferable if an apparatus is available.

Pelvic and lower abdominal operations, such as appendicectomy and hysterectomy, can generally be performed satisfactorily with a straightforward inhalation anaesthesia carried well into the third stage. Prostatectomy, if done under general anaesthesia, necessitates the absolute minimum of ether, as the patient is practically always a poor risk with damaged kidneys, and often suffers in addition from chronic bronchitis.

There are three stages in an intra-abdominal operation when a deep plane of narcosis is necessary. They are (1) on opening the peritoneal cavity, (2) during traction on peritoneal attachments, and (3) on closing the peritoneum. The "sewing-up" must be anticipated by some minutes as it is impossible to deepen the anaesthesia suddenly, and straining at this stage is particularly trying. Similarly, a surgeon who without warning suddenly explores the gall-bladder, having finished an appendicectomy, may upset a lightly anaesthetized patient very badly. Renal operations performed through a lateral incision do not require such deep anaesthesia, as the peritoneum is not opened.

Thoracic Surgery

Minor operations upon the thoracic wall, such as the excision of breast tumours and the application of radium needles, can be carried out satisfactorily under quite light anaesthesia. A good technique is fairly heavy premedication followed by gas and oxygen.

Thoracoplasty can be performed by the same method if sputum is not excessive, but owing to the fact that the patients have a poor vital capacity and are lying on their sound sides an excess of oxygen should be used. This will necessitate the addition of small quantities of di-vinyl ether or, failing this, of chloroform. If cyclopropane is available and the diathermic cautery is not employed, an even better anaesthesia will ensue. The same remarks apply to the drainage of acute empyema if this is to be carried out under general anaesthesia.

Should a patient be coughing up an excessive amount of sputum (as in bronchiectasis) and an extensive thoracic operation be contemplated, the cough reflex must either be retained (as in high spinal or other local technique), or the fluid must be confined to the affected lung (as in intra-bronchial anaesthesia) or evacuated by tracheal or bronchial suction combined with endotracheal anaesthesia. These procedures are mostly outside the scope of the general practitioner and will not be considered further.

Thyroid Surgery

Operations for the relief of toxic goitre have recently become so frequent that some reference must be made to them. Since tracheitis is one of the most frequent sequelae the anaesthetic chosen must not aggravate it. Consequently the use of ether and the passage of tracheal tubes should be avoided unless respiratory obstruction is present. Since relaxation is not necessary a light level of narcosis is adequate, and the avoidance of toxic drugs such as ether and chloroform may just turn the scale in favour of an extremely ill patient. A good technique is heavy premedication or basal narcosis with avertin, followed by pure nitrous oxide and oxygen. The surgeon may prefer an additional infiltration with novocain and adrenaline or adrenaline solution alone (1 in 500,000) in order to separate tissue planes and minimize capillary oozing, but this is not essential. In total thyroidectomy for congestive heart failure cyclopropane is indicated, but for ordinary cases its employment causes excessive bleeding. (The depth of anaesthesia desirable in obstetrical practice is considered in another article of this series.)

The French Ministry of Public Health has instructed the venereal disease services to issue health passports to their patients. Each "carnet médical personnel" will be identified by a number instead of the patient's name and will contain the relevant data concerning diagnosis, clinical and laboratory findings, and instructions to be followed. When a patient leaves a venereal disease service this passport is to be given to him or to his new doctor.

ONE HUNDRED AND FIFTH ANNUAL MEETING

of the

British Medical Association

HELD IN BELFAST, JULY, 1937

THE SECTIONS

SUMMARY OF PROCEEDINGS

During the next few months there will be published in the BRITISH MEDICAL JOURNAL *the opening papers communicated to the Scientific Sections of the Annual Meeting at Belfast. The reports of discussions, concluded from last week* (*p.* 288), *are intended to give members who were not present a general idea of the proceedings.*

COMBINED SECTIONS OF MEDICINE AND SURGERY

Friday, July 23

Abscess of the Lung

With Professor W. W. D. THOMSON in the chair, the discussion on "Abscess of the Lung" was opened by Dr. L. S. T. BURRELL. He held that this disease was a very serious one and frequently fatal. A considerable proportion of single lung abscesses followed operations on the nose, throat, or teeth. Frequently the onset was insidious and even afebrile, the earliest symptoms often amounting to no more than malaise and a nasty taste in the mouth. Clubbing of the fingers was an early sign, while local evidence in the lung might only appear later. The speaker stressed the necessity of localization by *x*-ray films in different positions, but considered that stereoscopic radiographs were apt to be misleading. Although it had been said that the use of an exploring needle was dangerous owing to the risk of infecting a healthy pleura, he had never known it happen; at the same time he agreed that it was unnecessary to explore an abscess by this means. Treatment by postural drainage was best carried out by the use of the bed devised by the late Mr. H. P. Nelson; a full six weeks should be allowed before surgical treatment was considered. Bronchoscopic methods did little more than hurry drainage.

Mr. J. E. H. ROBERTS agreed that suppuration in the lung was extremely serious; delay in the diagnosis often contributed to the gravity, and the use of the tomograph might help to eliminate this factor. An abscess was always close to the surface of the affected lobe; only partial evacuation followed the opening into small bronchi, and large sloughs that could not have passed even through a main bronchus were commonly found at operation; further, the vessels in the walls of chronic abscesses became progressively obliterated. For these reasons he considered that postural drainage might fail owing to the small openings out of the abscess allowing only liquid pus to escape. Artificial pneumothorax was inadvisable, and bronchoscopic drainage had only a limited application. Mr. Roberts held that postural drainage and other medical measures might be continued as long as there was progressive improvement as judged by clinical and radiological methods. Failing this, operation should not be delayed longer than two weeks. External drainage by a two-stage operation under cyclopropane was the method he advised in the earlier stages. As often as not the opening of the thorax revealed thickening of the rib periosteum and opacity of the pleura, and the operation could then be concluded at the same sitting by incision and drainage of the lung. Lobectomy might be the best procedure in more chronic lung abscesses.

Dr. PETER KERLEY spoke of the radiology of lung abscess, and insisted that lateral views were important, in the lying as well as in the erect posture. Since signs might be indefinite, radiological control at intervals of three days was advisable. The tomograph promised to be of great help in the localization of lung abscesses. Radiography might help to distinguish an abscess due to new growth, since in such cases part of the wall of the cavity often showed no pneumonitis. Chronic suppuration might cause local malignant disease. If an *x*-ray showed cavities forming very rapidly a diagnosis of acute pneumonic phthisis should be considered rather than lung abscess.

Dr. CARL SEMB (Oslo) agreed that surgical intervention in lung abscess was often delayed too long. The patient should be under close observation from the onset of the illness, medical treatment being adopted during the first week or two. Using the same criteria for surgical intervention as those laid down by Mr. Roberts, he considered that operation in one or two stages should be undertaken within three to five weeks unless treatment by medical means was producing progressive benefit. Dr. Semb related his experience of seventy-four cases of pulmonary suppuration, which he considered was a not uncommon cause of empyema.

Dr. GEOFFREY MARSHALL regarded bronchial obstruction as a common cause of lung abscess. Dental extractions and anaesthetics were sometimes followed by pulmonary suppuration, and he had seen this condition caused by the unwise administration of morphine or hyoscine to control respiratory distress in asthma. Patients sometimes coughed up an abscess during transit to hospital or nursing home, and this had encouraged him to adopt what he termed "percussion drainage"; in this procedure the patient's chest was vigorously pummelled several times a day with the object of provoking drainage through the bronchi. An initial bronchoscopy should be made in all cases, but he felt that repeated bronchoscopic drainage was a useless method of treatment. Conservative treatment should be adopted for two weeks, and operation should then be delayed only if continued improvement was in progress with a leucocyte count below 12,000 per c.mm.

Dr. W. BURTON WOOD took the view that the bronchi were to be considered as "permanent air-shafts and occasional drains." The best treatment of lung abscess was drainage through these natural channels. In his view postural drainage was not always given a fair trial. Bronchoscopic drainage was a valuable means of treatment, and he had often performed this in order to overcome temporary blockage of the bronchi in the course of natural drainage. Of his group of forty-five cases of pulmonary suppuration twelve were considered to be suffering from septic pneumonitis. Medical treatment was adopted in twelve, all of whom recovered. Bronchoscopic drainage was employed in eight, while five recovered after a complicating empyema had been drained. Surgical drainage in eight cases resulted in two deaths directly due to the operation, while the remainder recovered.

Professor F. W. ARCHIBALD (Montreal) grouped cases of lung abscess into those caused by aspiration and those produced by infected emboli. The former were associated with pneumonitis and often followed bronchopneumonia. Embolism caused little surrounding reaction and good healing was possible, since the neighbouring lung retained its elasticity. He commented on the disparity of the views expressed regarding treatment: probably lobectomy was the best treatment when suppuration due to aspiration had continued two or three months.

Mr. G. R. B. PURCE (Belfast) had found no obvious cause in forty-one of his sixty-six cases of lung abscess. Unlike Maxwell, who recorded forty-three cases following pneumonia out of a total of 199, he had had no case from this cause. Embolism was a more frequent basis of abscess than was generally recognized. The bacteriology of the putrid abscess always included anaerobic streptococci, fusiform bacilli, and a spirillum. Two-thirds of all abscesses involved the lower lobes, the frequency being equal on the two sides. Medical and surgical treatment must be complementary. A surgical emergency arose if perforation of the pleura occurred before the abscess ruptured through natural channels. After this had occurred a perseverance in medical treatment resulted in cure in about 70 per cent. of cases. If in six to eight weeks continued resolution was not evident then operation should be undertaken. An abscess of many months' duration could only be dealt with surgically, and the mortality was then very high.

Mr. PHILIP ALLISON (Leeds) thought that there should be no hard-and-fast distinction between medical and surgical treatment; in every case both forms of treatment had to be applied at different stages. He disagreed with Mr. Roberts on the matter of bronchoscopic drainage, and said that in his experience this procedure was frequently successful in assisting the passage of pus through a large draining bronchus. If operation had to be undertaken complete removal of the roof of the cavity was essential. Too prolonged treatment by medical means often resulted in bronchiectasis.

Dr. BURRELL answered several questions that had been asked. He commented on the approximation of the medical and surgical views on the principles of treatment. Mr. ROBERTS also replied, with special reference to the statistics quoted by Mr. Purce. He thought that the failures of surgical treatment should be added to those of medical treatment in assessing the failures of conservative measures, since the latter had been tried without avail in the first instance. In any case he felt strongly that the results of present methods were so bad that the possibilities of earlier operation ought to be tried out.

SECTION OF OBSTETRICS AND GYNAECOLOGY

Friday, July 23

Forceps Delivery

In the absence of Professor JOSEPH DE LEE (Chicago), Professor C. G. LOWRY introduced Professor De Lee's film entitled "Forceps Operation, including Episiotomy and its Anatomy." The film was a talking one, and there was first a lecture given by Professor De Lee on the history and evolution of the obstetrical forceps, followed by a detailed description of the anatomy of episiotomy and its performance on a model. Then followed an excellent film of the delivery of the foetal head with forceps after the performance of episiotomy on the patient, and the film ended with a review of the case.

Breech Presentations

Mr. T. S. S. HOLMES (Belfast) then took the chair and Mr. H. I. MCCLURE (Belfast) read his and Mr. C. H. G. MACAFEE'S paper on a critical survey of 349 cases of breech delivery. The paper dealt with 349 consecutive cases seen in the Royal Maternity Hospital, Belfast, during the years 1932–6. The cases represented a frequency of 6.03 per cent. of all deliveries occurring in the hospital over the same period. In 638 of private cases the frequency was 2.5 per cent. Of the 349 cases 305 were primary breech presentations. There were seventeen cases of twins in which each child was delivered as a breech. Three Caesarean sections were necessary, otherwise delivery was effected by the classical methods. Tables were then given showing that the total number of primigravidae was 115 and multigravidae 217. The gross foetal mortality in the primiparae was 23.72 per cent., in multiparae 38.96 per cent. A further table showed the cases eliminated to obtain the corrected foetal mortality, which in primiparae was 10 per cent. and in multiparae 3.42 per cent., giving a total in both of 6.1 per cent. The paper then dealt with certain essential precautions which should be taken to reduce this mortality figure still further. External version should be done at any stage after the thirtieth week of pregnancy as soon as the breech presentation was discovered. The patient should be re-examined every week until the onset of labour. Of 134 patients upon whom this manœuvre was performed only one (0.74 per cent.) bore a stillborn child. An anaesthetic should not be administered lest undue force be employed and result in separation of the placenta. Non-intervention until the breech had ceased to advance was the policy to be followed. The posterior arm was brought down in the classical method of delivery, but the writers failed to agree with the usual instructions regarding the method of dealing with the anterior arm. The arm could, in the majority of cases, be easily brought down without rotation of the child's back and occiput across the hollow of the sacrum. Extraction of the after-coming head was accomplished by the usual methods, but they insisted on slow and gentle delivery to prevent tentorial tears.

In the discussion that followed Professor DANIEL DOUGAL (Manchester) said that he found himself in agreement with practically all that had been said. While admitting that the foetal death rate in breech cases was twice as great as in normal deliveries, he thought that the difficulties had been greatly exaggerated. External version was a most valuable contribution to the solution of the breech problem. He was very strongly opposed to early interference in breech cases with extended legs.

Mr. L. CARNAC RIVETT said he agreed almost entirely with the writers of the paper, especially in regard to the meddlesome midwifery of early pulling down of extended legs. He was not in favour of episiotomy. He often used an anaesthetic for version, as he found the greatest cause of difficulty was the mother's tense abdominal wall.

Dr. H. R. FREDERICK (Port Talbot) said that it bewildered the general practitioner to find views on the treatment of breech cases altering from year to year. Professor A. H. DAVIDSON (Dublin) held that the danger of breech delivery was overstressed. The important thing in a primiparous breech was to make sure there was no disproportion. If there was disproportion to any degree, then Caesarean section should be considered. The extended legs should not be brought down—they form a very good dilator of the birth canal. Dr. J. ARTHUR H. SHERWIN (Melbourne) also referred to Professor De Lee's film, and mentioned the *vis a tergo* which he had seen used to express the foetus out of the uterus to avert extension of the arms.

Professor LOWRY agreed with the views expressed by Professor Davidson as to the dangers of external version. It was a proceeding by no means free from risk. Dr. A. E. CHISHOLM (Dundee) emphasized the value of the application of lateral pads after version had been performed.

In addition to these speakers Professor E. C. CRICHTON (Capetown), Professor J. CHASSAR MOIR (Oxford), Dr. J. S. ENGLISH (Singapore), and Dr. A. FULLERTON (Batley) also spoke during the discussion.

Professor DAVIDSON then showed his coloured film of the operation of vaginal hysterectomy. He stressed the easy convalescence for the patient, and the bloodlessness and simple technique. He injected into and around the cervix a solution of 1 2 per cent. novocain with 10 minims to 100 c.cm. of 1 in 1,000 adrenaline.

Dr. KATHLEEN VAUGHAN then read an excellent and lucid paper on posture in childbirth, and showed several photographs of ancient steles showing the early methods of assisting parturition.

SECTION OF PATHOLOGY, BACTERIOLOGY, AND IMMUNOLOGY

Friday, July 23

Influenza: Four Years' Progress

The President, Sir THOMAS HOUSTON (Belfast), congratulated Professor S. P. Bedson on the conferment upon him of an honorary degree by the University of Belfast, and asked him to take the chair.

Dr. C. H. ANDREWES read his introductory paper entitled "Influenza: Four Years' Progress." He described the methods by which virus can be isolated from cases of influenza by ferret inoculation and its maintenance and behaviour in animals, and gave the reasons for regarding this virus as the cause of the disease. These included not only the isolation of the virus from cases in many different parts of the world, but the development of neutralizing antibodies during the course of the disease, and one well-authenticated case of the transmission of the disease from ferret to man after long-repeated passage in the former. Interest had been centred lately on attempts at active immunization, and he and his colleagues had shown that the titre of neutralizing antibodies could be markedly increased by a single injection of virus suspension from mouse lung. This method had been applied on a limited scale in human volunteers during last winter's epidemic, and although the results had been inconclusive owing to the outbreak of the disease among the inoculated individuals at so early a stage that immunization was incomplete, he was still hopeful that the method might prove of use, even in spite of the fact that different strains of the virus appeared not to be antigenically identical.

Dr. C. H. STUART-HARRIS described the results of a clinical study of influenza undertaken in connexion with the former speaker's work on its aetiology. The disease had to be distinguished from a type of febrile catarrh from which the influenza virus could not be recovered. A careful tabulation of the symptoms of both conditions showed that in some features they differed, notably in the fact that in influenza due to virus the onset was sudden with mainly constitutional disturbance, whereas in febrile catarrh the initial symptoms came on gradually and were referable especially to the upper air passages. The leucocyte count was of no diagnostic value, and post-influenzal debility had not been characteristic of the recent epidemic.

Dr. R. W. FAIRBROTHER (Manchester) reported the results of his study of the same epidemic in the North of England. Two methods were available for demonstrating immune bodies—the neutralization test and the study of complement-fixing antibodies. He and his colleagues had used the latter, and found that a titre of 1 in 4 or over was indicative of resistance to the infection; the test could therefore be used to distinguish those requiring immunization. In the event of an epidemic the successful immunization of the susceptibles would greatly reduce the disastrous effects of the outbreak. Experimental work on the immunization of mice had yielded encouraging results, but the application of similar vaccines to man had been disappointing. He and Dr. Hoyle had consequently been endeavouring to obtain a more satisfactory type of vaccine. The antigenic structure of the influenza virus was complex; it included both a "soluble substance," which resembled a haptene and was demonstrated by the complement-fixation test, and the elementary bodies, which were concerned in the neutralization test and were essential for immunization. They had treated elementary bodies in various ways—with formalin, phenol, and heat (50° C.)—and mice were protected by each type of vaccine. The results obtained in mice indicated that elementary body suspensions heated to 50° C. for thirty minutes and suspended in 0.5 per cent. phenol as preservative formed a convenient and useful immunizing agent. The preparation was almost non-infective, free from bacteria and extraneous material, and could be conserved at 0° C. for several weeks. Its effect on man had still to be investigated, but experiments on ferrets indicated that a high degree of protection would not be induced.

Dr. J. G. SCADDING described a clinical and bacteriological study of cases of influenza admitted to hospital during the recent outbreak. These had been classified into those without lung involvement, those with clinical but no *x*-ray signs of lung involvement, and those with distinct pneumonia; the last had been separated into five types, according to the severity of the condition and its distribution. Virus had been obtained from several of these cases, and a bacteriological examination of the sputum was made in all. Taken as a whole the types of bacteria found did not differ from those in non-influenzal infections of the respiratory tract, but there was a distinct relation between the nature of the lung involvement and the types of bacteria present. Cases with clinical but no *x*-ray signs of pneumonia were often infected by members of the *Neisseria* group, while the presence of pneumococci was associated with lobar consolidation. The speaker had formed the opinion that influenza was a descending infection of the respiratory tract which might be arrested at any level, and that bacterial infection might alter the picture in various ways. He also described the post-mortem findings in seven fatal cases; the characteristic features were tracheitis, interstitial inflammation, and sometimes necrosis of the alveolar walls leading to haemorrhage.

The CHAIRMAN (Professor Bedson) said that the existence of several antigenic types of the influenza virus certainly appeared to be a misfortune, but suggested that the neutralization test might possibly be exaggerating the differences between them. The absence of correlation between the results of the complement-fixation and neutralization tests corresponded to his own findings in psittacosis. Was the quantitative complement-fixation test really a measure of immunity?

Dr. C. E. VAN ROOYEN (Edinburgh) suggested that the intense degree of cellular parasitization by the influenza virus accounted for the liability to secondary bacterial infection in influenza. There was a similar liability in ectromelia and psittacosis. He had found the complement-fixation test of use in studies of vaccinia. The prospects for active immunization against influenza did not appear to him unfavourable, as others had thought. Was prontosil of any value in influenza?

Dr. ANDREWES, in reply, said that prontosil had been tried in experimental influenza in mice and found to be useless. The antigenic differences between strains of virus had been shown in mice to affect the results of immunization, and some human experiments suggested the same conclusion. He discussed the relative merits of the neutralization and complement-fixation tests, and pointed out that the latter does not distinguish between different strains of virus. It was important to know whether it could be relied on to indicate the degree of susceptibility. In view of the fact that artificial immunity is likely to be short-lived one difficulty in connexion with it was that of forecasting the epidemic for which it was required.

Dr. FAIRBROTHER, in reply, maintained that the complement-fixation test was significant, and pointed out that it is the only feasible test in a laboratory not lavishly equipped for such research. It might be possible to prepare a polyvalent virus vaccine.

Staphylococcal Infections in Man

Professor J. W. BIGGER (Dublin) opened a discussion on staphylococcal infections in man. Staphylococcal toxins had been known for many years to exist, but their full study was a recent development which had produced an extensive literature. He traced the discoveries leading up to this work, the main landmarks being the demonstration of the dermonecrotic toxin by Parker, the establishment of methods of producing toxin, and the Bundaberg disaster with the studies which ensued on it. The components and varieties of staphylococcus toxin as they are

now known were described. The effect of these discoveries was that it was now possible and desirable to treat severe and dangerous staphylococcal infections with an antitoxin, and to immunize actively in chronic infections with toxoid. The latter, to be effective, must contain all the components. Antibody titrations during treatment with toxoid were unnecessary, and the amount of antibody formation required to prevent infection varied in different individuals, possibly owing to differences in the condition of the skin. Staphylococcus vaccines might also be helpful.

Dr. H. J. PARISH (Beckenham) said that the antitoxin which was issued commercially in the British Isles neutralized the important toxic properties (lethal toxin, necrotoxin, α haemolysin, and both types of leucocidin) present in culture filtrates. Active immunization with toxoid, but not with vaccines, afforded protection against infection in laboratory animals. There was still difference of opinion about the clinical value of toxoid, antitoxin, and vaccines. The use of toxoid was a rational form of therapy in man, in whom good results had been reported by various workers in some staphylococcal diseases. With regard to chemotherapy, sulphanilamide (*p*-aminobenzenesulphonamide or prontosil album) protected mice against multiple lethal doses (1,000 to 10,000) of highly virulent strains of staphylococcus. As in the case of the haemolytic streptococcus, repeated doses of the drug were necessary to give protection for some weeks. Staphylococci persisted much longer than haemolytic streptococci in the tissues of the protected mice, and might often give rise to abscess formation in the liver and spleen. The results of experiments in mice suggested that sulphanilamide might be of value in the treatment of certain staphylococcal infections in man.

Dr. EILEEN O. BARTLEY (Belfast), whose paper was read by Dr. N. C. GRAHAM (Belfast), reported the results of the therapeutic use of staphylococcus toxoid. A follow-up of a series of cases reported a year before showed a higher proportion of cures than in the original figures. Styes responded best, then boils and dermatitis; sycosis was more resistant. She had titrated the antihaemolysin during treatment, and found an average rise from 1 unit to 7.7, but there was no relation between the degree of this increase and the clinical result.

Dr. S. C. DYKE (Wolverhampton) pointed out that antibody titration only indicated the amount of antihaemolysin formed, and agreed that this was unrelated to the degree of clinical improvement. Autogenous vaccines were sometimes more effective than toxoid: 90 per cent. of cases of recurrent boils could be cured by this means. He denied that diabetics more often contracted staphylococcal infections than other patients, but agreed that these infections were more dangerous when they occurred in diabetics.

Dr. EILEEN M. HICKEY (Belfast) described the successful treatment of a case of generalized staphylococcal infection with prontosil: relapse had followed immediately on the withdrawal of the drug no fewer than five times.

Sir THOMAS HOUSTON said that the original results with vaccines reported by Wright and Douglas were better than those obtained with toxoid. It was important to make an exact bacteriological diagnosis: he had seen cases apparently of pure staphylococcal infection in which in reality there was infection by the enterococcus as well, or by a haemolytic streptococcus. Dr. H. GUY DAIN (Birmingham) pointed out the importance of eradicating other foci of infection; an underlying condition might be a root abscess, and sometimes the antrum was at fault. Colonel A. H. PROCTOR described a study of active immunization carried out at the British Postgraduate Medical School. The anti-haemolysin titre was no criterion of success, and they had also found the bactericidal power of the blood useless as a guide. It was important in severe staphylococcal lesions to guard against secondary infection. Dr. GRAHAM also emphasized the necessity for bacteriological diagnosis; some boils were streptococcal. Dr. A. FELIX expressed his interest in a study which had shown that the phenomena of infection were due to the combined effect of several bacterial antigens.

Professor BIGGER, in reply, said that he believed the different effects of vaccines to be due to the variety of media on which the cocci were grown, and upon which toxin was produced in different amounts. A good toxoid must be derived from alpha and beta toxin and a sufficiency of leucocidin to be effective.

SECTION OF PHARMACOLOGY AND THERAPEUTICS, INCLUDING ANAESTHETICS

Friday, July 23

Anaesthesia in Minor Surgery

With Dr. OLIVE M. ANDERSON (Belfast), a Vice-President, in the chair, Dr. J. H. T. CHALLIS opened a discussion on this subject.

Dr. Challis said that anaesthesia for so-called minor surgical procedures required as much skill and ability on the part of the anaesthetist as did major operations, and that of the various anaesthetic agents available for this purpose no one drug was greatly in advance of the others in respect of efficiency and safety. The ideal anaesthetic for minor surgery should be safe, it should not hinder the patient from continuing his work, the necessary depth of anaesthesia should be available, consciousness should be regained quickly, and the anaesthesia should be pleasant to the patient. Local anaesthesia probably represented the nearest approach to this ideal. The intravenous barbiturates were difficult to use in small children and were contraindicated in the elderly. Nitrous oxide and oxygen was probably the most useful combination for inhalational anaesthesia when the conditions under which minor surgery was conducted in this country were considered. It was an advantage, but not essential, to administer previously a sedative. Dr. Challis recommended the oral administration of an alkaline powder immediately before nasal gas for dental extractions; this seemed to promote a quick and rapid recovery. Vinyl ether had a definite place in minor surgery. Ether was safe, and any required stage of anaesthesia could be secured and maintained. In the speaker's opinion this agent should always be employed for a second surgical intervention in a patient who was exsanguinated and was still bleeding after tonsillectomy. Chloroform was useful, particularly for obstetrical work. Although cyclopropane could not be classified as an entirely safe anaesthetic, it was not without its uses for the purpose under consideration.

Dr. J. H. GILLIES (Edinburgh) said that many anaesthetists were tempted to standardize both apparatus and technique and to apply it to major and minor surgery alike. For the latter purpose local and regional anaesthesia should be used whenever possible, but a keen judgement was desirable for the safe application of intravenous methods. For the enucleation of tonsils by the guillotine he recommended the use of up to 5 c.cm. of ethyl chloride evaporated gradually into a wide-bored Hewitt inhaler through which a trickle of oxygen flowed constantly. There was no cyanosis, but administration should cease as soon as the rapid deep breathing of the third stage of ethyl chloride anaesthesia was evident. For the longer operations of minor surgery, when nitrous-oxide-oxygen and ether, which was the anaesthetic of choice, was not available, the ethyl-chloride-ether sequence was satisfactory.

Dr. W. B. PRIMROSE (Glasgow) said that, notwithstanding the advances made recently in anaesthesia, the production of chloroform was increasing, and he interpreted this as indicating that this agent was being more commonly used for minor surgery. The inhalation of the heavy chloroform vapour involved a physical element of asphyxia which caused deprivation of oxygen, and this in many

cases led to difficulty. The toxicity of chloroform was apt to add its depressing effect and precipitate a collapse. This, however, could be obviated by the use of oxygen. When fully oxygenated, the medullary centres controlled the intake of the drug and automatically adjusted the depth of anaesthesia to the requirements of the surgeon.

Mr. J. S. LOUGHRIDGE (Belfast) said that local anaesthesia, nitrous oxide and oxygen, and sodium evipan were among the safest of anaesthetics. Each had its advantages and disadvantages, but by using two or more agents the advantages of all could be secured and at the same time their disadvantages could be eliminated. He had used a combination of agents, particularly in the simpler acute abdominal emergencies in bad risk cases. The method advocated was to begin the operation under local anaesthesia and to give nitrous oxide or sodium evipan as and when indicated. This method had been used without any apparent distress to the patient in cases of advanced cardiac and pulmonary disease.

Dr. RONALD JARMAN, referring to anaesthesia in children, said that, so far as premedication was concerned, nembutal, in appropriate dosage, could be given by the mouth or paraldehyde or avertin by the rectum. Every child should receive an adequate dose of atropine, and should as far as possible be unconscious of the injection. Nitrous oxide and oxygen, supplemented with ether if necessary, probably constituted the best method of induction, and with a suitable apparatus there should be no difficulty in giving it over any length of time. For dental anaesthesia it was easy to hasten induction with nasal gas and oxygen by spraying 2 or 3 c.cm. of ethyl chloride on to a piece of lint placed in front of the child's mouth. He considered that, for children, intravenous anaesthesia should not be encouraged, for even with some form of premedication the child remained conscious of the prick of the needle and would not forget this. In any circumstances it was essential to gain the confidence of the child. Dr. Jarman illustrated his remarks with a cinematographic film.

Dr. OLIVE ANDERSON asked what type of apparatus was recommended for administering gas and oxygen. There was anxiety in some quarters regarding the employment of heavy premedication in children. Dr. H. A. KELLY pointed out that in practice the anaesthetist has to use apparatus provided by the dentist, and in dental work premedication is usually impracticable. Dr. CECILIA WILLIAMSON (Ipswich), Dr. KATHARINE G. LLOYD-WILLIAMS, Dr. P. M. OVERTON (Bolton), and Dr. MARTHA E. HUTCHINSON (Belfast) raised further points, to which the openers briefly replied.

Vinyl Ether as an Anaesthetic Agent

Dr. VICTOR GOLDMAN, in initiating a discussion upon this subject, based his observations on a series of 1,191 cases in which no death or serious complications had occurred. Anaesthesia was produced with great rapidity; muscular relaxation was complete and similar to that obtained with ethyl ether. There was no irritation of the upper air passages, but there was increased salivation. Mixtures of vinyl ether and ethyl ether were satisfactory, and a mixture of 25 per cent. of the former with 75 per cent. of the latter had been advocated for use by the open method. It had been proved beyond question that this agent had little action upon liver function even when administered to patients with toxaemia of pregnancy. There was no appreciable change in the coagulation time of the blood, and the effect upon the blood sugar compared favourably with that produced by ether and chloroform. Dr. Goldman said that in his hands the administration of vinyl ether by the open method had not proved a success. The extreme volatility of the drug occasioned difficulty in maintaining an even plane of anaesthesia for long cases. For minor surgery he preferred a closed method, and when this was employed for dental work in children he was of the opinion that the results compared most favourably with those obtained with nitrous oxide. For major operations the closed system combining carbon dioxide absorption was the method of choice, and he recommended that the soda-lime canister should be fitted close to the facepiece. Nitrous oxide and oxygen could be bubbled through a small bottle containing 25 c.cm. of vinyl ether and attached to one of the usual forms of gas-oxygen apparatus. There was no contraindication to the use of a basal anaesthetic with vinyl ether, and as an adjuvant to gas and oxygen it had many uses, particularly in order to obtain additional muscular relaxation during an abdominal operation. Dr. Goldman demonstrated his methods with a cinematographic film showing the use of vinyl ether in dental surgery.

Dr. MARY MAYEUR referred to her experiences with vinyl ether in 348 obstetrical cases. The agent was given either by the open method, when it was dissolved in ethyl ether in the proportion of one to three and administered on an open mask of thin gauze, or it was used as an adjunct to nitrous oxide and oxygen. No maternal deaths were observed in the series, no patient stopped breathing or gave cause for any anxiety, and no remote toxic effects were seen. The series included seventeen patients with valvular lesions of the heart, twenty-nine showing signs of severe toxaemia, and two diabetics. Anaesthesia was induced with vinyl ether and oxygen, and in two to three minutes sufficient relaxation was obtained for the obstetrician to insert a hand and perform the desired manipulations. During traction with forceps anaesthesia could be maintained with nitrous oxide, but it was wise to add vinyl ether when the perineum was distended. The action of this drug in not diminishing uterine contractions indicated its suitability as an anaesthetic in the presence of complications in the third stage of labour, but it was not found satisfactory for external rotation where complete relaxation of the abdominal muscles and of the uterus itself were essential. It seemed to combine the advantages of chloroform—namely, rapidity of induction and absence of irritation of the respiratory tract with an undiminished uterine action and a greater margin of safety for the patient.

Dr. G. E. NESBITT (East London, South Africa) inquired the time taken for induction and the period of anaesthesia obtained when vinyl ether was administered by the one-dose method. Dr. JARMAN believed that for obstetrical work nitrous oxide and oxygen was superior to vinyl ether. Anaesthesia could be deepened by the use of an intravenous barbiturate. Dr. OVERTON asked for guidance in the choice of suitable cases for anaesthesia with vinyl ether in major surgery. Dr. LLOYD-WILLIAMS said she was convinced of the value of vinyl ether in obstetrical work.

In reply Dr. GOLDMAN stated that vinyl ether could not replace nitrous oxide and oxygen when this was given by an experienced administrator equipped with adequate apparatus. So far as major surgery was concerned he felt that it should be used only by the anaesthetic specialist. With the single-dose method the induction time was about fifty-five seconds, and the duration of anaesthesia was in the region of one minute.

SECTION OF ANATOMY, PHYSIOLOGY, AND BIOCHEMISTRY

Friday, July 23

Visceral Pain

With Professor HENRY BARCROFT (Belfast), a Vice-President, in the chair, a discussion on visceral pain was opened by Professor JOHN MORLEY (Manchester). The characteristics of pure visceral pain such as originated in the gastro-intestinal tract were that the only adequate stimulus was tension on the afferent nerve endings, that

its localization was vague, and that it was not referred to the surface of the body. On the other hand, pain that was strictly localized and associated with muscular rigidity and tenderness was of somatic origin, and resulted from stimulation of the nerves of the parietal peritoneum. An example was the shoulder-tip pain produced by stimulation of the phrenic nerve terminals below the diaphragm. The mechanism of this pain would seem to be adequately explained by the observations of Barron and Matthews that afferent impulses from the peritoneum entering the posterior root at one segment could be discharged to the periphery at a different segment along collateral fibres. Such "peritoneo-cutaneous radiation" was an example of "referred pain." Testicular pain in renal or ureteric colic and urethral pain due to stimulation of the trigone of the bladder were of this type.

Professor B. A. McSWINEY described experiments on cats that had enabled his colleagues and himself to trace the distribution of visceral afferent fibres in the vagus and splanchnic nerves. The mesenteries of the stomach, duodenum, and ileum were sensitive to traction, and the small intestine was much less sensitive to distension than the stomach and duodenum. There was a very wide segmental distribution of the afferent fibres from any one part of the gastro-intestinal tract. Visceromotor reflexes could be demonstrated by recording action potentials in the rectus abdominis by stimulation of the splanchnics or the peritoneum, traction on the mesenteries, or distension of the pyloric antrum. Painful distension of the stomach or duodenum caused constriction of the finger vessels in man. Referred pain obtained on stimulation of the phrenic nerve was also discussed.

Dr. E. P. POULTON believed that referred pain could come from visceral stimulation, and cited angina and development of a painful spot on the back produced by oesophageal distension. He referred to "reflex" pain such as occurred in the stomach in appendicitis. He discussed experiments performed by Payne and himself on oesophageal distension. The pain thus produced was relieved by the passage of a peristaltic wave, which caused contraction of the muscular walls and therefore relief of the tension on the nerve endings. Successful peristalsis was painless, but a peristaltic wave which failed to overcome an obstruction did not relieve the tension on the nerve endings, and was therefore painful.

Professor J. R. LEARMONTH (Aberdeen) said that the surgeon might be called upon to attempt to relieve visceral pain of two types: (*a*) that accompanying disordered function, and (*b*) pain of a possibly "neuralgic" type. The surgeon was hampered by the lack of intraneural topography in visceral nerves, so that it was impossible to perform neurectomy close to a viscus without disturbing its function. The further from the viscus the more the viscerosensory fibres diverged; and in order to interrupt these diverging sympathetic pathways very extensive operations would be necessary. The speaker illustrated this point by a series of anatomical diagrams. Of available operations there were: division of the superior hypogastric nerve for pain originating in certain pelvic viscera; stripping of the renal pedicle for painful hydronephrosis: division of the thoracic splanchnic nerves for pain in upper abdominal viscera; section or injection of rami communicantes for abdominal and cardiac pain; and cordotomy.

Professor BARCROFT mentioned an observation of Dr. G. W. Theobald that labour pains could be abolished by infiltration of the twelfth dorsal and first lumbar nerves. Professor MORLEY said that the Manchester school had failed to confirm this observation. Professor A. B. APPLETON suggested that the vague localization of true visceral pain referred to by Professor Morley might be due to the wide segmental distribution of the afferent nerves.

Professor MORLEY, in his reply, said that the real field for the investigation of visceral pain was the human body, and that it was difficult accurately to detect pain in animals. Professor McSwiney had described visceromotor reflexes from the pylorus, but the speaker had yet to see evidence in abdominal disease of viscerosomatic reflexes occurring as the result of painful stimulation of abdominal viscera. In regard to Dr. Poulton's experiments, he wondered how far the oesophageal tension might stimulate adjacent somatic nerves and thus produce the referred pain.

Afferent Nerve Supply of Arteries

Dr. J. DIXON BOYD (Cambridge) read a paper on the afferent nerve supply of arteries, with special reference to pressor-receptors. Approaching the subject from the embryological aspect, he traced the development of the branchial arch arterial system and its afferent nerve supply. He suggested that the sudden closure of the ductus arteriosus at birth was maintained by the pressor-receptor nerve fibres with which its walls were plentifully supplied. It was possible that the cells of the carotid body were chemoreceptor and sensitive to changes in the blood composition of the respiratory gases. Similar collections of epithelioid cells were to be found in the neighbourhood of the arch of the aorta, the ductus arteriosus, and the pulmonary artery, the last-named being sensitive to changes in the composition of the venous blood.

Vascular Reactions of the Kidney

Dr. D. H. SMYTH (Göttingen and Belfast) read a paper on vascular reactions of the kidney in response to carotid sinus and other reflexes. It was found that the kidney possessed an automatic mechanism of vascular control and that its blood flow remained relatively unaffected by general vascular reflexes designed to redistribute the blood supply of the body as a whole, such as could be initiated by stimulation of the carotid sinus, clamping the carotid arteries or aorta above the renal arteries, or the administration of adrenaline. The response of the renal blood flow to these manœuvres was very slight, and was unaffected by denervation of the kidney.

Dr. J. S. LOUGHRIDGE (Belfast) asked if the effect of pituitrin on the blood flow through the kidney had been investigated, and Dr. SMYTH replied that he had not done so. Professor BARCROFT asked if there was any evidence as to the function of the cells of the carotid body. Dr. BOYD replied that the nerve endings in the carotid body appeared to be sensory, but the cells themselves seemed to be secretory, and suggested that the carotid body might bear the same relation to a parasympathetic ganglion as the adrenal medulla bore to a sympathetic ganglion. He pointed out that one would expect such vital organs as the brain, the heart, and the kidney to be independent of the general vascular reflexes of the body, and in response to his question Dr. SMYTH stated that the renal experiments had been repeated on the coronary vessels with similar results.

Chemical Mediators in Nervous Activity

Professor T. H. MILROY (Edinburgh) read a paper on chemical mediators in nervous activity, in which he dealt with the electrolytic changes that took place at phase boundaries such as might be caused by the liberation of acetylcholine at a synaptic junction. Acetylcholine was actually adsorbed on to the membrane and altered the change of the electrostatically fixed layer, where it acted as a cation by neutralizing some of the electronegative ions. The potential at the phase boundary was therefore altered, and this gave rise to the action currents, which could be demonstrated.

Physiology and Biochemistry of Diseases of Muscle

Dr. S. NEVIN read a paper on the applications of advances in physiology and biochemistry to the study of diseases of muscle. He confined himself to a description of electromyographic studies of cases of myotonia, con-

sisting of action current records and pressure tracings from balloons held in the hand and placed over the muscles of the forearm. The clinical features of myotonia consisted of a pathological delay in relaxation of muscles after voluntary contraction, seen particularly in hand-grasping, and aggravated by cold and relieved by warmth. The electrical records showed an outburst of high-frequency action current discharges, both in the flexors and in the extensors, during the period of relaxation. It would appear that there was an increased sensitivity of the end-plate, leading to abnormal resumption of postural tonic impulses.

SECTION OF DISEASES OF CHILDREN

Friday, July 23

Enuresis

With Dr. ROBERT MARSHALL (Belfast), Vice-President, in the chair, a discussion on "enuresis" was opened by Dr. ROBERT HUTCHISON, whose paper was published in the *Journal* of July 31 (p. 206).

Dr. STANLEY GRAHAM (Glasgow), dealing with biochemical considerations, pointed out that the exclusion of organic disease was of great importance, since enuresis might be a symptom of a pyogenic infection of the urinary tract. Pus cells seen in a drop of uncentrifugalized urine and the growth of organisms in culture indicated the diagnosis. When enuresis began for the first time about the age of 4 or 5 years, especially in girls, a pyogenic infection was found in the majority of cases. Adequate treatment of such infection along modern lines yielded satisfactory results, and the question of some congenital malformation of the urinary tract had to be considered if such treatment failed. Chronic interstitial nephritis or renal dwarfism, continued Dr. Graham, was another condition in which bed-wetting might be a leading symptom, usually associated with thirst. Evidence of renal failure was obtained in such cases by examination of the blood for nitrogen retention. Dr. Graham also mentioned diabetes mellitus and diabetes insipidus as causes of enuresis. He was not convinced that spina bifida occulta was a cause of enuresis, but stone in the bladder and acute nephritis had certainly to be considered. As regards treatment, when organic disease had been excluded Dr. Graham thought that the greatest hope lay in the development of psychological measures.

The CHAIRMAN asked about the management of the persistent occasional enuretic who only had a wet bed now and then. He wondered if such occasional lapses had anything in common with the occasional-fit type of epilepsy. He thought that mothers of enuretic children were either too fussy or too careless. Dr. H. MORLEY FLETCHER (President) stressed the importance of early training of infants in control of the bladder, stating that a child of 1 year old ought to be dry by day. No cure of nocturnal enuresis was possible until a child was controlling his bladder properly in the daytime. He also mentioned the type of nocturnal incontinence which developed at puberty, and the occurrence of enuresis after one of the acute specific fevers.

Dr. E. A. BENNET emphasized the psychological aspect of the subject, stating that it was very important to consider the parents and the whole environmental situation of the child. He said that an enuretic child must be made to take the responsibility for the condition, and he had found it useful for such a child to keep a diary of his progress under treatment. Dr. R. E. STEEN (Dublin) agreed as to the importance of the psychological aspect of the subject. The child required help and not blame for its condition. He mentioned the importance of cutting down the food intake as well as the fluid in the second part of the day. Dr. W. R. F. COLLIS (Dublin) was also glad that the psychological aspect had been stressed. In the majority of cases of enuresis he thought there was some conflict in the home. Professor SEYMOUR BARLING (Birmingham) stressed the complicated nature of the function of micturition and the necessity for careful training in the transition stage, when control of the bladder was being gained.

Dr. KATHLEEN MCKEOWN asked about the child coming from a poor home who had received no sort of training at all. The enuresis was sometimes discovered for the first time only when the question of a convalescent home was raised. She asked how long psychological treatment might be expected to take. Dr. T. H. CROZIER (Belfast) agreed that the greatest difficulty was often seen with the hospital patient who shared a bed with several others. Dr. D. C. R. R. JENKINS (Belfast) spoke of his difficulties as medical officer of a public school, particularly when boys wet the bed there and not at home. He had noticed excessive acidity of the urine in some cases.

Tuberculous Cervical Adenitis

Professor BARLING, in a paper on this subject, dealt especially with the modern tendencies in the treatment of the disorder. Tuberculosis of the glands in the neck was, he said, usually a focal infection originating in the oral and nasal tissues, the tonsil being by far the most frequent source of such infection. The disease was uncommon under 2 years of age, and the majority occurred in childhood and adolescence. He thought the disease essentially resulted from low dosage and limited local infection. Diagnosis was often difficult in the early stages, and might account for fallacies as to the efficacy of non-operative measures of treatment. In early cases treatment by the mercury-vapour lamp was to be recommended, especially in the younger patients with a recent infection. Surgical excision was indicated if there was any extensive breaking down of the involved glands, and also if discrete glands or masses of some size remained after a suitable course of non-operative treatment. Professor Barling emphasized, in conclusion, that operations in tuberculous adenitis called for surgery of a high order. Dr. HUTCHISON said that as a physician he saw such cases, and he was struck by the extreme frequency of the association with septic tonsils. He thought that the use of sunlight and other measures were uncertain and time-consuming compared with surgical excision. Professor JOHN MORLEY (Manchester) agreed that the reaction against surgical procedures had probably gone too far.

Thyroid for Premature Babies

Dr. ALAN MONCRIEFF explained that the method of stimulating premature babies by means of thyroid extract had been introduced by Dr. Eric Pritchard, although clearly deriving from the classical experiments of speeding up the development of tadpoles by use of this substance. He gave the results of a controlled experiment at Queen Charlotte's Hospital by which it was shown that the mortality rate among premature babies not receiving thyroid was over three times that among such babies who were given 1/20 grain of thyroid extract daily per pound of body weight during the early days of life. Dr. COLLIS confirmed the value of this method, and mentioned its use in preventing low temperatures in premature babies.

SECTION OF NUTRITION

Friday, July 23

Physiological Bases and Standards

With the President, Sir ROBERT MCCARRISON, in the chair, Professor STUART J. COWELL opened a discussion on the physiological bases and standards of nutrition.

Professor Cowell said that although with further advances in knowledge most of the diseased states now recognized might be definable in terms of definite disturbances of metabolism or nutrition, it would be convenient to limit the sphere of the discussion to those nutritional processes which are known to be more or less

directly related to the intake or absorption of food. He would confine his observations, as the report of the Health Department of the League of Nations had done, to practical questions such as what we could hope to accomplish by dietary recommendations and what diets were most likely to secure the desired effect. The experience of most of those engaged in controlled feeding experiments with laboratory animals had been that diets which promoted the most rapid growth in early life maintained the animals in the most vigorous health in adult life. The question of the maintenance of a state of health and full vigour was becoming more and more widely recognized as one in which right feeding must occupy a prominent position. Frank deficiency diseases due to a low intake of mineral elements and vitamins, and possibly of good protein, were by no means rarities in the British Isles. How far minor degrees of specific deficiencies were responsible for lessened vigour and vitality and lowered resistance to infections and degenerative diseases was a matter of conjecture, but steps were being taken to fill in this gap in our knowledge. Professor Cowell declared that it should be possible to reduce enormously the amount of dental decay in the next generation by securing as perfect a state of nutrition from the pre-natal period onwards as existing knowledge would permit. He regretted the tendency in some quarters to assume that an adequate supply of essential food constituents was that which prevented the appearance of gross signs of deficiency diseases, whereas there was evidence that improved states of nutrition could be secured by increasing the intake to a liberal extent above the protective level. The practical steps he recommended were the provision for everyone of liberal quantities of the protective foods. This could most easily be achieved by increasing the consumption of safe milk and dairy products, green vegetables, eggs, fat fish, and liver, with a corresponding decrease in the consumption of refined sugar and cereals. The essence of the scheme for securing good nutrition in children was insistence on a high proportion of the protective foods. Between the ages of 1 and 3 three-quarters of the calories should be obtained from protective foods, and between the ages of 3 and 7 about two-thirds.

Dr. HELEN M. M. MACKAY dealt with standards of iron nutrition, considering iron deficiency as an example of a condition in which departures from normal were measurable as a result of the establishment of normal standards of haemoglobin level for the adult and for the young child. She pointed out that the existence of these standards had brought to light the fact that iron deficiency was perhaps one of the most widespread deficiencies in human diets. She made a plea for the earlier introduction of mixed feeding in infant work.

Dr. J. F. BROCK (Cambridge) dealt with the question of those people for whom average dietary standards were not adequate. He reviewed the various mechanisms by which disorders of the gastro-intestinal tract could condition deficiency disease in people whose dietary intake was inadequate by ordinary standards. Some of these disorders were apparent at once, but of greater interest were those in which there were no symptoms of gastro-intestinal disorder and the general state of nutrition of the patient was good. He instanced Addisonian anaemia as an example, and stated that recent research suggested that silent disorders of the stomach and intestine were commoner than had been apparent in the past. He referred to examples of interference by one dietary constituent with the absorption of another, and suggested that the remedy was to insist that supplements of concentrated or synthetic vitamins or of medicinal preparations of mineral elements should always be an addition to and not a substitute for a diet which was adequate in every respect in dietary constituents derived from natural foods. He reinforced the opener's plea for liberal rather than minimum nutritional standards.

Dr. J. C. SPENCE (Newcastle-upon-Tyne) quoted instances to support the thesis that conditioned deficiency disease was very common in the practice of medicine. He stressed the importance of individual variation in dietary requirement. Important sources of deficiency states were latent steatorrhoea and gastro-enterostomy. The physiology of appetite had been very imperfectly studied.

Professor W. R. FEARON (Dublin) read a paper on the metallic microconstituents of a modern diet. He said that the number of microconstituents necessary for life was between 40 and 60. He outlined the role of certain of them, especially copper, zinc, and cobalt. Cobalt deficiency disorders had recently been described in Australian sheep. He dealt with the marked differences between brown and white bread in respect to the content of microconstituents.

A paper on the detection of malnutrition, by Dr. W. R. AYKROYD (Coonor, India), was read for him by Professor D. C. HARRISON. His remarks were concerned with the state of nutrition of children in Southern India, where the diet was almost universally defective by Western standards. Marked differences between height and physique as between rice-eating and tapioca-eating communities could be related to diet rather than to race. The incidence of angular stomatitis, xerophthalmia, and follicular keratosis, together with certain anthropometric measurements, had been related to states of nutrition.

Food Intakes and Requirements

Dr. R. A. MCCANCE read a short paper on food intakes and food requirements. Minimum requirements could be fairly accurately estimated, but the margin between that and optimum requirements always varied with the judgement of the observer. He pointed out certain fallacies in the method of calculating family requirements and intakes and their reduction to man-value equivalents, and recommended the measurement of individual food intakes. Professor W. A. OSBORNE (Melbourne, Victoria) pointed out the cheapness of food in Australia. Milk, however, was scarce in the metropolitan areas, and green vegetables scarce in the areas of low rainfall. Although the evidence that malnutrition led to imperfect teeth was incontrovertible, the reverse assumption that imperfect teeth were due to malnutrition was false. Dr. J. H. STRAHAN (Singapore) had found caloric man values well below 2,000 in certain parts of Malaya. Vitamin deficiencies were commonly encountered. Dr. LUCY WILLS had found that B_1 deficiency became manifest in her animals when the metabolism was increased by the rectification of other deficiencies. Dr. S. MILLER (Harrogate) said that by persistent iron therapy he had been able to raise the haemoglobins above the usually accepted normal levels.

SECTION OF OPHTHALMOLOGY

Friday, July 23

Affections of the Eye with Relation to Skin Diseases

With the President, Mr. J. A. CRAIG (Belfast), and subsequently Mr. J. D. M. CARDELL in the chair, Mr. J. H. DOGGART and Dr. G. B. DOWLING opened a discussion on affections of the eye with relation to skin diseases.

Mr. Doggart, speaking from the ophthalmological aspect, drew attention to the great degree of overlapping between the dermatologist and the oculist on purely anatomical grounds. He said that there was, however, a deeper common interest in that ocular treatment may sometimes have to be materially modified owing to the state of the adjacent skin, and in that the eye may have to be protected from remedies applied to the upper part of the facial skin. One characteristic of the skin of the eyelids was its great tendency to oedema, as seen in inflammatory lesions and in such traumatic conditions as the "black eye." A condition of particular interest was blepharochalasis, since this represented the result of

repeated attacks of distension of the skin of the lids. A whole group of new skin irritants, particularly active in the case of the lids, had come with synthetic chemistry; some of the new compounds cause direct local irritation, others, like orris root in shampoos, excite an allergic reaction. The work of Ridley had shown the allergic nature of atropine irritation, and a point of significance was the extreme rarity of atropine intolerance in the absence of some congestive disease of the eye. Blepharitis was frequently part of a general skin condition such as seborrhoea, pityriasis, or sycosis. In the treatment of blepharitis the avoidance of chronic dermatitis in the adjacent skin was important, as otherwise a vicious circle was apt to be set up. Strong chemicals were to be deprecated in the treatment of blepharitis. Mr. Doggart referred to the encouraging results that had been obtained in styes by the use of autogenous vaccines, but in many cases no local infection or existing cause can be established. Corneal lesions had to be regarded as lesions in ectodermal tissues which share the susceptibility of the skin to certain infections and dystrophies. Myxoedema, measles, pemphigus, and dermatitis herpetiformis all illustrate that tendency, whilst the corneal lesion of acne rosacea illustrated a type that was well ground into the consciousness of ophthalmologists. Rosacea keratitis, in particular, was the type of lesion that had to be treated on general lines, and too energetic local treatment avoided.

Dr. DOWLING, speaking as a dermatologist, said that rosacea was to be regarded primarily as a vascular disturbance, becoming troublesome later in life. Gastric disorders were contributory factors only, whilst the menopause with its vasomotor disturbances was not to be ignored. Ocular complications appeared most commonly in the constitutional hereditary type of vasomotor rosacea, and infection played little or no part in it. Drawing a distinction between seborrhoea and dandruff, he classified blepharitis as seborrhoeic and as the result of sycosis of the eyelashes; the first might be complicated by infection, whilst the second was frankly infective. Dermatitis of the eyelids had also a multiple aetiology; infection, chemical irritation, and seborrhoea, in addition to unknown factors, were to be considered in this affection, which begins with an acute attack and tends to become chronic. Rubbing to allay irritation aggravates the condition, and local treatment was difficult. Turning to less common conditions, he discussed lupus, basal-celled epithelioma, pemphigus, warts, and xanthelasma in their bearing on ophthalmology.

In the discussion that followed Mr. J. D. M. CARDELL referred to the gravity of lid involvement in leprosy, a view which was not shared by Lieut.-Colonel R. E. WRIGHT, who emphasized the seriousness of herpes ophthalmicus. Mr. G. G. PENMAN drew attention to the danger of corneal perforation in rosacea keratitis. Mr. R. AFFLECK GREEVES regarded some forms of blepharitis as symptomatic of infection of the meibomian glands. Such infection was also taken as a factor in rosacea keratitis by Mr. E. J. PRIMROSE (Glasgow). Dr. H. MACCORMAC emphasized gastro-intestinal dysfunction rather than vasomotor disturbances in rosacea.

Glaucoma Secondary to Injury

Mr. R. AFFLECK GREEVES read a paper on some unusual cases of glaucoma secondary to injury. He cited four cases, in two of which glaucoma developed after a non-perforating injury; in none of them were any of the usual causes of secondary glaucoma present. In the first case the eye was trephined, the operation being followed by papilloedema and ultimate peripheral constriction of the field, with retinal vascular changes but permanent normal intra-ocular tension. In the last two cases glaucoma developed as the result of the retention of an intra-ocular foreign body, the existence of which had been unsuspected by the patients themselves. In the first case the foreign body proved to be magnetic, and after its removal by operation the tension remained normal. In the second case the foreign body was non-magnetic, and its removal was not possible. By means of a trephining operation normal intra-ocular tension was obtained, the foreign body remaining *in situ*.

The possible aetiology of the glaucoma in these cases was discussed by the PRESIDENT, Mr. CARDELL, and Mr. W. B. INGLIS POLLOCK (Glasgow).

Corneal Transplantation in an Aphakic Eye

Mr. J. V. MCAREVEY (Dublin) followed with a paper on corneal transplantation in an aphakic eye. After pointing out the value of infra-red photography for examining the state of the pupil, the presence of anterior synechiae and the existence of defects in the iris, and stressing the help that could be obtained from double transillumination with the slit-lamp, he gave an account of a patient with bilateral leucoma and cataract on whom he had performed keratoplasty. In the case of the first eye the graft, which had been clear, became opaque; later, tension developed, the graft burst open, and the opaque lens became extruded, ultimately leaving perception of light only. When operating on the second eye the graft was placed eccentrically so as to avoid synechia. The result was better than with the first eye, though the initial conditions had been less promising. The speaker thought it was best not to attempt cataract extraction at the time the corneal grafting was done.

The PRESIDENT congratulated Mr. McArevey on his successful use of infra-red photography, and Lieut.-Colonel WRIGHT discussed the significance of slit-lamp examination, as well as points in the technique of the operation.

Colour of the Optic Disk

Mr. EUGENE WOLFF, in a paper on the colour of the optic disk, drew attention to the great number of small vessels normally present at the nerve head. This helped to explain not only the normal colour but the presence of oedema at the disk in such lesions as renal retinitis. The temporal part of the disk contained a thinner layer of nerve fibres and fewer capillaries than the nasal part. This accounted for the normally whiter appearance of the outer half of the disk, and for the relatively ill-defined nasal edge. Nerve fibres are crowded together most at the disk edge of the upper and lower inner quadrants, a fact which explained the localization of the first signs of swelling of the disk. The white element in the colour of the disk was due to the lamina cribosa and to the medullated nerve fibres behind it. The whiteness becomes exaggerated in primary optic atrophy owing to the disappearance of capillaries and nerve fibres obscuring the lamina cribrosa. The white colour is less marked normally in the baby, and in the newborn the disk appears grey. Two factors entered into this modification: myelination of the optic nerve fibres (with the white appearance it carries) does not reach the lamina cribrosa till after birth, and the lamina itself is almost transparent at birth, becoming more opaque and white with time. The paper was illustrated with histological preparations and photomicrographs.

SECTION OF ORTHOPAEDICS

Friday, July 23

Treatment of Club-foot

With the President, Mr. S. T. IRWIN, in the chair, Mr. DENIS BROWNE opened a discussion on modern methods of treatment of club-foot. The speaker gave a brief account of the observations that had led to the formulation of his theory, the revival of one put forward centuries ago, that club-foot and many other congenital deformities such as spina bifida and arthrogryposis multiplexa congenita were the result of increased intrauterine pressure. Most convincing photographs of newborn children showed how these deformities might easily have been produced *in utero*, the chief pressure points being revealed by deep

and permanent dimpling of the skin. Treatment of the early case consisted in vigorous manipulation of the feet and the application of the splints designed by the speaker.

Mr. E. P. BROCKMAN concerned himself chiefly with treatment. He had abandoned strapping and plaster-of-Paris in favour of the Denis Browne splint, and was certain that his results were now better than formerly. The great advantage of the splint was that it allowed the child to use the leg muscles; not only did this prevent atrophy but the child corrected the equinus deformity by kicking, the forefoot alone meeting the resistance of the splint. Yet in spite of thoroughly efficient early treatment a number of cases remained incompletely corrected, or relapsed after apparently successful correction. For these, open division of the soft parts on the medial side of the tarsus (methods described by Ober, Elmslie, and Brockman) was recommended. Unfortunately this procedure was often followed by relapse. In the end a bone operation might be required, and a triple arthrodesis on the lines suggested by Lambrinudi was probably the best of these last-resort methods.

Mr. T. P. MCMURRAY (Liverpool) maintained that early, thorough, and prolonged treatment would almost always yield satisfactory results. If "over-correction" could be obtained, so that the child could easily hold its foot in a position of calcaneo-valgus, then relapse need not be feared. The stiffness and atrophy following fixation in plaster were not permanent, and there was nothing against the use of plaster if properly applied. In badly treated cases, where manipulation failed to give complete correction, open operation was necessary; but inasmuch as the deformity was bony, the soft-tissue operation could not be expected, as Mr. Brockman had admitted, to give a reasonable prospect of permanent correction, and some form of bone resection would be required sooner or later.

Mr. R. C. ELMSLIE congratulated Mr. Denis Browne both on his ingenious theory of the origin of club-foot and on the efficacy of his splint, which was probably the greatest contribution to the treatment of club-foot during the last twenty-five years. In a way, it was a return to the methods of the nineteenth century orthopaedic surgeons, who corrected the deformity gradually with instruments such as Scarpa's shoe, and whose results were probably better than those of present-day practice. He felt sure that surgeons to-day were too impatient and too prone to resort to open corrections. There were, no doubt, cases in which open operation was inevitable, and he agreed with Mr. Brockman's views on this type of treatment. The soft-tissue operation dated from Rushton Parker and wedge tarsectomy from Walsham, both working in the last quarter of the nineteenth century. Since their time nothing beyond minor refinements had been added.

Mr. H. O. CLARKE (Manchester) had hoped that the openers would produce statistics to give clear definition to their statements. If this were really a discussion on modern treatment, it should have been possible to say how many cases would resist manipulative treatment, how frequently the soft-tissue operation was successful, and so on. The discussion was continued by Mr. ERIC LLOYD, Mr. H. F. MACAULEY (Dublin), Mr. V. J. M. TAYLOR (Nottingham), Mr. IAN FRASER (Belfast), Mr. H. J. SEDDON, and the PRESIDENT.

In reply, Mr. DENIS BROWNE said, in answer to a question, that although disturbance of intra-amniotic conditions was difficult to demonstrate, there was no doubt that abnormal enlargement of the uterus had been noted in a number of cases (hydramnics) and curious pains late in pregnancy (oligohydramnios—or perhaps increased tension in an amniotic sac of normal size) in others. A comparable condition was well known in sheep.

Treatment of Tennis Elbow

A discussion on the treatment of tennis elbow was opened by Mr. G. P. MILLS (Birmingham), whose paper appeared in the *Journal* of July 31 (p. 212).

Mr. K. H. PRIDIE (Bristol) had seen a number of cases in which a tennis elbow was only one result of persistent muscle imbalance—in other words, bad play. There was often an associated stiffness of the neck, which called for treatment just as much as the elbow. Mr. W. E. TUCKER considered that there were three varieties of tennis elbow, one due to a partial tear at the origin of the extensor carpi radialis brevior, another—difficult to cure—due to an epicondylar bursitis, and one resulting from a fibrositic deposit in the olecranon fossa. In his experience general anaesthesia was not always essential for the performance of the manipulation.

Mr. ELMSLIE was surprised that no one had considered the question of focal sepsis. He himself had suffered from a tennis elbow (as a result of manipulating club-feet!), which did not clear up until an infected wisdom tooth had been removed. Mr. D. MCVICKER (Belfast) thought that the lesion was almost always intra-articular.

Professor E. W. HEY GROVES (Bristol) had dealt chiefly with intractable cases, and most of them seemed to belong to the "muscle-tear" group. He had found it useful, as a diagnostic measure, to inject the painful area with novocain. If the pain disappeared completely the diagnosis was confirmed. For the intractable case he recommended freeing the extensor mass at its origin through a small incision. Mr. G. K. MCKEE had seen many relapses after manipulation. In these difficult cases he, too, favoured open operation, and had found on several occasions a well-defined area of oedema at the origin of the extensor muscles. Mr. F. CROOKS (Nottingham) found that nine-tenths of his cases were of the muscle-tear type, and he treated them exactly as he would any other muscle tear—namely, by rest. Two weeks was generally sufficient, followed by gradually increasing active exercise. In the PRESIDENT'S experience the injury producing a tennis elbow was often trivial and out of proportion with the disability that resulted. He believed that the lesion was essentially a tear at the origin of the extensor muscles, frequently followed by a traumatic periostitis. This explained the intractability of the pain in many cases.

Mr. MILLS, in reply, said that while some cases were undoubtedly due to a muscle tear there was no denying that the lesion must be intra-articular in most cases. How else could one explain the limitation of extension, the sensation of something being "out" in the joint, and the sudden recurrence of symptoms following an incautious movement a week or two, perhaps, after a successful manipulation?

Mr. TUCKER read a short paper on athletic injuries to the knee, excluding damaged cartilage.

SECTION OF MEDICAL SOCIOLOGY

Friday, July 23

Health Legislation in Industry

The President (Dr. THOMAS CARNWATH) said that the discussion was appropriate in view of the new Factories Act. Legislation was the framework within which the industrial life of the nation must be carried on, but it was important that it should be neither too rigid nor too elastic, and that the contribution of medical knowledge to the wider realization of a well-ordered society should not be disregarded.

Dr. L. P. LOCKHART (Nottingham), in an opening paper, said that medicine in one way or another was coming into more intimate contact with industry. The Factories Act had brought the possibility of medical supervision on a wide scale into practical affairs. The selection of staff, the training of supervisors, and the investigation of production problems had medical implications. An industrial training for doctors as a postgraduate course with practical experience was essential; merely to visit industries

was quite inadequate, and the proper training took time. In addition to a study of processes some insight into managerial functions and technique was necessary to enable the doctor to understand the problems of administration. Industry was beginning to take medicine into its counsels and give it more than a purely research and supervisory function. A step in the right direction was taken when the Representative Body at the Belfast Meeting had approved an ethical code for doctors working in industry. The Council of the Association also, in order to deal with the wider issues of social medicine, had formed a joint committee with the Trades Union Council. The Factories Act laid considerable burdens on the profession, and the necessary machinery to train and educate doctors for industrial work had to be evolved. Medicine was becoming a function of management.

The Small Factories

Mr. J. E. WILSON (Belfast) said that while many of the great industrial undertakings had their own medical service, there were about 124,000 factories in Great Britain and Northern Ireland in which fewer than 250 persons were employed, and in factories employing between 100 and 250 persons there were about 21.5 per cent. of the total number of workpeople, as against only 16.3 per cent. in factories of 1,000 and upwards. It was in this field that the need for a trained industrial medical service was urgent. He looked for a useful result in this connexion from the establishment of the new Department of Industrial Medicine by the University of Birmingham. Many of the smaller factories would welcome the opportunity to secure the part-time service and co-operation of a fully trained medical officer where a whole-time officer would not be justifiable, and such a man could supervise several small factories. Mr. Wilson mentioned that the first reference he could find to a works doctor was in 1830, when a worsted spinner advised that a medical officer should visit his works daily and watch the effect of the work on the children's health. There were also records of a John Smith of Deanston, near Stirling, who in 1842 retained the services of a "medical gentleman" to inspect the workpeople from time to time. More than fifty years later the various voluntary efforts were recognized by the appointment of Dr. Thomas Legge as the first medical inspector of the Home Office.

A Co-ordinated Service

Mr. ERNEST BEVIN (chairman, Trades Union General Council) said that with the passing of the Factories Act and the placing of the industrial health problem on a more organized basis an opportunity presented itself for a really co-ordinated service which for the first time could be made universal in its application. It had been assumed for a long time that the main thing to be looked for in a case of illness was whether or not the worker was a malingerer. Practically the whole of the laws relating to workmen's compensation and the restrictions associated with certain health services had been based on the supposed necessity for protection against exploitation on the part of the worker. Happily, with the growth of the study of psychology and a deeper understanding of the industrial health problem, this approach to the subject had been changed. Another difficulty was the attitude of the people themselves to the works doctor, who was looked upon as a person employed by the management to protect its interests. Mr. Bevin was hopeful that before long the new joint committee of the B.M.A. and the T.U.C. would examine the whole problem with a view to ascertaining the best possible way of establishing, not a new segregated, but a co-ordinated medical service, with a comprehensive research organization. Taking the great hospitals as centres, what he desired to see was an experiment whereby twenty or thirty insurance practitioners might pool the whole of their insured patients, the State or public authorities providing the necessary building accommodation and equipment for the setting up of a special clinic. Each of those participating, whilst continuing as a general practitioner, would have the opportunity to specialize on some phase of industrial medical work, and works doctors would take part in the work of the clinic, acting as part of the general practitioner service. There should be close contact between such clinics and the hospitals and research institutions, and every possible facility should be given for the carrying out of such work.

Dr. R. E. LANE (Salford), after citing the electric accumulator industry during the last twenty years as affording a concrete example of what could be done to safeguard health in a dangerous industry, spoke of the need for the availability of expert medical advice for the employer on request. Where experimental work was necessary resort might now be had to London or Birmingham University, where a Department of Industrial Hygiene had been opened. In other instances the problem might be investigated by the Industrial Health Research Board.

Irish Experience

Major GRAHAM SHILLINGTON (Minister of Labour) and Mr. J. M. ANDREWS (Minister of Finance) made a few complimentary remarks, the former saying that in social legislation Northern Ireland endeavoured to keep on parallel lines with Great Britain.

Mr. W. J. MCCAGHEY (Chief Inspector of Factories, Northern Ireland) spoke of the great improvement in factory conditions which had taken place during the forty years of his own experience. In the linen industry the ventilating and humidifying plants in most of the factories had recently been completely renewed or overhauled. The small, struggling employer presented the real problem, but he must not be permitted to retard progress. Improved conditions of work were becoming more urgently necessary because of the increasing monotony and continual speeding up in these days of mass production and mechanization. It was common ground that many occupations had injurious effects on the physical condition of those engaged in them. The employer and his managing staff could not be expected to detect signs of physical trouble among the workers. Only a trained medical man could do this, and it was therefore vitally important that the medical profession should become more acquainted with occupational diseases. The factory inspector would always welcome the works doctor and regard him as a collaborator.

Economic Considerations

Sir FRANCIS FREMANTLE, M.P., said that the real difficulty was the small business. How could a Belfast employer whose handkerchiefs cost 1s. 4d. a dozen to make compete with Japanese imports at 7½d. a dozen, still less spend money on improving his buildings or conditions of labour? Industry was also up against the appalling prospect of a declining population, with an increasing number of aged persons to be supported. The main hope was not through standardized legislation, sympathetically administered as it was by the able inspectorate of the Home Office, but by the drawing together of employers and employed and of their organizations. In this task the medical profession must play a leading part. The medical student, however, was not trained for this purpose; he was trained for the treatment of disease and not its avoidance in the individual or in the mass. A fundamental reform of medical education, based on the application of physiology to the individual and national life at large, was essential for the future of industrial health. Mr. MCADAM ECCLES said that he felt history had been made in that Section. He mentioned particularly the new conditions to which the introduction of the petrol engine had given rise. In this field both accident and disease might be dependent upon strain, and a continuance of both mental and physical fitness was essential for their avoidance. It was for the medical profession to realize the causes, effects, and methods of prevention and alleviation of strain, and particularly to diagnose strain in the early stages.

Disabilities Industrial and Non-industrial

Dr. J. F. BRAILSFORD (Birmingham) referred to the difficulty of establishing the effect which industry had had in the causation of a particular disability. Often it happened that disability did not arise until years after the first exposure to risk. He frequently came upon isolated cases in which the condition, although giving rise to suspicion, could not be fastened upon any industry. A marble worker, for example, might be found to have fibrosis of the lungs, and yet it was very difficult to establish industrial silicosis as a factor.

Dr. LEONARD KIDD (Enniskillen) mentioned that Northern Ireland was in the rather unenviable position of being the only self-governing Dominion which had not a Ministry of Health. He failed to see how full justice could be done to the workers without such a Ministry. Dr. H. C. SMITH (London) said that among his insured patients were a number of garage employees, and over a period of eighteen months or two years he had seen fit and healthy young fellows become gradually more neurotic and get gastric and other troubles "which should belong to men of seventy." Some of these men feared that if they "went sick" they would possibly lose their jobs, even though they had been working on them for fifteen or twenty years, and this fear reacted prejudicially on their condition.

Dr. H. E. COLLIER (Reader in Industrial Hygiene, Birmingham University) pointed out that the one purpose of industrial hygiene and medicine was to study the industrial factor in the production of disease and the creation of health. The Department at Birmingham with which he was associated hoped to be able to play a part in the industrial medical education of that large body of medical men and women who were urgently needed to-day to help to recognize the industrial factor in health and disease. Many types of practitioners would be required for the new health service for industry. A few whole-time specialists would be necessary, as well as a large number of part-time industrial medical men and women, but there must also be a much larger number of general practitioners working in industrial areas and possessed of an accurate knowledge of the conditions obtaining therein. Such practitioners would be able to recognize deviations from health and take part in industrial medical research.

Colonel A. B. MITCHELL stressed the need for impartiality in the medical examiner called upon to pronounce on industrial disease. In his own experience as an examiner he could not recall an employer who had ever expected him to give an opinion other than the one he had honestly formed. Dr. J. S. MORROW (Belfast) mentioned the difficulty of ensuring that workmen took ordinary hygienic measures—for example, in the case of plumbers working with lead, that they washed their hands before taking a meal. Dr. W. PATERSON (Willesden) agreed with Mr. Bevin as to the necessity for sympathy in examining an employee or candidate for employment. In the factory in which he was a medical officer he was on such good terms with the men that he could ask them such questions as what time they went to bed and whether their wives were good cooks. He never rejected a candidate right away, always suggesting to him that if he saw his doctor and received treatment he might be fit for the job for which he was applying. He welcomed the new provision whereby young people under 16 would come into national health insurance. There had been a tendency for young persons of that age to forego a visit to the doctor because they knew that if they waited until they were insured they could get the doctor's services for nothing. These young people ought to be got into the habit of consulting their family doctor on every occasion. The doctor who laughed at a person who came along with a trivial ailment did not know his job. Municipal clinics did excellent work, but they did tend to break the habit of going to the family doctor. The insurance practitioner ought to be the medical officer for the smaller factories, though he might not have an official appointment.

Replies to Discussion

Dr. LOCKHART, in reply, said that industrial doctors did not want to remain in isolation. When there came a chance of joining in with other people no one would be more willing than they. Mr. BEVIN said that there need be no fear that an industrial medical service was going to ruin industry. That was contrary to the experience of all industrial history. One of the great difficulties in getting the insurance practitioner into part-time industrial service was the fear of other insurance practitioners that he would steal their patients. The only way to get over it was by co-operation, and the medical profession had grown up on individualism. The B.M.A. would fight against a rigid State medical service, but if it did not want such a service it must offer co-operation somewhere. Accordingly he had projected this idea of a clinic which could take in the small factories in the district and pool the medical resources. What he wanted to see was a complete medical service which would avoid the rigidity of a legislative scheme and at the same time furnish all the benefits of co-operative effort. In a final remark about the London bus dispute Mr. Bevin mentioned that he was inclined to think that foot trouble might have an unlooked-for importance in the health of the drivers. The ball of the foot was constantly experiencing the vibration of the accelerator, and the foot might be used for dropping the clutch as often as 1,800 times in a seven-hour shift. He believed that this constant use of the foot affected the nervous system in a disadvantageous way. At any rate it was a matter for medical investigation. The posture in the driver's seat, causing a contraction of the stomach, might also account for not a few troubles.

SECTION OF HYGIENE AND PUBLIC HEALTH

Friday, July 23

Operative Treatment of Laryngeal Diphtheria

With Professor W. J. WILSON, President of the Section, in the chair, subsequently occupied by Dr. E. H. T. NASH, a discussion on the operative treatment of laryngeal diphtheria was opened by Dr. A. GARDNER ROBB (Belfast), whose paper was published in the *Journal* of August 7 (p. 264).

He was followed by Dr. J. M. KENNEDY (Sheffield), who discussed briefly the results which had been obtained in Lodge Moor Hospital, Sheffield, over a period of fifteen years. He gave comparative figures of total admissions, gross diphtheria mortality, and operative rate, and indicated the frequency of and the results following tracheotomy and intubation. A comparison of end-results seemed favourable to tracheotomy. Out of 10,372 patients admitted there were 327 deaths, a mortality of 3.15. Tracheotomy was performed on 352 cases and there were eighty-three deaths, a mortality of 23.57 per cent.

Dr. J. D. ROLLESTON outlined the history of operative treatment, and considered at some length the prognostic significance of serum reactions. His attitude towards serum administration was conservative; he had "never yet seen a case of diphtheria recover after intravenous serum which would not have recovered after intramuscular injections."

Dr. W. G. WILLOUGHBY (Eastbourne) presented the experience of a small community over a period of many years. He quoted figures from Vienna which showed good results following intubation alone. He reported also a case in which death immediately followed the injection of evipan in a case of diphtheria.

Professor J. JOHNSTONE JERVIS (Leeds) asked about the type of *C. diphtheriae* responsible for infection. Their

experience in Leeds was that no case of laryngeal diphtheria was caused by the "gravis" strain; in all such cases the "mitis" strain was found.

Dr. J. McI. GIBSON (Huddersfield) reported the continuance of gravis infection around Huddersfield, with very few cases of laryngeal involvement but two definite cases which were proved to be due to gravis strains. Dr. GARDNER ROBB closed the discussion, still maintaining the advantages of intubation.

Bragg-Paul Pulsator

Dr. C. J. MCSWEENEY (Dublin) read a short paper on the treatment of post-diphtheritic respiratory paralysis by the Bragg-Paul pulsator—an apparatus designed by Mr. R. W. Paul at the suggestion of Sir William Bragg. This apparatus was demonstrated by Dr. Kerridge at the Annual Meeting in Oxford last year. Among roughly 2,000 cases of diphtheria treated in the last two years thirty authentic instances of respiratory paralysis had occurred at Cork Street Hospital. Almost without exception the involvement of the respiratory muscles occurred during the sixth or seventh week. These cases had been treated with the pulsator, which consisted of a distensible rubber bag applied around the patient's chest and rhythmically filled with, and emptied of, air from a bellows. Twenty-two of the cases made uneventful recoveries. One of the eight fatalities had been treated in the apparatus for four days, when the machine broke down, and before a new part could be made the patient died. The remaining seven cases died of causes other than respiratory failure—six of them from late cardiovascular failure and one of them from gangrene a fortnight after coming out of the pulsator. There was no interference with the routine management, nursing, and treatment of patients, all of whom were nasally fed—since there was a coexistent pharyngeal paralysis—while being artificially respired. Questions from Dr. ROLLESTON and Dr. WILLOUGHBY were answered by Dr. McSweeney.

Diphtheria Immunization

Dr. G. A. W. NEILL (Huddersfield) read a paper on the variance in type distribution of *C. diphtheriae*. Professor JOHNSTONE JERVIS led the discussion which followed. Dr. E. H. T. NASH reported the end-results of an experiment in controlled diphtheria immunization, and stressed the value of publicity.

Dr. G. CHESNEY (Poole), in a paper on diphtheria immunization, pointed out that there was no such thing as inherited natural immunity to diphtheria. An active resistance of the body to the invasion of the bacillus was not present at birth. It must be acquired and could be acquired only by contact with the bacillus or its toxin. The discovery some fifteen years ago that diphtheria toxoid was as efficient as either the bacillus itself or its toxin in stimulating the production of the protective antitoxin placed artificial active immunization on a safe and secure basis. Dr. Chesney then discussed at length the factors which had to be considered in selecting an immunizing agent. To be regarded as eminently satisfactory a prophylactic should be (1) completely free from toxicity, (2) free from liability to cause sharp reaction, (3) capable of consistently producing a high grade of Schick immunity, (4) capable of rapidly developing this immunity with a minimum of injections, and (5) capable of producing an immunity sufficiently durable to protect from infancy to adolescence. Of the preparations most commonly used in this country toxoid antitoxin floccules, formol toxoid, and alum-precipitated toxoid approached most closely to the fulfilment of these conditions. There was little doubt that alum-precipitated toxoid was superior to both toxoid-antitoxin floccules and formol toxoid in meeting the need for the consistent and rapid production of a high grade and durable immunity, with a minimum of injections, but there was still some debate as to the requisite dosage and number of injections. Alum-precipitated toxoid used in two doses of 0.2 c.cm. and 0.4 c.cm. at an interval of four weeks gave a high level of Schick immunity. The initial small dose, acting as a detector of hypersensitive persons, eliminated reaction difficulties. The high Schick-negative rate obtained obviated the necessity for routine Schick testing after immunization. Of 1,468 children immunized in this way 1,300 were available for retest two months later. In only three children was the Schick test positive. The immunizing efficiency of the prophylactic therefore approached 100 per cent. Reactions immediately after injection caused no material trouble. The grade of immunity reached was high, for over 99 per cent. of the children tested with the "fourfold" Schick dilution were negative to this test. One hundred and twelve children who had been negative two months after immunization were retested eighteen months later; all were negative.

Dr. R. J. MAULE HORNE (Poole) said that he was an enthusiastic believer in diphtheria immunization, but that without great patience, persistent education, and especially great caution its success would be jeopardized.

Dr. J. GRAHAM FORBES described at some length the progress which has been made in the past five years in diphtheria prevention. At the same time he pointed out that diphtheria still exacted a heavy toll from the child population in England and Wales, with a yearly average for the past ten years of over 57,500 cases with 3,100 deaths, London alone having 11,000 cases and 400 deaths each year. He contrasted these statistics with those obtaining in New York and Montreal.

The meeting concluded with a paper from Dr. J. E. H. GATT (Malta) on the control of undulant fever in Malta with reference to the consumption of goats' milk. After discussing briefly the high incidence of undulant fever and the high infant mortality in Malta Dr. Gatt pointed out that since 1898 goats' milk had been banned as an article of food for all troops and marines in the Mediterranean, with the most beneficial results. Notification of the disease had been made compulsory, and the destruction of infected goats was carried out systematically. The civil Government had finally decided to exercise complete control over the milk industry of the island, and it was hoped to secure clean and safe milk for all at a reasonable price by proper pasteurization and distribution, and thus diminish the problems of undulant fever.

SECTION OF OTO-RHINO-LARYNGOLOGY

Friday, July 23

Care of Vocal Cords in Singers and Speakers

With Mr. HENRY HANNA, President, in the chair, the discussion on the care of the vocal cords in singers and speakers was opened by Sir MILSOM REES, whose paper was published in the *Journal* of July 31 (p. 208).

Mr. VICTOR F. LAMBERT (Manchester) said that this subject was the common responsibility of the laryngologist and the teacher of singing, but unfortunately there existed a lack of co-ordination between the two. Both parties were responsible, but a third, the student, was not free from blame. It was very difficult to persuade a school teacher or public speaker that it was not a "bottle of medicine" but rest and a course of voice production which he needed. Such a patient would consider his golf professional futile if he recommended a bottle of embrocation to correct a slice or a pull. At present the advice of the laryngologist was sought only in an acute crisis, whereas the speaker felt that mutual trust should be shown from the beginning of a student's career, when, if the whole of the vocal mechanism were examined, an anatomical record made, and abnormalities corrected before the method of production became fixed, surgery would do most good and least harm.

As the guest of Sir Milsom Rees at Covent Garden he had been able to see and appreciate the results of his treatment of the artistes there. He had been deeply impressed, and proposed in future to copy the technique. He had had personal experience of the tonic effect of the treatment. Of great importance were the earliest signs of failing voice: (1) the inability to start a tone softly without making use of a glottis stroke or jerk in the attack; (2) the inability to pass from a full voice to a half voice without discernible change in quality and adjustment of the organ itself. Constant hoarseness with paraesthesias and even actual pain added to the embarrassment of the singer. There might even be a feeling of tightness such as was experienced in globus hystericus. Bad habits such as hawking and hemming were adopted, and examination showed faulty apposition and bowing of the cords on phonation.

In the speaker's opinion "modulation" preceded "articulation," and he regarded singing not as an offspring of speech but as a descendant of a common physiological ancestor. It was, however, something of a trick, and one not easy to learn. Some were potentially better endowed than others, but none could become finished performers without practice and training. Practice produces habits, and the longer they continued the harder they were to change. Hence the importance of observation by a laryngologist, who would be able to recognize the bad effects of faulty habits while there was still a chance to eradicate them. The basis of treatment was: (1) vocal rest; (2) change in range if wrongly classified; (3) change in method of production (E. J. Moure). To this he would add the local treatment of Sir Milsom Rees. The greatest dangers to a singer's welfare were: (1) failure to recognize the individual requirements of each voice; (2) the tendency to emulate the voice of a distinguished artist although the voice might not be of the same pattern; (3) failure of a teacher to realize that bad methods would give results for a time and that a damaged mechanism would function a long while before failing; (4) the laryngologist who used "laryngitis" to cover the "multitude of his sins of ignorance."

Mr. C. J. BRENNAN could not agree with the apparent pessimism of Sir Milsom Rees with regard to the use of the human voice for singing. He thought that the human voice was admirably adapted to and was intended for musical use with words, called singing. The articulation of the consonants in singing remained the same, while the vowel sounds took on the notes of the melody. The speech must, however, be well placed for the vowel sounds to flow out, tonally expanded, to constitute natural singing. The difficulty with singers was that their "inner hearing" of their own voice gave but little idea of the outward product. He advised those present to listen to a record of their voice. A difficulty with young singers was the urge to do something. Hard work they seemed to feel would shorten the process. In fact, conscious effort interfered with the mechanism. "Let the voice sing, don't make it sing." It was no use looking for too early results. The control of breathing was vital. Add to this the advice to "sing as you speak, provided always that you speak properly." Range must be observed. Accidents were understandable if you realized the immense force passing the cords in a dramatic note. Perfect balance and control was essential, and he could imagine such balance being upset by a drop of moisture. In his opinion many could be good without necessarily being champions, and to be a champion needed some endowment and not brute force alone. One trouble for the student was the appalling division of opinion among teachers as to method.

Mr. DONALD WHEELER, a Vice-President, took the chair for the subsequent discussion.

Mr. T. B. JOBSON pleaded for a central authority from whom reliable voice-training teachers could be recommended. He felt that their appointment to schools should be more general. Mr. J. W. KILLEN (Londonderry) had come more to learn than to contribute. He had learned much. He stressed the importance of careful investigation of the posterior sinuses in cases of pharyngitis and laryngitis. Mr. L. GRAHAM BROWN said he only had occasional cases, but it was none the less important to treat them properly. He would like to know how much Sir Milsom Rees relied on the psychological effect of his treatment. He mentioned the functional aphonia after the first night and the visit with the anxious manager. He had done plenty of tonsil and nasal operations in singers, and felt that where he had not done good he had at least done no harm. Sinus diseases must be cleared up.

Mr. T. O. GRAHAM (Dublin) was interested in Sir Milsom Rees's explanation of the falsetto note. He could not understand how it could be produced by the false cords. He was anxious for advice on nodules; how long should the voice be rested? He saw teachers more than singers, and he removed the nodes when they were fibrosed. In a case of recurring submucous haemorrhage he had used the galvanocautery. He felt that the less medication and the less that was done generally the better the results. Mr. C. DE W. GIBB (Gloucester) found it very difficult to get breath control taught. Mr. E. S. B. HAMILTON (Manchester) asked for information as to diet and exercise, and especially with regard to alcohol. He had once used an injection of strychnine. Mr. R. R. WOODS (Dublin) asked if Sir Milsom Rees had used the stroboscope, and wanted a definition of "catarrh" as used by him. Dr. H. HANNA (Belfast) stressed the importance of co-operation between teacher, student, and laryngologist. It was always difficult to get the subject to rest. Mr. T. A. CLARKE (Canterbury), Mr. F. C. W. CAPPS, and Mr. F. A. MACLAUGHLIN (Belfast) also spoke.

Mr. LAMBERT in reply disclosed that he had started life as a singer. He had been impressed by the real physical effect of Sir Milsom Rees's spray treatment. There was far more than psychological effect in it. In his view the control of breathing must be from below; the larynx had as much to do with muscle tension and balance as it could manage without acting as a sphincter. Captain BRENNAN agreed that breathing was important. He quoted the instance of a Parisian vogue for "abdominal" breathing in singing. He felt that control of the "forward" end of breath flow was as important as the lower end.

Sir MILSOM REES said it had been his "job to crab singers." Managers asked for his advice about contracts. Madame Schumann owed her long career to short, narrow, and elastic vocal cords. One could tell from the examination of a larynx something about the "life" of a voice. Better tuition had given a greater number of good voices, but there were now fewer "excellent" voices. The treatment of nodules depended on "when they came to you." A vesicle required three or four days' rest, with an astringent spray and Moure's exercises, a superficial haemorrhage seven to ten days' rest. Since the war he had not seen one singer's nodules which needed removal. If they recurred it was due to bad production. Occupational nodules (hawkers', etc.) should be removed. Treatment did help other than psychologically in that a free nose and a clear head gave freedom of production. Alcohol was fatal: first, it was not necessary, and, secondly, it might lead to intoxication. Strychnine he had never tried.

Volume XV of the *Guide to Current Official Statistics* has been prepared and issued by the Permanent Consultative Committee on Official Statistics. It is a systematic survey of the statistics appearing in all official publications issued in 1936, and the nature of the information available on any subject and the official publication in which it is contained can be readily ascertained. The *Guide* contains over 400 pages, and is obtainable from the sale offices of H.M. Stationery Office or through any bookseller, price 1s. (by post 1s. 6d.).

Nova et Vetera

A BIBLIOGRAPHICAL BIBLIOPHILE

Of medical men who have sought and found recreation or a career in literature there is no end. Literary men who have interested themselves in the history of medicine, while not so numerous, have often become its greatest ornament. How commendable, therefore, is the policy of the Royal Society of Medicine's History Section to recognize other than medical qualifications for its membership.

Leonard Leopold Mackall, president of the Bibliographical Society of America, who died on May 19 at the age of 58, was fond of describing himself not as a medical historian or librarian, but as a mere bibliophile—bibliographer or bibliographical bibliophile. A familiar figure in Osler's world, a glance through the *Bibliotheca Osleriana* (the completion of which had been entrusted to him among others) shows his name as donor of some of its most precious items, accompanied by meticulous bibliographical notes. He helped to see Osler's *Evolution of Modern Medicine* through the press, and for the *Contributions to Medical and Biological Research* dedicated to Osler he wrote a scholarly paper entitled "Servetus Notes." He was interested in the early history of appendicitis. The New York Academy of Medicine in 1930 had the happy idea to make him its consultant in bibliography, thus publicly recognizing his services to medicine.

As a bibliographer Mackall delighted in accuracy and the over-elaboration of what to some are dry and soulless minutiae, but his literary style was pleasant and his humour refreshing.

Oslerians on both sides of the Atlantic will miss his help, always generously given, with their bibliographic and historical research; will miss, too, his handwriting, so large, so sprawling, and yet so characteristic and so friendly.

W. R. B.

AN AMERICAN FIELD DRESSING STATION SEVENTY-FIVE YEARS AGO

The following account of a Field Dressing Station, Northern, during the American Civil War (1861–2) is a copy of the description by the late Lieut.-General E. O. Hewett, C.M.G., written when he was military observer for the British Government. At that time he was a captain in the Royal Engineers. Lieut.-Colonel E. Hewett, O.B.E., C.M.G., D.S.O., has kindly given me permission to publish this extract.

"I was travelling with a Doctor (British) whose chief interest of course is the hospitals. I always think it as well to see everything, so, having half a day to spare, I agreed to go with him over the main field hospital camp at Smokestown. I am glad now that I did so, but I'd never care to attempt the same a second time. There were some 3,000 wretched creatures (not sick but all brought for operations, lying under the trees within a space of say 300 yards square. Most had straw to lie on, but not all, and there were a few tents. There were about 60 surgeons without coats (chiefly French, German, and Irish) covered with blood and dirt, chatting, arguing, laughing and swearing, and cutting and sawing more like devils and machines than human beings. Large heaps of legs and arms were piled here and there, all sizes and stages of decomposition; the odour was fearful, and the whole air felt thick and putrid, while myriads of flies buzzed and darted rapidly about. I saw about fifty limbs taken off during the two hours I remained there.

"The Yankees have creatures they call Medical Cadets, and these fiends, the moment a limb was off would pounce on it from behind trees and fight for it, and in a few minutes it would be cut into little bits for practice.

"I thought I could stand a good deal, but the stench, heat and flies was so fearful that it made me feel rather queer, and when I saw one of these cadets seize a leg almost before it was off, and holding it by the toe, run away with it, still quivering and bleeding, and ragging and bumping it along the ground, while the other devils chased him, it made me feel for a little time so sick that I felt myself grow pale, and dared not speak for a few minutes. However, I was determined to conquer it and did, though I could hardly help hitting some of the surgeons and cadets. I could talk and help the poor fellows themselves.

"War certainly has two sides to it, though happily it is seldom or never that such repulsive scenes as this take place. It was doubly sad, too, as all the men spoke our language, and looked like Englishmen. The Yankees are a queer people; they have no delicacy in taste or feeling. We always keep the actual operations (when and where practicable, as in this instance) a little apart from the sight of the sufferers or hidden a little, but the Yankees do not attempt his—one thing is that most of their surgeons are Irish and German adventurers who know nothing, and care little, for the Americans themselves—but still to me do not appear to care, whereas it would not do with our men.

"The Yankees are bearing the pain marvellously, and are most patient and cheerful, poor fellows; it was grievous to see such splendid men wrecks for life, and sometimes you would see an old man or a young boy amongst the equally shattered but equally calm."

Bournemouth. JAMES EWING.

ANNALS OF MEDICAL HISTORY

The May number of the *Annals of Medical History*[1] opens with Dr. R. N. de Jong's account of chronic hereditary chorea, usually called Huntington's chorea. Although giving George Huntington, who died in 1916, credit for the best account in 1872, Dr. de Jong points out that the features of this chronic chorea had been described before by C. O. Waters (1841), C. R. Gorman (1848), Germain Sée (1850), and I. W. Lyon (1863). Huntington's description was based on cases he had seen with his father and grandfather on Long Island, and so is a result of inherited observation. In the article entitled "The Strange History of the Vesicle in Scabies" Dr. Montgomery recalls the time, more than a century ago, when scabies was one of the most important diseases in the philosophy of medicine, and was claimed by each of the opposing forces of the humoralists and the contagionists. Dr. Jameson of Saranac Lake pays a tribute in "John Leake and Childbed Fever" to a London obstetrician in the eighteenth century who was overshadowed by the assertive personality of John Denman, "who lost no opportunity, by fair means or foul, to disparage a rival's ability." The plague of 1603 in England is described by Mr. Charles Mullett. Under the title of "Moon Madness" Dr. W. H. Stahl discusses the superstitions about the influence of the moon on menstruation, childbirth, epilepsy, and mental disorder; and in Chapter V of his essay "The Doctor on the Stage," Dr. H. Silvette, writing on the *virtuoso*, has much to say about Samuel Pepys and the Royal Society.

[1] New Series, vol. 9, No. 3, 1937. Edited by Francis R. Packard, M.D. (Pp. 201–292; illustrated. Volume of six numbers, £2 10s.; single numbers, 10s. 6d.) New York: Paul B. Hoeber; London: Baillière, Tindall and Cox.

FAR EASTERN RURAL HYGIENE

CONFERENCE IN JAVA

A Conference on Rural Hygiene for Far-Eastern Health Administrations, summoned by the League of Nations Health Organization, opened at Bandoeng in Java on August 3. It is one of a series that have been, or will be, held in different parts of the world. The proposal to hold this conference was made at the Assembly in 1932 by the representative of India, supported by the representative of China, and was repeated with further support at the Assembly in 1934. The Bureau of the Health Committee was asked as early as 1932 to make a preliminary study of the question and obtain the opinion of the advisory council of the Eastern Bureau of the Health Organization in Singapore, and that council reported in favour of holding the conference. This reflects the growing interest taken in raising the standards of living of the rural population, which comprises the overwhelming majority of the teeming millions of the Far East.

A preparatory committee made a tour around India, Burma, Siam, Malaya, Indo-China, the Philippines, the Netherlands East Indies, and Ceylon, and drew up a report for discussion at the conference. The purpose of this was to state on the basis of a mass of facts, observations, and experiences the fundamental terms to which the problem of rural medicine and health can be reduced in the conditions prevailing in the Far East. The chapters of the report give a general indication of the matters discussed under each item of the agenda of the conference. The agenda comprised: (1) health and medical services; (2) rural reconstruction and collaboration of the population; (3) sanitation and sanitary engineering; (4) nutrition; (5) measures for combating certain diseases in rural districts.

Health and Medical Services

The first chapter surveys the different forms of health and medical services that exist in the Far Eastern territories represented at the conference. It draws attention to "the burning question whether, having regard to the desires of Asiatic society, one or more than one type of doctor should be trained. In other words, should there be only one body of fully trained medical men, or should there also be schools for the rapid and hence incomplete training of students?" The pros and cons of the practice of training so-called "semi-qualified" or assistant doctors are discussed, and the possible alternative of auxiliary medical staff under efficient supervision by doctors trained on European lines is indicated.

"European medical science is everywhere invading Asia, where it encounters what has remained of the old medical lore of Hindu medicine, the Arabian school, and the old Chinese institutions, all of them based upon traditional empiricism. The importance of all this should not be underestimated, and official medical science, over-confident of its own infallibility and of the inferiority of this ancient popular medicine, has made the mistake of scorning it. Yet many an old precept can be found which accords with our own views, even though put in a somewhat different form. Thus, frequently we strongly oppose the use of the medicinal herbs and other substances of popular Eastern medicines, forgetting that our own pharmaceutical industry has produced, in addition to sound and valuable medicines, much that it would have been better never to administer to any sufferer. The study of these ancient medical cultures and of their remaining vestiges would be of value. They should have a place in the training, so that the young doctor may have at least an elementary knowledge of these questions when he begins practising. Such knowledge is essential if he is to adapt himself to his social environment. Lastly, it would be desirable honestly to consider how far these old medical traditions can be reconciled with our own principles, instead of rejecting them in a body as useless and obsolete."

Rural Reconstruction and Sanitation

The second chapter begins by pointing out that there is no more familiar cry in the newspapers of every Far Eastern country than rural reconstruction. It is also a cardinal point in the policy of Governments and in the activities of voluntary bodies and charitable associations of all kinds. This is particularly the case in India.

"It is perhaps somewhat strange that this concentration of interest in the rural problem should occur simultaneously in all these countries, and that it should be so recent and so comparatively sudden. But it is indisputable that a reorientation of governmental policies is taking place, and that the needs of the distant and inarticulate peasant are being weighed in the council chambers where hitherto his voice has been little heard. . . . With the perception of the possibility of improved conditions of life is growing the desire to attain them. The progress of education is having its effect. Interest is being shown in the improvement of health, in economic problems, and in all matters which affect the maintenance of a reasonable standard of living. The dullness of village life is being dissipated by the dawn of rural reconstruction."

In this connexion the importance of education and of the spread of the co-operative movement is stressed, and methods by which health authorities enlist the interest and support of the peasants are described.

Chapter 3 of the report covers the subject of sanitation and sanitary engineering in the agenda. Housing, drinking-water supply, latrines, manure and household refuse, and fly control are all discussed.

Food Problems

The fourth item on the agenda is covered by the chapter on nutrition in the preparatory report. Investigations into the state of health of the peoples of the East, no matter what their starting-point, lead back invariably to the question of nutrition. Dietetics is a branch of science which has a variety of aspects in Asia; there, even more than elsewhere, dietetic research requires the close co-operation of chemists, physicists, agronomists, physicians, veterinary surgeons, and economists.

The prevailing opinion is that the state of nutrition of the populations of rural districts is not wholly satisfactory in any of the Asiatic countries. It is thought that of the 1,150,000,000 inhabitants of that continent not less than 75 per cent. have a diet below the standards fixed by European science. From various publications, and from the information that the committee collected during its tour, it appears that a large part of the population is living on the border-line of the minimum requirements, while millions are even below that level.

"These statements should, however, be accepted with some caution, because an examination of the studies so far made in Asia shows that few accurate statistics are available. Whereas in other continents there has been on occasion overproduction of food at different times and places, so that production has been restricted and food even destroyed, this has never occurred in Asia. Everything produced is always quickly consumed, and, so far from there being a limitation of crops, the dominant question everywhere is how to increase them. An exception may be made as regards a few articles intended for the world market, such as sugar and copra. The food problem in the East is almost exclusively a rural problem, since more than 90 per cent. of the population live outside the towns."

This chapter reviews such subjects as the composition of the diet of the rural populations, the chemical composition and biological value of the different foodstuffs, different diseases of alimentary origin, and the proportion of the family budget spent on food. The final remarks are to the effect that a well-fed and healthy population is vital to every country for its development and future. But in all Asiatic countries only relatively trifling sums are allocated to the detailed study of national nutrition or to attempts to improve it. Some authorities think this is a field that should rather be left to private initiative. The public authorities still fail to appreciate the great importance of food problems. Only in the event of war or economic depression do they decide to act. The growth of the population and the ensuing increased importance of ade-

quate nutrition will help to wean most Governments from this short-sighted policy. The assertion often made that very primitive peoples show an unfailing intuition in regard to their food supply in time of need is obviously exaggerated, and, indeed, is contradicted by practical experience. A small measure of intuition there certainly is, but it can easily be overrated. If the conference helps to bring about a change in the views of some of the Governments that will in itself be an appreciable advance.

Need for Administrative Contacts

The final chapter reviews the chief diseases affecting the rural population of Far Eastern countries and the measures for combating them. These diseases are: malaria, plague, ankylostomiasis, tuberculosis, pneumonia, yaws—described as "the rural disease *par excellence*"—and leprosy. One of the chief results expected from the conference is improved contacts between the health administrations of different countries and colonies, and even of different provinces in, for instance, India. At present health administrations often work at similar or identical problems without knowledge of each other's activities and their results.

THE NATION'S HEALTH SERVICES

ANNUAL REPORT OF THE MINISTRY

The eighteenth annual report of the Ministry of Health,[1] for 1936–7, was published last week. The seven parts into which it is divided deal successively with the Ministry and the public, finance, public health and assistance, housing and town planning, local government organization and finance, national health insurance and pensions, and the work of the Welsh Board of Health. In presenting the report Sir Kingsley Wood refers to the striking progress in national health since the Ministry of Health was first established in 1919, the post-war housing achievement and accompanying changes for the better in living conditions and social habits, the various local health services, and the health insurance and contributory pensions schemes. Turning to the period covered by the present report, he suggests that this and the current year may appear to the future historian as noteworthy for the steps taken to strengthen what seemed to be the weakest links in the existing chain of public provision for health and welfare.

"Thus the setting up on a national scale of a public service of skilled midwives, with the detailed improvement of their existing maternity services by a large number of local authorities, was designed to strengthen these services at their most vulnerable point—the mother's own life and health. Again, the measures in hand to extend the child welfare and school medical services upwards and downwards respectively, by providing better attention for children too young to attend school and so improve their health still further, are intended to close this gap in the existing facilities. At the time of writing proposals are before Parliament for closing another gap—that between the school medical service and entry into the health insurance scheme at the age of 16. Finally, mention should be made of the Act of Parliament, passed while this report was in the press, extending the existing contributory pensions scheme so as to allow independent workers and professional and other persons of small means to insure for pensions if they wish to do so."

£65,000,000 of Exchequer money was spent in 1936 on services administered by the Ministry, £2,200,000 of which went on central administration. The remainder consisted of grants to local authorities (including "block grants" of £40,000,000 and housing grants of £14,000,000) and to national health insurance funds. The Ministry also accounts for the national health insurance funds and administers the Contributory Pensions Scheme, involving the expenditure of £75,000,000.

[1] H.M. Stationery Office. Cmd. 5516. (5s. net.)

Maternity and Child Welfare

There are now over 3,000 infant welfare centres (fifty-eight more than in 1935) and 1,568 ante-natal clinics (seventy-seven more than in 1935). The maternal mortality rate was 3.81 per 1,000 live births—the lowest rate since 1922. The new Midwives Act will ensure a qualified midwife for every confinement, whatever the patient's means. The infantile mortality rate was 59 per 1,000 births—the third successive year in which it has been below 60—and would have touched a low record but for bad weather, which increased the deaths in the first quarter of the year. Forty-six authorities have established separate "toddlers clinics" at their centres, and fifty-six have made the school medical service available for the younger children. Out of 374 maternity and child welfare authorities 364 supply free or cheap milk to expectant mothers, 363 to nursing mothers, and 362 to young children.

Infectious Diseases

Tuberculosis mortality was the lowest on record. For example, in 1931 there were 29,658 deaths from pulmonary tuberculosis and 6,160 from non-pulmonary tuberculosis; the figures for 1936 are 23,801 and 4,467 respectively. There were 121,951 *x*-ray examinations in connexion with the tuberculosis dispensary service in 1936, compared with 63,823 five years previously.

There were 3,232,986 attendances at venereal disease centres during 1936, compared with 1,534,000 in 1921; but over two-fifths of the new cases dealt with in 1936 proved not to have venereal diseases. The total number of cases of syphilis dealt with at English treatment centres has been reduced by 56 per cent. since 1920.

Notifications of diphtheria were 7,290 less than for 1935, but still considerably in excess of those for 1933. Encephalitis lethargica continues to decline, notifications being less by 38 per cent. than in 1933. There were 2,493 notifications of enteric fever (including paratyphoid), compared with 1,750 in 1935. The increase was mainly the result of an outbreak of 718 cases at Bournemouth, Poole, and Christchurch last summer, with fifty-one deaths and was due to the drinking of infected raw (that is, unpasteurized) milk. An outbreak of over 160 cases of scarlet fever at Doncaster and one of gastro-enteritis at Wilton were also traced to the drinking of infected raw milk. As is stated in the introduction to the section on public health, these "distressing outbreaks of milk-borne disease . . . have emphasized the importance of public safeguards for the milk supply and the protection afforded by proper pasteurization."

Milk and Nutrition

The report stresses that national health cannot be reached or maintained without food adequate both in quantity and in quality. Special interest therefore attaches to the first report of the Advisory Committee on Nutrition, which drew attention to the great improvement in the health of the people as a result of the practical application of the discoveries in the science of nutrition. There is, nevertheless, "a large number of disturbances of nutrition, amounting in some cases to actual disease, which are due to improper or defective diet." The Advisory Committee has pointed out that there is, accordingly, much room for further improvement in the health and physique of the nation, which can be promoted by the consumption of adequate amounts of the "protective foods," the most important being milk and its products, green vegetables, fruit, and eggs. The consumption of a sufficient quantity of milk is regarded as the "key to proper nutrition." But the consumption of liquid milk per head has slightly declined since before the war. The

Advisory Committee recommended that the daily consumption of milk should be about two pints for expectant and nursing mothers, from one to two pints for children, and not less than half a pint for the rest of the population—equivalent to about seven-eighths of a pint a day per head of the whole population. At present the consumption of milk in all forms is about half a pint a day per head, or only 60 per cent. of the recommended amount.

Since the coming into operation of the Milk (Special Designations) Order, 1936, the only grades of special milk now officially recognized are "tuberculin tested" and "accredited." Both these, like ungraded milk, may be sold as "pasteurized," but if so the pasteurization must be effected in a specified manner—that is, the milk must be retained at a temperature of 145° to 150° F. for at least thirty minutes, and a sample taken at any time after pasteurization and before delivery to the consumer must not contain more than 100,000 bacteria per millilitre.

Public analysts analysed 146,438 samples of food and drugs, of which 7,802 (5.3 per cent.) were reported against: 80,082 of the total were samples of milk and 7,588 were samples of butter.

Sanitary and Other Services

The three services of water supply, sewerage and sewage disposal, and public cleansing (excluding street cleansing) now cost local authorities £22,400,000 a year in maintenance costs alone; in 1900 the corresponding figure was only £5,000,000. Public cleansing, the oldest sanitary service of all costs the rates about £11,000,000 a year. House refuse alone amounts to about one ton per year (or 6 lb. a day) per house. During the past five years the average weight of refuse has come down by 15 to 20 per cent., the result, it is thought, of less cinder and fine mineral dust, due to the greater use of improved fireplaces and of gas and electricity.

The Ministry sanctioned loans totalling £3,196,002, compared with £2,467,245 in 1935, for parks, recreation grounds, and playing fields. This includes the purchase of 9,059 acres (including 1,030 acres specifically for games), compared with 4,732 acres in 1935. Large schemes were approved for covered baths at Coventry, Crewe, Kingston, Lancaster, Northampton, and Sutton and Cheam, and for open-air baths at Brighton, Nottingham, Stroud, and West Ham. The cost of a number of open-air pools in the special areas will be assisted by special Government grants: these include schemes at Abercarn, Bridgend, Caerphilly, Merthyr Tydfil, and Mountain Ash.

Hospitals

Local authorities are steadily building up a service of general hospitals as an integral part of municipal health services, and in association with the voluntary hospital system ninety-two Poor Law institutions, containing 50,073 beds, have now been appropriated in whole or in part as public health general hospitals: "The test for admission is no longer destitution, but the need for the kind of treatment which the hospital is able to give." The report points out that an important result of appropriation is to facilitate co-operation between the county or county borough council and the voluntary hospitals in the area, by way of engaging members of the staffs of voluntary hospitals, and by arranging what kinds of illness should be treated in the two classes of hospitals and for transfer of patients from one to the other. It has been estimated that local authorities provide about seven-tenths of the total number of hospital beds in England and Wales, or, if accommodation for infectious diseases is excluded, about two-thirds.

"The power conferred on county councils to provide general hospital accommodation, the concentration of the responsibility for public provision of the various forms of accommodation for the sick in the hands of a single authority in each area, and the subsequent activity in hospital provision, have thrown into relief the urgent necessity of securing in every area that the relation between the public and the voluntary systems should be co-operative and complementary and not overlapping and competitive. This task is at once most pressing, and presents most complications, in the field served by the general hospital for the acute sick.

"Section 13 of the Local Government Act of 1929 laid down a minimum requirement—that is, that a local authority when making provision for hospital accommodation in discharge of the functions transferred to them by the Act should consult such committee or other body as they considered represented the voluntary hospitals serving the area. In the early surveys, while it was clear that some local authorities realized the importance of co-operation with the voluntary hospitals, indications were met with that consultations were being regarded in a few areas as being merely a matter of form, while other authorities were satisfied with the minimum required by the Act. The Minister has taken every opportunity of urging the necessity of close and continuous co-operation, and he is glad to know that during recent years much has been done to secure this."

Housing

The year under review was the fourth of the "five-year plan." Up to the end of 1936 100,355 houses had been demolished and 127,553 houses built to replace them. The end of the five years is expected to see the completion of the programmes, except in London, Birmingham, Liverpool, Manchester, and Leeds, which have special problems necessitating a further period of time. The nation-wide survey of overcrowding revealed 341,554 of the 8,924,523 dwellings inspected to be overcrowded according to the standard of the Housing Acts. Fresh overcrowding ceased to be permitted for the areas of 96.6 per cent. of the local authorities during the year.

Local Government Finance

The three main sources of local government revenues are rates, Government grants, and receipts from trading services, house rents, and miscellaneous income. In 1934–5 £154,782,080 was collected in rates; £124,353,931 was received in Government grants (of which £45,409,836 was block grant and £40,407,467 for education); and £181,568,094 was derived from other sources of income, including £116,000,000 from trading services (chiefly water, gas, electricity, and transport). The total expenditure of local authorities for the same year was £80,657,889 on capital account, £100,984,164 on loan charges, and £353,775,105 on revenue account other than loan charges. The heaviest single item of expenditure was education. The gross outstanding loan debt of all local authorities at March 31, 1935, was approximately £1,421,500,000, a third of which was for housing.

National Health Insurance

In England and Wales 16,500,000 men and women are covered by the statutory benefits (cash and medical attendance) of national health insurance, and over two-thirds of them are also entitled to additional benefits, such as dental and ophthalmic treatment. As a result of better trade conditions the number of persons insured for national health insurance increased by 2.8 per cent. during the year, and the amount of contributions by 4.8 per cent. The revenue of 1936 exceeded that of 1932 by £3,000,000—representing 80,000,000 working weeks. Medical benefit cost £9,430,000, of which £6,868,900 went to doctors for attendance and treatment and £2,084,600 to chemists for drugs and appliances. As regards additional benefits, £2,174,000 was allocated to dental and £542,663 to ophthalmic benefit.

The report contains, as is customary, a separate section on the work of the Welsh Board of Health, and concludes with fifty-six appendices and a full subject index.

Local News

SCOTLAND

Research in Animal Diseases

At the annual meeting of the Animal Diseases Research Association at the Moredun Institute, Edinburgh, on July 28, the disease of horses known as grass sickness was discussed. An extensive field experiment financed by the Government had been conducted to determine whether a toxin found in cases of the disease was a causal factor, and it was reported that this toxin did not appear to be of primary significance. This negative result at all events cleared the way for future work. Dr. Russell Greig said that this field experiment had been the most extensive and most closely supervised of its kind which had ever been attempted in this country. The toxin had been administered to about forty horses and did not produce grass sickness. About 1,000 horses had been treated by a vaccine prepared from the toxin, with 2,000 unvaccinated horses as controls, and the evidence obtained from this was also of a negative character. With regard to bovine abortion, Dr. Greig said that systematic research had shown that a vaccine was capable of affording a certain amount of protection to small animals, and this work was now being applied to bovine animals. The disease of louping-ill in sheep had been treated with good results by a vaccine, of which 107,000 doses had been issued by the institute last year, and lamb dysentery serum, of which 71,300 doses had been issued, had also proved satisfactory.

Incapacitating Sickness in Scotland

The sixth report upon incapacitating sickness in the insured population of Scotland, dealing with the period from July 1, 1935, to June 30, 1936, shows that chronic incapacity is on the increase. The most variable cause of incapacity from year to year had been influenza, but during 1935–6 the lowest number of cases since recording began had been attributable to this cause, and a fall of 5 per cent. in the incidence of incapacity compared with that of the previous year was more than accounted for by the low influenza prevalence. Notwithstanding this drop, the number of days of incapacity per insured person had risen by 5 per cent., or fully half a day per person per annum over those of the previous year. The volume of incapacity per person per annum amounted to eleven and a half days, which formed a new high record. The duration of incapacity had also increased in all conditions except those of the respiratory diseases, general diseases, diseases of the circulatory system, and pregnancy. The increase in chronic incapacity affected particularly the average duration of illness—fifty-two days—which exceeded anything previously recorded. The insured population for the year had been 1,725,198, composed of 1,134,681 males and 590,517 females. This was an increase on the number of 1,708,494 for 1934–5. The days of incapacity for the year amounted to 12,394,412 for males, and 7,350,572 for females. The total days lost were therefore approximately 20,000,000—the equivalent of 54,000 persons constantly sick throughout the entire year. There was a loss of 1,166,406 more days than in 1934–5, or as compared with the average of the previous five years an increase of 2¼ million days.

A percentage analysis of the causes of incapacitating sickness showed diseases of the respiratory system to be responsible for 33 per cent. of the cases, rheumatic diseases coming next with 12 per cent., diseases of the digestive system 11 per cent., skin and septic conditions 10 per cent., and various forms of violence 10 per cent. The days of incapacity per person showed considerable geographical variation, being, for example, between eight and nine days in Edinburgh, ten to eleven days in Glasgow, eleven to twelve days in Dundee, and twelve to thirteen days in Aberdeen. The occupational incidence of sickness also showed great variation; those males engaged in mining and quarrying showed an outstandingly high rate, 70 per cent. in excess of that for all males. Textile and paper workers also had a rate of incapacity 7 per cent. above the average. On the other hand, persons engaged in personal service—for example, domestic servants and chauffeurs—showed a rate 30 per cent. below the average, and clerks, shop assistants, etc., had an incidence of incapacity 20 per cent. below the average. Among females women engaged in transport work showed 30 per cent. above the average, while among those engaged in metal trades and in making foods and drinks the rate was 30 per cent. below the rate for all women. The report directs special attention to the subject of chronic incapacity, and states that chronic illness accounted during the year for more than half of the total volume of incapacity in the insured population of Scotland, or 11 million out of 19¾ million days. It has been argued that there might be a progressive building up of excess of permanent invalidity, and that only in 1961, when the Insurance Act will have lasted for a period equivalent to the span of insurance life—that is, sixteen to sixty-five years—will stability be reached. It is pointed out, however, that the proportion of chronic cases surviving to-day whose incapacity began in the early years of the Act is inconsiderable. The report may be obtained from H.M. Stationery Office, 120, George Street, Edinburgh, price 9d. net.

ENGLAND AND WALES

Welsh Board of Health Report

The report of the Welsh Board of Health for 1936–7, which has now been published as part of the Annual Report of the Ministry of Health (H.M. Stationery Office, Cardiff, price 5s. net) reveals steady progress in the public health services of the country. The infant mortality rate of 62 per 1,000 births and the tuberculosis death rate of 861 per million of the population are in each case the lowest yet recorded for the principality. The maternal death rate has also declined, and the rate of 5.17 per 1,000 births for 1936 is, except for 1931, the lowest recorded since 1926. It compares with 6.08 for the period 1933–5. On the health insurance side sickness experience appeared to be on the down grade generally, but an epidemic of influenza in December and January caused increased expenditure, which resulted in the total sickness expenditure being heavier than in 1935. Owing to improving industrial conditions many persons previously unemployed are qualifying afresh for sickness and disablement benefits, and thus become entitled to all the benefits provided under the National Health Insurance Act. During the year the Midwives Act, 1936, came into operation, and proposals under the Act for the provision of a domiciliary service of salaried midwives have been submitted by all the local supervising authorities. The treatment of tuberculosis is carried out in Wales by the Welsh National Memorial Association on behalf of the county and county borough councils, and a new scheme has been made by the Minister of Health providing for the payments by the councils for the third fixed grant period (1937–42). According to the report facilities for the treatment of the sick are provided by local authorities at forty-three institutions (5,168 beds) maintained under the Poor Law Act, 1930, and at five institutions (438 beds) maintained under the Public Health Acts. As regards Poor Law domiciliary medical relief, it is mentioned that the "panel" system is no win operation in the greater part of Glamorgan and that one other county council has made similar arrangements in three of its medical relief districts. Approximately 979,000 persons (763,000 men and 216,000 women) in Wales are insured for national health insurance purposes out of a

total population of 2¼ millions. The total receipts (inclusive of Exchequer grants) during 1936 were £1,983,000, and £1,662,000 was spent on benefits and £324,000 on administration. Sickness benefit accounted for £575,000, disablement benefit £363,000, and medical benefit £545,000. The number of doctors participating in insurance practice was 969.

The Red Cross Rheumatism Clinic

The annual report of the British Red Cross Society's clinic for rheumatism records continued progress, the attendances in the general department during 1936 numbering 95,622, an increase of nearly 6,000 on the previous year. Although the number of advanced cases of rheumatism is still comparatively large, it is stated that a greater proportion of patients in the early stages of the disease are now seeking treatment. With regard to the results of treatment 60.3 per cent. of cases are classified as free from subjective symptoms and 29 per cent. as definitely improved; the first category shows a slight preponderance of men, the second of women. The report stresses the importance of protracted convalescence in healthy surroundings for early cases of rheumatoid arthritis, and suggests the desirability of a building for this purpose being made available within a reasonable distance of London. Facilities for research on a large scale are also urgently required, whereby the valuable clinical material passing through the clinic may be utilized for the furtherance of knowledge of rheumatic diseases. Under present conditions the ever-increasing number of routine examinations and treatments demand not only the whole time of the staff but also all available accommodation at the clinic. The question of in-patient treatment is also a pressing one. A number of beds are reserved for rheumatic patients by the London County Council at St. Stephen's Hospital, but the report emphasizes the importance of the provision of in-patient accommodation under the direct supervision of the staff of the clinic. It is obvious that the time is now ripe for expansion, and that the work of this institution will be seriously handicapped until these deficiencies can be made good. The financial report shows an increasing deficit, the adverse balance standing at more than £4,200 at the end of the year. It is to be hoped that means may be found to enable the clinic, which in a few years has made for itself a great and deserved reputation, to be placed on a more satisfactory financial footing, and to secure the provision of the three things so essential for its future progress—namely, research facilities, in-patient accommodation, and a convalescent hospital.

Heatherwood Hospital, Ascot

The extension of this hospital, which the London County Council in 1935 decided to provide at an estimated cost of about £72,000, has been completed and is now in occupation. Heatherwood Hospital was originally established in 1920 by the council of management of the United Services Fund for children of ex-service men suffering from surgical tuberculosis and other orthopaedic diseases. In December, 1929, the Fund offered to transfer the hospital to the L.C.C. as a free gift after the cessation of the Fund in about eight years from then, and this generous offer was accepted. Subsequently the Council agreed to take over the hospital on October 1, 1934. The decision to enlarge Heatherwood Hospital was taken in connexion with a proposal to change the user of Princess Mary's Hospital for Children, Margate. The 271 beds at the latter hospital had been used for surgical tuberculosis, but there had been a progressive diminution in the number of such cases and parents were often unwilling to send children who were seriously ill, and likely to be away from home for prolonged periods, to a hospital so far from London. From many points of view it is desirable that children with surgical tuberculosis should be nearer to London, an important consideration being the readier availability of the Council's consultant and specialist organization. It was decided, therefore, to convert Princess Mary's Hospital into a much-needed seaside convalescent hospital for London women and to extend Heatherwood Hospital by providing an additional 100 beds. This hospital is fully equipped for the types of case sent there, and being situated, within reasonable distance from London, in 55 acres of grounds partly wooded and partly laid out as gardens, is very suitable for the purpose. The hospital, as the L.C.C. took it over, consisted of three single-story ward blocks, one for children up to the age of 7 and one each for girls and boys over that age, with an up-to-date light treatment block, workshops for the making of splints and surgical appliances, a hospital school, administrative buildings, and staff quarters. The design of the new block was decided on after careful consideration of other modern hospital accommodation in this country for the type of case sent to Heatherwood. It is a one-story double ward block for 100 patients planned for effective open-air treatment.

Correspondence

Treatment of Giant-cell Tumours of Bone

SIR,—It was with surprise that I read the dogmatic statements of some surgeons at the recent Belfast meeting that the treatment of giant-cell tumours of bone should almost always be operative (*Journal*, August 7, p. 285). I had the good fortune to attend an animated discussion on this subject at the Presbyterian Hospital, New York, just over a year ago. Since American figures were quoted freely at Belfast it may be of interest to record the views of some leading New York surgeons.

Excitement over the subject was aroused by a medico-legal case. A man had been knocked down, and a radiograph taken soon afterwards showed a giant-cell tumour in the femur above the knee-joint. This was treated with *x*-rays, which was then, as now, considered the treatment of choice. No biopsy was made at first. About two months later another radiograph was taken in order to note the progress, and the lesion appeared larger. Some said this meant it was malignant, but others, notably Dr. Haagensen, said that this was the normal appearance of a giant-cell tumour at this stage of treatment, which should continue. It was decided to operate, however, and a frozen section was made; this was not conclusive, and the limb was amputated. Later sections showed that the tumour was benign. The man claimed damages from the person who knocked him down on the grounds that the tumour did not respond to *x*-ray therapy because of the accident. The jury failed to agree on four occasions, and I do not know the outcome of the case. Professors Ewing and Wood were called in on this case, and said that they were sure the case would have progressed well had *x*-ray therapy only been used.

At the discussion it was said that the radiological diagnosis of giant-cell tumour in bone was correct in about 95 per cent. of cases, and for these there seemed no doubt that *x*-ray therapy was the treatment of choice. There can be no question that it does give a complete cure, and the difference in the patient's comfort with this treatment as compared with that of surgery is so obvious that it needs no comment. The first point on which they were unanimous was, therefore, that given a correct *x*-ray diagnosis of giant-cell tumour the treatment should be by *x* rays. The second point was that *x*-ray therapy and local surgery, including the taking of a biopsy, should never under any circumstances be combined, since the two together were liable to make the tumour malignant. I saw such a case in Northampton a year ago. Dr. Haagensen thinks the extreme vascularity of these tumours

is the reason for this danger. If a biopsy is indicated then surgery is the only treatment to be considered, whatever the result of the biopsy. In such cases a quick frozen section at the time of operation is of the utmost value in many cases; the nature of the lesion may be obvious from it and the appropriate treatment can be given with the patient still under the anaesthetic. At the Presbyterian Hospital avertin and gas and oxygen is the routine anaesthetic for these cases; its value while the diagnosis is being discussed is obvious.

If the frozen section leaves doubt as to the nature of the tumour, what is the correct procedure? Some are emphatic that the case should be immediately treated as if it was malignant, because there is danger of metastases while routine sections are prepared. Dr. Haagensen and many others, in quoting the results of observations on something like 30,000 cases, are more emphatic that no deliberate treatment should be undertaken while the diagnosis is uncertain, and that there is no danger whatsoever in waiting a week for perfect sections. Such a statement is contrary to the surgical principles on which we were reared, but it does seem that the evidence in support of it now forthcoming from the United States is so overwhelming that we are arriving at a point at which it is useless to deny its truth any longer.

The second point on which there is a difference of opinion is in the 5 per cent. of cases in which the tumour was malignant from the start. In these cases amputation is the operation of choice. Most of the patients who have recovered have been so treated. It is admitted to be better than *x*-ray therapy, but how much better? The American Registry certainly has records of a few five-year cures, but the chances of success are so remote as to be almost negligible. The Presbyterian Hospital so far has had no cures in these cases. The practical point then is this: if a patient has a femoral tumour which an experienced radiologist thinks is a giant-cell tumour, should he take the 95 per cent. chance of an ideal result with practically no loss of work which modern *x*-ray therapy offers? Or should he suffer at the hands of the surgeon for fear that he is one of the 5 per cent. of cases in which the radiologist is wrong. Then, if he is in that 5 per cent., what prospects does amputation hold for him? Let us not deceive ourselves: it is death almost as surely as if he had tuberculous meningitis.

If I am ever in such a position I can assure Mr. Harry Platt that I will not even think of the treatment he advises, and if I prove to be in the unfortunate 5 per cent. I will not take an action against the radiologist, but die in the belief that death was inevitable. The view that these cases should be all treated surgically is opposed by that of such surgeons as Drs. Allen Whipple, Hugh Auchincloss, Cushmann Haagensen, and many others with an enormous experience. Most of the confused ideas have resulted from ignorance of the *x*-ray appearance of giant-cell tumours undergoing treatment by radiation, thus leading to the dangerous mixture of the two forms of treatment. (The senior radiologist at the Presbyterian Hospital was on holiday when the *x*-ray was taken which led to the amputation of the limb mentioned previously.)

My own experience of these cases is naturally very limited, but such as it is it is entirely in accord with Dr. Haagensen's teaching. Because correct treatment can cure these tumours the subject is one of enormous importance and a definite procedure should be established.—I am, etc.,

G. R. OSBORN,
Pathologist, Derbyshire Royal Infirmary.

Aug. 7.

Elongation and Dilatation of the Colon

SIR,—I should like to corroborate some of the remarks made by Professor Learmonth in his address on elongation and dilatation of the colon (*Journal*, July 24, p. 154). In my experience lumbar sympathectomy can be relied on to produce dramatic improvement in all cases of true Hirschsprung's disease. Moreover, the improvement appears to be permanent. I have two patients who were operated on ten years ago, and their bowel function remains perfect. In both these cases a barium enema still shows a grossly dilated colon as large, or almost as large, as before the operation. On the other hand the *x*-ray appearances of the colon after a barium meal are normal.

Like Professor Learmonth, I have no faith in sympathectomy as a cure for intractable constipation. I have tried the effect of this operation in ten cases. Seven showed no improvement, three cases showed temporary improvement, but as time went on all of them relapsed into as bad a state as before operation. I am aware that from time to time successful results have been published—I have myself reported such a case—but I am more and more convinced that these results are due to improved dieting and not to the operation.

I have tried at one time or another many methods of depriving the distal colon of its inhibitory nerves, and agree that Telford and Stopford's operation is the most eclectic and therefore the most desirable. I prefer, however, an extraperitoneal approach to the sympathetic cords, and use an oblique incision in the position and direction of McBurney's incision for appendicectomy. The muscles of the abdominal wall are split in the direction of their fibres and the peritoneum is retracted inwards, exposing the sympathetic cord. Spinal anaesthesia greatly facilitates the operation, which is a minor procedure taking no more than fifteen minutes. The convalescence is quite uneventful; the patient can be up in five to seven days and go home a few days later.—I am, etc.,

J. B. OLDHAM.

Liverpool, Aug. 6.

SIR,—While in agreement with the substance of the letter by Mr. D. Ligat and Dr. T. D. Overend in the *Journal* of August 7 (p. 293), I wish to correct its reference to myself. The writers say, "without agreeing with Mr. Slesinger (*Lancet*, 1926, **2**, 274) that dolichosigmoid forms in itself a sufficient indication for colectomy, we must maintain . . ." and so impute to me the unholy desire of removing every pelvic colon which exceeds its normal length! I need hardly say that such misguided surgical enthusiasm was never mine, and if I may quote from my original paper on the matter my views will, I think, become clear. I wrote: "The pelvic colon varies in length between considerable limits in perfectly healthy individuals, and is relatively much longer in the infant than in the adult. The following remarks are therefore not intended to suggest that elongation of the pelvic colon necessarily results in the production of symptoms, but rather to point out that in certain cases such elongation produces results sufficiently severe to call for relief. . . ."

In the eleven years since that paper was written I have performed the operation of excision of the pelvic colon for dolichosigmoid twenty times, a record hardly suggesting that I think that "dolichosigmoid forms in itself an indication for colectomy."—I am, etc.,

E. G. SLESINGER.

London, Aug. 9.

Treatment of Enuresis

SIR,—I read with interest the article by Dr. Robert Hutchison in your issue of July 31 (p. 206). The fact that enuresis is mostly nocturnal and the result of vagotonia suggests some allergic significance. In the young vagotonic tolerance is low. In many cases fear will induce decontrol of the sphincters of both bladder and rectum; it can thus readily be inferred that allergic children will show a greater tendency to enuresis. Bray (1934) points out that he has successfully treated cases on this assumption. The value of treatment by belladonna and ephedrine also suggests a close alliance with allergic diseases such as asthma, in which vagotonic inhibition is low.

As organic stimuli in the majority of cases can be excluded (Hutchison, 1937), psychological effects must be considered. Dr. R. G. Gordon (1937) maintains that organic factors, if present, simply loosen the higher centre controls. In sleep the conscious mind is out of action, but the unconscious continues to operate in the form of *dreams. Dreams are a medley of repressed memories* (Hart, 1930). Dreams of grief are likely to break through any weakness in the inhibitory barrier, and stimulate the corresponding vagotonic centre. Psychological factors in vague rheumatism also show a striking analogy (Halliday, 1937). If this process be mitigated, then it is possible that inhibition will be strengthened. Belladonna depresses vagotonia; ephedrine modifies vagus activity by stimulating the antagonistic properties of the sympathetic. Therefore, cessation of enuresis, however produced, will tend to eliminate egocentricity and at the same time repress the potency of the grief. Witness the happy expression of the child that has just passed an uneventful night. In order to produce inhibition drugs are first tried; psychotherapy may be helpful in older children and in adults, but a suitable psychological atmosphere must be created. Parents should evince no distress nor adopt any unfavourable attitude, and allergic tendencies should be investigated. Climatological factors should be dealt with by consideration of general health improvement in the light of Kestner's (1937) researches. He gives an admirable scientific discussion of the mental and physical benefits of fresh air. The following case may be of interest.

A young man, aged 25, had suffered from enuresis and faecal incontinence (both nocturnal) since childhood. Bromides and belladonna plus the treatment of haemorrhoids cured his faecal incontinence, but enuresis persisted. Unfortunately—or fortunately—he discontinued medical treatment. Some months later I met him and inquired about his condition. With a cynical grin he told me that a glass or more of beer at night had "completely chased his bed-wetting." In other words, he had succeeded in "drowning his sorrows."

Although I was impressed, I have not yet felt sufficiently heroic to prescribe this treatment.—I am, etc.,

Birmingham, Aug. 7. A. W. DOCKAR.

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Hutchison, R. (1937). *British Medical Journal*, 2, 199.
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Kestner, O. (1937). Ibid., 1, 541.

SIR,—Dr. Robert Hutchison's comprehensive paper on enuresis (*Journal*, July 31, p. 206), following closely on the interesting correspondence on that subject, adds considerably to our knowledge of the treatment of this distressing complaint. There are nevertheless one or two omissions. The first is that enuresis is usually familial. The second concerns diet. A bland non-nitrogenous diet is the most successful, and of course milk should be substituted for tea or coffee. The best therapeutic agents are undoubtedly belladonna and the bromides. However, calcium lactate with vitamin D and parathyroid will often be found successful even in the most obstinate case. With regard to ephedrine, the only occasion on which I used it I found it made the child restless and unable to sleep.—I am, etc.,

Co. Cork, Aug. 4. P. J. SMITH, M.B., B.Ch.

Spinal Tumours

SIR,—The editorial article on the subject of spinal tumours (*Journal*, July 31, p. 220) is of much interest, but it loses in value because of its failure to take account of, or to give credit to, the pioneer work of Sir William Macewen of Glasgow on the surgery of the spinal cord. It should not be forgotten that, before Horsley and Ballance had carried out their initial operation in London, Macewen had already a solid record of successful spinal surgery behind him. In addition to this, he first in all the world gave evidence, as early as the year 1876, of the possibility of making accurate diagnoses of lesions of the central nervous system from physiological localizing signs alone.[1]

Horsley's operation was carried out in 1887; but in the years between 1883 and 1886, before Horsley was appointed surgeon to the Queen Square Hospital, Macewen reported five cases in which laminectomy had been performed for paraplegia caused by pressure, due in some instances to granulomatous tumours, on the spinal cord. By 1888 he had to his credit six cases in which the posterior arches of certain vertebrae had been removed. Four of the patients concerned made complete recoveries; one died several months after operation from the effects of advanced tuberculosis; while in the case of the sixth death was possibly hastened by operative intervention—or, at least, such was Macewen's own opinion.[2] It was Macewen's misfortune, if indeed one may look upon it in such a light, that in this period no actual neoplasm (in the strict sense of the term) of the spinal cord was encountered by him; but this circumstance, so similar to that concerned with his work on the brain, in no way detracts from his priority of achievement.

The unfriendly atmosphere in which he commenced his work on the spinal cord was amply described by Macewen at the historic Glasgow meeting of 1888.

"The spinal membranes and the cord itself," he said, "can be exposed, and neoplasms and encroachments on the lumen of the canal may be removed therefrom without unduly hazarding life. Such interference is unsparingly condemned by writers on the subject, their remarks, however, being applied to injuries, as no such operations have hitherto been contemplated in idiopathic cases. They contend that they are full of danger, being difficult, prolonged, and attended by profuse haemorrhage; secondly, that operation could hardly benefit the patient; and, thirdly, that no one has as yet been able to present a successful case. Each of these points has now lost its validity. The first operations of this kind were undertaken by me for the relief of paraplegia due to angular curvature of the spine. In such cases pressure may be exerted on the cord either by connective tissue neoplasms or by direct displacement of the bodies of the vertebrae, both lessening the lumen of the canal."[3]

At the Glasgow meeting of 1888, possibly remembering the want of recognition accorded to his work on the occasion of the presentation of the record of the Godlee-

[1] Macewen. *Pyogenic Diseases*, p. 189.
[2] —— (1888). *British Medical Journal*, 2, 302.

Bennett case of a cerebral tumour in 1885, Macewen himself laid claim to priority in the field of spinal cord surgery, and he could not be gainsaid. Referring to his operative treatment, he remarked: "Such operations are now beginning to be practised by others. Mr. Horsley has a few months ago published the account of a successful case, in which a somewhat similar operation has been performed for the removal of a small tumour of the theca, diagnosed by Mr. Gowers."

It is but just that the work of a very great originator should not thus early be forgotten.—I am, etc.,

Dalmellington, Aug. 3. A. K. Bowman.

*** We would not for one moment detract from the honour due to that great pioneer of the surgery of the central nervous system, Sir William Macewen, but our leading article was concerned not with the surgery of the spinal cord but with spinal tumours and the first removal of a spinal tumour. For this there appears to be no doubt that Horsley was responsible, and the credit must be his. It may have been, as Dr. Bowman points out, Macewen's misfortune that in his early laminectomies he did not encounter an actual neoplasm, but so it was with others. In 1873 E. Leyden of Strasbourg (*Klinik der Rückenmarks-Krankheiten*, Berlin, 1874, **1**, 467) diagnosed and localized a spinal tumour, subsequently verified at necropsy, upon which he had proposed operating but was prevented from doing so.—Ed., *B.M.J.*

Impacted Ureteral Calculus

Sir,—As perhaps indicating the value of expectant rather than operative treatment in cases of impacted ureteral calculus in which the patient is not a good subject for operative treatment, the following case may be of some interest.

In May, 1929, the patient had an attack of renal colic and consulted the late Mr. Frank Kidd. A radiograph showed the calculus to be impacted in the left ureter about one and a half inches from the bladder. The patient was 60 years of age, and although an otherwise healthy man weighed 16 stone. Mr. Kidd recommended no active treatment other than an occasional injection of morphine and atropine to relieve any ureteral spasm. He offered to oil the stone *in situ*, but was not very enthusiastic as to its beneficial effect; he gave it as his opinion that the stone would sooner or later complete its journey, and that so long as it gave rise to no untoward symptoms it was better left alone. Mr. Kidd saw the patient twice in the next two years, the stone remaining unmoved during that time and giving rise to no symptoms. An *x*-ray examination has been carried out once a year since with similar findings. Once only, about four years ago, has he had any inconvenience at all, and then only a colicky pain lasting a short time and relieved at once by an injection of morphine and atropine. On the morning of August 7, on rising, he passed the calculus, more than eight years after its impaction.

—I am, etc.,

Darlington, Aug. 7. J. W. Astley Cooper.

Tests of Renal Function

Sir,—May I make a few comments on Dr. C. S. D. Don's article (*Journal*, July 10, p. 54) and on Dr. N. Lissimore's letter (July 31, p. 244)? In estimating renal function there are two things to be noted: in the first place, Is there a lesion present; and, secondly, What is the function of the kidney as a whole? To my mind the best test for the detection of a renal lesion is the concentration test following the technique described by Calvert of Belfast. It corresponds to the exercise tolerance test employed by the cardiologists, in that it tries to find out how the kidney will react to increased work. The Van Slyke urea clearance test, on the other hand, gives a much truer picture of the kidney as a whole and as to how it is fulfilling its function in the body. Owing chiefly to the brilliant work of Richards the tremendous amount of reserve the kidney possesses is now realized; a lesion may be present and yet the kidney function under normal conditions may be perfect.

As I remarked in the *Ulster Medical Journal* of January, 1937, the blood is the environment in which the kidney works and the urine is the result of its labours, and so both must be taken into consideration when examining renal function. The urea clearance test does what no other renal function test does, it considers the three essential factors in renal activity—the blood urea, urine urea, and the volume of urine excreted in unit time. It is thus theoretically the best test of kidney function, and I think this is borne out by every one who has given the test a fair trial. A short time ago a boy was seen with a history of tonsillitis followed by acute nephritis several months previously, and tonsillectomy was now being considered. The kidneys were unable to concentrate or dilute properly, but the urea clearance test was normal. This was pointed out to me as a case in which this test had failed. Is it not more rational to say that the renal lesion, which was obviously present both clinically and as shown by some degree of fixation in specific gravity, was not handicapping the kidney, which, as shown by the clearance test, was still doing its duty properly? That is, the kidney had compensated. This was borne out by the after-history of the patient.

If this interpretation is granted, then there are two corollaries. In the first place, in the estimation of renal function no one test should be relied on but rather the whole picture studied. The urea clearance test is intended to supplement other tests, not to replace them. Secondly, in the evaluation of the urea clearance test it is not enough just to compare it with the results of other tests. Its true value is only shown by a careful follow-up of the after-histories of patients and of their clinical condition as compared with the results of the clearance test. —I am, etc.,

Harrogate, Aug. 4. J. V. Wilson.

Abuse of Caesarean Section

Sir,—Mr. Malcolm Donaldson's letter in the *Journal* of July 31 (p. 243) in reference to Caesarean section is indeed timely in view of the deplorable fact that it is becoming an operation too often resorted to in preference to other methods of delivery which have stood the test of time and proved perfectly adequate in cases for which section is now being indiscriminately advocated. As he truly says, the operation itself is simple. It is not attended by the difficulties ascribed to it by the lay mind, with the unfortunate result that the false impression entertained by the public may, and probably does, tempt many to practise what adds to their professional reputation and income without due consideration being given to the needs of each individual case, and the best and safest way of meeting them. Mr. Donaldson will have conferred a benefit upon all would-be mothers if his warning based upon such wide and enlightened experience succeeds, as it should, in putting all enthusiasts on their guard against what may and does constitute an added danger to the risks of child bearing.—I am, etc.,

Greenhithe, Kent, July 31. D. W. Standley.

The Normal Female Pelvis

SIR,—Many practitioners will welcome the article by Dr. H. Thoms in the *Journal* of July 31 (p. 210); it is one of the first in this country to try to correlate the findings of accurate pelvimetry with practical experience in obstetrics. Nevertheless measurements of primiparae in England give different results from those obtained by Dr. Thoms in America, and do not substantiate his claim that the "mesatipellic" type rather than the "brachypellic" type is the normal pelvis in white women. I have analysed a series of 300 pelvimetric measurements in accordance with Dr. Thoms's classification, with the following result:

	Dolichopellic	Mesatipellic	Brachypellic	Platypellic
Dr. Thoms: 450 cases	15 per cent.	45 per cent.	35 per cent.	5 per cent.
Moreton District Hospital: 300 cases	7 „	26 „	54 „	13 „

In England, then, the brachypellic type is still the "normal" pelvis. Moreover, the averages for the two main measurements in my series are: conjugate, 11.5 cm., and transverse 13.5 cm.—and anatomy textbooks give the conjugate as 11 cm., the transverse as 13.5 cm. These figures, which must have been arrived at after a very great number of measurements on the cadaver, have never been challenged. Dr. Thoms does not give average measurements, but it is not hard to estimate from his paper that the conjugate diameter averages 12 cm. in America, and that the transverse diameter is, on the average, less than 13 cm. Where the measurements in two peoples of common stock like the Americans and ourselves show such large variation, it seems to be impossible to define the "normal" female pelvis more closely than by saying that it is that pelvis which will support the weight of her trunk on her legs and give passage to a full-sized child at term.—I am, etc.,

Moreton-in-Marsh, Glos., Aug. 1. CLARK NICHOLSON.

When to Operate in Appendicitis

SIR,—Even a general practitioner finds the answer to Mr. R. Rutherford's letter (*Journal*, July 31, p. 244) fairly easy. The Ochsner-Sherren expectant treatment of appendicitis cannot possibly be carried out properly save in the immediate neighbourhood of an operating theatre and a first-class surgeon. The reason for this is that in a few cases spreading peritonitis may at any moment necessitate an appendicectomy which is likely to be a difficult one. If this relatively uncommon complication arises in the patient's home during the night the following risks occur: (1) the relations, or even the nurse, will value the doctor's rest more highly than they should, and not send at once; (2) a difficult operation under bad conditions, or a bumpy ambulance journey with an ill patient, may be necessary; (3) some—and probably several—hours' delay will take place when every hour is of the utmost value.

I consider it dangerous to teach this method to undergraduates, some of whom will inevitably misapply it. The simple and uniform rule—attempt removal when diagnosed—is nearly as safe, and the Ochsner-Sherren method should be taught only to the postgraduate with surgical leanings.—I am, etc.,

Woodford Green, July 31. E. B. GREGONO.

Treatment of Laryngeal Diphtheria

SIR,—When I was in practice as a superintendent of a fever hospital I obtained a considerable experience of both tracheotomy and intubation. It was with great interest therefore that I read Dr. A. Gardner Robb's paper in the *Journal* of August 7 (p. 264). I agree with him that intubation is the operation of choice—that is, in hospital practice but not in private practice. As regards instruments, I came to the conclusion that Moreau's modification of Bayeux's tubes and introducer were the best. Dr. Robb does not mention these. Bayeux's instruments were a modification of O'Dwyer's. I am under the impression, however, that in several of the large fever hospitals aspiration has taken the place of intubation.

Dr. Robb asks for information on the subject. May I be allowed to refer him to my book (*A Textbook of Infectious Diseases*, p. 204), in which he will find some statistics, though they are not so extensive as his. Statistics on this subject that can be fairly compared are not easy to obtain. May I also refer Dr. Robb to a paper published in the *Edinburgh Medical Journal* for March, 1902.—I am, etc.,

Hemingford Abbots, Hunts, Aug. 9. E. W. GOODALL.

Anaesthesia in General Practice

SIR,—I am following with great interest the series of articles on this subject. I notice that Dr. Blomfield (*Journal*, July 24, p. 175), in discussing basal narcotics' states that "pernocton . . . never found great favour . . ." in this country. In my experience this drug has given complete satisfaction. I have used it regularly in quite a large number of cases for a period of nearly three years. It has the advantage of requiring no previous preparation of the patient and is simple to administer. A natural sleep is induced with a dose of 4 c.cm. for a normal adult almost before the needle is withdrawn, and the patient never remembers anything of the journey to the theatre or the subsequent administration of ether or gas and oxygen. There are no unpleasant after-effects, and it materially lessens the amount of ether necessary when the latter is used. It may be that I have been fortunate and that I have yet to meet some of the "snags." If there are any I will be very pleased to hear of them.—I am, etc.,

H. GARNER-EVANS, M.B.

Wellingborough, Northants, Aug. 4.

Universities and Colleges

UNIVERSITY OF LONDON

Owen William Roberts, M.D., M.S., F.R.C.S., has passed in the examination for the External Diploma in Public Administration.

UNIVERSITY OF DURHAM

Under the new statutes for the University of Durham, made in pursuance of the Act of 1935, the King in Council has appointed Professor James Fitzjames Duff to be Warden of the Durham Colleges, and Lord Eustace Percy to be Rector of King's College, Newcastle-upon-Tyne. Both appointments will take effect on September 6.

Obituary

EDWIN SMITH, M.D.

Coroner for the Western District of London

We regret to announce that Dr. Edwin Smith, Coroner for West London, died at the age of 66 on August 9, after a long illness.

The only son of Mr. Edwin Smith, of the Inland Revenue, he was born at Melton Mowbray, and was educated at Perth Academy and the Dundee High School. Dr. Smith received his medical training at St. Thomas's Hospital, where he had a distinguished career, being Entrance Science Scholar, William Tite Scholar, Treasurer's Gold Medallist, and, later, house-surgeon. He qualified M.R.C.S., L.R.C.P. in 1892, took the London M.B. with honours in 1894, and the M.D. in 1895. In 1908 he was called to the Bar by the Middle Temple. For some years Dr. Smith was the London University Lecturer in Forensic Medicine and Toxicology to his old hospital, and also examined in forensic medicine at Oxford University. Before being appointed Coroner for West London, he was Deputy Coroner for Westminster and South-West London. He contributed articles on medico-legal subjects to the *Practitioner's Encyclopaedia of Medicine and Surgery*, and the section on medico-legal problems in Fairbairn's *Practitioners Encyclopaedia of Midwifery and Diseases of Women*.



Edwin Smith was a man of strong convictions and, on occasions, outspoken in his criticisms of the profession to which he belonged; his comments a few years ago on the home treatment of insurance patients gave rise to a storm of protest. Characteristic of him was his remark on a man afflicted with an incurable disease who had committed suicide: "This man did for himself what any man would have done for a dog." "Suicide," he said on another occasion, "is the only enterprise where, if you succeed, you are called insane. If you fail you are supposed to be sane." It is not surprising that he held the view that a strong case could be made out for the use of the lethal chamber for those undergoing prolonged suffering incapable of relief. As a result of his experience as coroner he was a firm advocate of safer roads, and had little patience with those whose carelessness exposed themselves and others to danger, deploring the fact that cyclists were not made to carry rear lamps.

Dr. Smith was a man of many interests, chief among which were music and magic. A contribution of his to the *Musical Times* was entitled "On Faulty Sensations of Musical Pitch, with Notes of a Personal Experience." He was a member, and chairman of the council, of the Magic Circle, and himself invented a number of tricks, the best known of which was the "E.S. ring and rod."

Dr. Smith in 1910 married Edith Catherine, daughter of Mr. H. D. Dyer, and had one son and two daughters.

Mr. S. INGLEBY ODDIE, Coroner for Central London, writes: Dr. Edwin Smith came to me some seventeen years ago to ask if he might make a study of Coroners' Law and procedure in my courts, as he was deeply interested in medico-legal subjects and was a member of the Bar. He was at that time in a busy general practice in South London, but he found time to attend my office and courts almost daily for some months, and quickly mastered the details of practice in the Coroner's Court. When a vacancy arose I was glad to appoint him my deputy, and he served in that office efficiently and well until he obtained the appointment of Coroner for North-East London, and later, in 1930, for West London.

Edwin Smith was a shrewd and highly intelligent man, and this, coupled with a kindly and sympathetic nature, made him a very competent and useful coroner, and although he had no practical experience of the law his years spent in general practice as a doctor proved far more useful to him when dealing with the mass of medical problems which came before him every day. He carried on his work quietly, carefully, and expeditiously, and did not pander to the sensational press, seeking rather to get to the root of the matter, to abolish suspicion where there was no real ground for it, to ease the burden of distress which falls on the relatives, and to arrive at the truth.

His personality was unusual, for he played no games, was practically a teetotaller, was a non-smoker, and apparently took no exercise and but little holiday. He was happy, however, in the possession of two hobbies—music and conjuring—and he had an ideal home life. His children and his wife shared his musical enthusiasm, and all played either the violin, the piano, or both, and he often spoke of the pleasure he got from his family orchestra. He was a brilliant success as a medical student, and in later life exhibited a sound, simple common sense which must have endeared him to his patients and afterwards to those who appeared before him in his courts.

It was characteristic of his kindly nature and thoughtfulness that he should have left instructions that the announcement of his death should not be made until after his cremation, thereby avoiding the fuss and formality which he detested.

Dr. F. TEMPLE GREY writes: In the passing of Edwin Smith both medicine and law have lost a very competent practitioner. After a brilliant scholastic career he went into general practice, where he gained a knowledge of men and medicine which made it difficult for a medical witness to theorize overmuch; his training in the law gave him a firm grasp of the principles on which an impartial inquiry should be conducted. His shrewdness made his work of great value to the State, and his advice was sought by many. Like so many outstanding men he was very approachable, for he combined with thorough efficiency a charming personality—a combination rare enough to make his passing a matter of regret to the State and of grief to his friends. His friends—and he had many—will miss him sorely.

[The photograph reproduced is by the Topical Press Agency.]

REGINALD FRANCIS JOWERS, F.R.C.S.

Consulting Surgeon, Royal Sussex County Hospital, Brighton

We regret to announce the death on August 7 of Mr. Reginald Francis Jowers, consulting surgeon to the Royal Sussex County Hospital and the Victoria Hospital, Lewes.

Mr. Jowers, the second son of the late Mr F. W. Jowers, F.R.C.S., qualified L.S.A. in 1885, M.R.C.S. and L.R.C.P. in 1886, and was elected F.R.C.S. in 1888. He received his medical education at St. Bartholomew's Hospital, where he held the posts of house-surgeon and

resident obstetrical officer. Subsequently he was resident clinical assistant at the East London Hospital for Children. For the following appreciation and account of his career we are indebted to Mr. Hugh N. Fletcher.

For many years Mr. Reginald F. Jowers was an outstanding figure in Sussex, and was known not only as a surgeon whose exceptional skill was sought far and wide, but as a man of great charm and character. After Winchester and St. Bart's days he became house-surgeon to the Royal Sussex County Hospital, Brighton. In 1889 he was appointed honorary assistant surgeon and in 1901 honorary surgeon to the hospital, an active connexion which lasted until his retirement under the time limit in 1921, when he became consulting surgeon. He was also honorary surgeon to the Victoria Hospital, Lewes, and to King Edward VII Hospital, Haywards Heath, for some years. During the war he was a member "à la suite" of the 2nd Eastern General Hospital and served with the rank of lieutenant-colonel. He had been a member of the British Medical Association since 1889, and acted as Vice-President of the Section of Surgery when the Association met at Brighton in 1913. Throughout its long history the Royal Sussex County Hospital has never had a more devoted servant, or one whose work brought to it greater distinction.



Jowers was a big man in every sense of the word. Tall of figure and of handsome presence, his keen and vigorous personality gave a sense of power wherever he went, and when one watched him at work this impression deepened. Every problem of diagnosis and treatment was met, not only with wide knowledge, but with a rare common sense and wisdom which rarely allowed him to go astray. For a man so busy it was remarkable how deeply he read. Everything that could be of future use was stored in a retentive memory and annotated and filed in his records. Jowers's chief characteristics as an operator were courage, decision, and an almost uncanny judgement of what best to do under difficult circumstances. It was perhaps this quality of sound judgement which gained him so fully the trust of his colleagues. Not apparently a quick operator, he nevertheless got through an enormous amount of work in an afternoon and seemed never to tire. The high standard that he demanded of himself he also required in others, and no slackness of any kind was allowed to pass. Duty was to Jowers a watchword which was never broken under any circumstances, and his example in this respect must have been an enduring inspiration to many generations of house-surgeons who worked for him. He hated sham and insincerity and incompetence, and was sometimes very outspoken, but always with the courage of his convictions. None the less, he had the kindest of hearts, and one of the happiest traits in his character was his love of children.

In his prime, and his prime seemed to last right up to the time of his retirement, Jowers's reputation brought him work which must have taxed his strength to the utmost. He was trusted implicitly by doctors and patients alike, and few have more richly deserved such confidence. Indeed, overwork probably brought on the distressing illness which clouded the last few years of his life. Suddenly, soon after his retirement from practice, when he was looking forward to more leisure and to the enjoyment of the sports dear to his heart, he was struck down by subacute combined degeneration of the spinal cord. Some of us wondered how such an ardent temperament would face the disappointment and inaction which such an illness meant. But it brought out a greatness of spirit and a courage which was the more poignant because one knew the self-discipline which it must have entailed.

And so has passed one whose memory will be cherished by many a staunch friend, and a true man who greatly served his time and generation. He will be especially missed by those who were privileged to know him in his home, or to share in those country pursuits, fishing, shooting, and golf, which he enjoyed with such light-hearted, almost boyish, enthusiasm. To his family, and especially to his widow, whose constant and unselfish devotion sweetened the lot of a sorely tried spirit and softened the hardship of long suffering, the thoughts and sympathy of all will go out.

Medical News

The annual dinner of the Chartered Society of Massage and Medical Gymnastics will be held at the Café Royal, Regent Street, on Wednesday, September 22, at 7.30 p.m.

The second International Congress of Gastro-enterology will be held in Paris from September 13 to 15, on the occasion of the World Exhibition, under the presidency of Professor Pierre Duval. The following subjects will be discussed: (1) early diagnosis of gastric cancer; (2) acute and chronic obstruction of the small intestine. The Paris congress will be followed on September 16 by an International Congress of Hepatic Insufficiency at Vichy under the presidency of Professor Loeper of Paris.

The twenty-first International Congress on Alcoholism will be held at Warsaw from September 12 to 17. Particulars can be obtained from the honorary secretary, 33, Bedford Place, Russell Square, London, W.C.1.

Notice is given in the *London Gazette* of July 30 that a petition of the Dean and the Chairman of the Council of the London (Royal Free Hospital) School of Medicine for Women, praying for the grant of a Charter of Incorporation to the school, has been presented to His Majesty in Council; and, His Majesty having referred the petition to a committee of the Lords of the Council, all petitions for or against such grant should be delivered at the Privy Council Office on or before August 31.

The National Advisory Council and the Grants Committee for Physical Training and Recreation issued on Thursday a booklet called *National Fitness—The First Steps* (H.M. Stationery Office, price 2d.). It is primarily intended for the use of local authorities and voluntary organizations, but the Council hopes it will be of interest to the public as well. This discusses briefly the objects in view in the campaign for national fitness, and many possible methods of promoting them. The powers of local authorities are indicated and the extent of the grants which may be made towards the capital cost of approved schemes. The grants will vary from 25 to 75 per cent. of the accepted estimate of costs according to local needs and economic circumstances, but do not provide for aid in maintenance except in cases of special hardship. The booklet lists finally many of the national voluntary organizations interested in the campaign, and the twenty-two Area Committees which are being set up in connexion with it.

The King has reappointed Dr. V. W. T. McGusty, O.B.E., to be a Member of the Executive Council of the Colony of Fiji for a further period.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1., on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.* SECRETARY, *Medisecra Westcent, London.*

The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone 62550 Dublin).

QUERIES AND ANSWERS

Vaccine Reactions

"RURAL G.P." writes: A patient suffering from chronic catarrh was given an autogenous pneumococcal vaccine at intervals from January to the middle of March. She was persistently overdosed, and an exacerbation in the form of very severe headache, at times one-sided, accompanied by an urticarial type of facial rash, has persisted since the last dose of vaccine. Treatment by glucose, calcium gluconate, and whole blood injections has had no effect. Is the condition a permanent one? If not, how long can it be expected to last, treated or untreated?

Parathyroid Secretion

Major W. GUYON RICHARDS (London, W.1) writes: In the interesting article on parathyroid secretion in the *Journal* of May 1 (p. 929) it is stated that since parathyroid extract is destroyed in the alimentary canal it is therefore worthless when given by mouth. This is not my experience, and my practice is to give an indicated drug with the glandular preparation. Some years ago, when practising at Burgess Hill, we had a considerable number of cases of varicose ulcers of the legs, which were treated by simple dressing and parathyroid extract given orally. The results were excellent, in marked contrast to those obtained before the parathyroid extract was given. There was no need to give calcium, as our water supply contained this in abundance, and the parathyroid fixed it in the tissues. Is not the word "destroyed" a wrong one to use in this connexion, surely "changed" would be more correct? Parathyroid extract given by the mouth can be a valuable addition to other treatment, and is even effective when used alone under conditions like those at Burgess Hill. Possibly with a needed addition it acts as a catalyst. Injection may be more efficient, although in some hands it is risky, but in cases in which it is not feasible it is certainly possible to obtain results by oral administration.

Irish Medical Folk-lore

Dr. M. G. KIERANS (Co. Monaghan), prompted by Dr. Maguire's note (*Journal*, July 31, p. 252) to the effect that the aetiology of itch was long known to the Irish peasantry, writes: An old lady in County Armagh advised a patient of mine who was anaemic to steep minced liver overnight in cold water and to drink the liquid in the morning. She informed him that she had cured her own daughter of anaemia by this treatment over thirty years previously. I remember a boy, thirty years ago, who was treated for anaemia in a similar manner, raw beef being used instead of raw liver. An Irish scholar recently informed me that Irish manuscripts contain many medical references. This is to be expected in the records of a high civilization, and raises hopes that medicine too will benefit from the revival of Gaelic learning.

Income Tax

Interest on Deposit Receipt

"ALPHA" explains that unknown to him a lady instructed her solicitor to place £200 on deposit. She died on June 22, 1936, and "on October 8, 1936, this deposit . . . with the sum of £29 11s. 9d. interest" was handed over to "Alpha." Is he liable to pay tax on the interest?

** When money is placed on deposit receipt the interest does not arise, and is therefore not liable to tax until it is "uplifted." Apparently this has not yet taken place, or did not take place until after the deposit had been legally transferred to "Alpha." In that case he is liable to account for the tax on the £29 11s. 9d. as being the person entitled to the interest at the time it became liable to assessment.

Depreciation of Radium and Apparatus

"ELEMENT" bought 100 mg. of radium in 1933, the cost of the radium being £1,200 and the cost of the containers, lead safe, instruments, £226. The cost of radium has dropped, and its present value is now, say, £750. Can he claim any deduction for the depreciation?

** There is no general allowance for a wasting asset except for depreciation of plant and machinery by reason of wear and tear. It would probably be held that this does not cover the case of a radium equipment, except possibly as regards the safe and instruments. On the other hand it might reasonably be contended that the use of the radium involves some expenditure of its force, and—on the analogy of a stock of a particular drug—the cost should be spread over the probable effective life of the radium acquired in 1933. That would involve reopening the assessments for 1934-5 and subsequent years. In no case can an allowance be claimed on the ground that the present cost is below the actual cost in 1933.

LETTERS, NOTES, ETC.

Pregnancy Tests in Missed Abortion

Dr. T. D. CULBERT writes: A patient, a multipara aged 44, became pregnant in December, 1936, and this diagnosis was verified by two consultant obstetricians. Early in March there was some uterine bleeding, and after two weeks on morphine and rest in bed this subsided, although she lost a fair amount of blood. Neither foetus nor placenta were passed. In May I was called to see her for a recurrence of the bleeding, and the abdomen was no larger than two months previously. This time it was much less severe, and the patient was soon up and about. I told her I doubted that she was pregnant, and thought that her condition was possibly menopausal. Early in July she brought me a specimen of urine; an Aschheim-Zondek test proved negative. I was called to see the patient on July 23, and found she had passed a complete macerated three-months' abortion. This is the first time I have come across a case of "missed abortion" in which an Aschheim-Zondek test was carried out. The result, a perfectly correct one, was a little misleading in view of the patient's age.

A Safe Milk Supply

The importance of pasteurization for ensuring a safe milk supply is emphasized in a memorandum entitled "The Production, Inspection, and Laboratory Control of Milk," issued by United Dairies, Ltd., 34, Palace Court, London, W.2. Raw milk from tuberculin-tested herds can be, within reason, guaranteed free from tubercle bacilli, but not from those of contagious abortion, which cause undulant fever; from mastitis, which predisposes the animal to become a carrier of the organism that causes septic sore throat; and no herd testing can prevent the contamination of milk during or after drawing with scarlet fever, typhoid, diphtheria, and other germs. "In addition to safety the public have a right to demand a milk that will keep a reasonable time under household conditions. For this we require a pasteurized milk with a comparatively low count of souring organisms. To attain a satisfactory standard in this respect a 'clean milk' is essential for pasteurizing." The importance of proper cleaning and sterilizing of buckets and other utensils used for handling the milk is urged, as well as the need for cleanliness of milkers' hands, overalls, and caps

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

128 Carbon Tetrachloride Poisoning

DERVILLÉE (*J. Méd. Bordeaux*, April 24, 1937, p. 557) states that carbon tetrachloride poisoning is not rare, since this compound is widely used in industry in the manufacture of rubber and varnish, in the composition of fire extinguishers, and as a grease solvent: it is also used extensively by hairdressers. Therapeutically, carbon tetrachloride is employed as an antiseptic, as an anthelmintic, and in dermatology as a lotion. Poisoning depends upon external factors—for instance, insufficient ventilation—and also upon intrinsic factors, such as individual predisposition, chronic alcoholism, and renal or hepatic disease. Carbon tetrachloride most commonly enters the body by the respiratory route, but occasionally also by the alimentary tract and through the skin. Toxic absorption manifests itself in many forms, of which the cerebral is the most serious and the hepato-renal the most usual. In the latter type there is first a period of excitement, then a hepatic stage characterized by vomiting, hepatic pain, and enlargement, and, finally, after a fleeting period of improvement, a renal stage in which there is oliguria and albuminuria. Purely renal forms, in which an acute nephritis of the azotaemic and oedematous type is found, are also met with. In the pulmonary types acute oedema of the lung, due to the decomposition of carbon tetrachloride to phosgene, is present. Cutaneous forms are also found, since carbon tetrachloride may give rise to dermatitis, which in severe cases may go on to necrosis. The prognosis is variable and must be guarded, since it largely depends on the method of exposure and on the degree of individual susceptibility. Treatment is purely symptomatic, and care must be taken to avoid further damage to the liver or kidneys by drugs. Venesection is required when pulmonary oedema is present. Bicarbonate of soda should be administered orally, and hypertonic saline intravenously. Cardiac stimulants may be necessary. In order to prevent poisoning the room should be well ventilated; workers should be examined for lesions of the lungs, liver, or kidney. Alcohol should be prohibited, and less toxic substances should be employed whenever possible. Stabilized carbon tetrachloride should be used in the manufacture of fire extinguishers, and the danger of decomposition in a hot and humid atmosphere not forgotten. The application of therapeutic lotions containing carbon tetrachloride should be performed in well-ventilated rooms, with the face protected to prevent the inhalation of fumes. It is contraindicated as an anthelmintic in patients with hepatic or renal disease, or in alcoholics. The dose should never exceed 2 to 3 c.cm. of the pure drug.

129 Gout

C. G. FINCK (*Brux. méd.*, June 6, 1937, p. 1176) points out that gout is not disappearing, but is manifesting itself in other forms. He found classical symptoms of gout in 60 per cent. of his patients before the war, in 11 per cent. between 1918 and 1922, in 48 per cent. between 1922 and 1931, and in 27 per cent. between 1932 and 1937. He states that the normal ratio of uric acid in the blood corpuscles to that in the plasma is as 2 to 4, and that when this ratio drops to 1 to 8 an acute attack of gout occurs. In 1926 he showed by experimental work that (1) an attack of gout is preceded and accompanied by a progressive change in the vago-sympathetic equilibrium towards hypervagotonia; (2) these changes are accompanied by parallel variations of the acid-base equilibrium in the direction of alkalosis; (3) any factor producing vagotonia or alkalinization may produce an attack; and (4) any agent stimulating the sympathetic nervous system or inhibiting the vagus, or the presence of any acid agent, prevented an attack. The condition may be present without demonstrable clinical symptoms. The intensity of articular manifestations depends on the tone of the autonomic nervous system—for example, in old age when vagotonia is present the condition is less painful than when it occurs in younger persons—and also on the anatomical state of the kidney. Attacks of gout in persons with kidney disease are less characteristic than in those with normal kidneys, because the permeability of the kidney is lowered and the elimination of uric acid is less. Gout may occur in articular attacks which do not present classical symptoms, in extra-articular attacks affecting mesodermal tissue—namely, tendons, fibrous organs, and cartilages—and in visceral manifestations. It is important to diagnose the masked forms. Clinically the gravity of the condition is inversely proportional to the acuteness of its manifestations. The definitely gouty person periodically discharges large quantities of uric acid from his tissues. In the masked form of gout there is a permanent saturation of the tissues with uric acid, and this may result in arterial lesions, such as atheroma and arteritis, by the precipitation of cholesterin and its action on the autonomic nervous system.

130 Hay Fever and Asthma

F. F. FURSTENBERG and L. N. GAY (*Johns Hopk. Hosp. Bull.*, June, 1937, p. 412) have treated 907 patients for hay fever and asthma by injections of pollen extracts and have observed constitutional reactions in 4.9 per cent. of cases during an observation period of six years. These occurred in 11.7 per cent. of private patients and 5.9 per cent. of hospital patients treated with pollen extract. The most important cause was the change from injections of large volumes of a weak extract to that of small volumes of strong extract. Less important causes were the use of over-concentrated extracts, injections at too close intervals, too large an increase in the dose, and too large an initial dose. Patients who were receiving pollen and inhalant extracts together had very few constitutional reactions, and those receiving only inhalant extracts had even fewer.

Surgery

131 Gravel in the Kidney and Ureter

G. MARION (*J. Urol.*, April, 1937, p. 297) records five cases in which gravel in the kidney or ureter caused partial or complete obstruction. It is suggested that post-operative anuria may sometimes be due to obstruction of the renal tubules by crystals which are formed after certain operations on the urinary tract. The formation of gravel in the ureter is usually followed by its spontaneous passage, and this may be unnoticed if the patient possesses both kidneys, but when one has previously been removed anuria may be produced, and two instances of this are described. Gravel in the pelvis of the kidney gives rise to the same symptoms as calculus, and in some cases the gravel fills the whole of the pelvis and calices. Sometimes it is passed as a result of medical treatment: an instance is given of a young girl in whom radiography showed a stone the size of a bean, while an earlier photograph had shown it to be coral-shaped and much larger. It was established that, in the first *x*-ray photograph, what appeared to be a large branching calculus was really gravel which had passed in the interval between the taking of the two photographs. Pyelotomy was later carried out for the removal of the stone. Any variety of lithiasis may give rise to this gravel formation, and in three cases in which the deposit was analysed it was found to consist of oxalates, urates, and phosphates. A correct diagnosis cannot always be made by radiography, but when anuria

is present and no stone can be seen gravel should be suspected. In this case, as when a stone is present, the treatment consists of ureteral catheterization, followed by surgical intervention if the gravel or stone is not passed and the obstruction relieved.

132 **Hallux Valgus**

HENDRIX and KEMPENEERS (*Scalpel*, Liége, May 22, 1937, p. 641), in describing the pathogenesis and treatment of hallux valgus, emphasize the importance of the early treatment of all painful lesions of the foot. Hallux valgus should not be considered only as a local deformity, but also as a symptom of some other condition which would have been curable without recourse to surgical treatment had it been treated in the early stages. In many early cases the condition may be improved by the wearing of a surgical boot. Hallux valgus often develops in an adult who has suffered from rickets in infancy. It may be preceded by valgus of the foot and the presence of scoliosis. There is an external rotation of the foot and leg, with flexion of the knee and of the hip-joint. The lumbar lordosis which results is compensated for by dorsal kyphosis. At this stage an orthopaedic boot may correct the position of the foot, but if no treatment is carried out hallux valgus may develop in adult life. High heels may be contributory factors, as the weight of the body is then thrown forward on to the big toe. Successful treatment must correct the abduction and rotation of the big toe, and bring the others into a correct position; it must draw the first and second metatarsal bones together, re-establish the muscular equilibrium, and correct the flattening of the anterior and longitudinal arch. Hohman's operation alone fulfils all these requirements, and is therefore recommended; the technique is fully described and illustrated.

133 **Surgical Treatment of Typhoid Carriers**

F. A. COLLER and F. C. FORSBECK (*Ann. Surg.*, May, 1937, p. 791) performed cholecystectomy on eighteen chronic biliary typhoid carriers, aged from 15 to 55, of whom fifteen were females and three males. All but two were cured, and no deaths took place. Eligibility for the operation was decided on the patients' being gall-bladder carriers and good surgical risks. A cure was considered to be effective when twelve consecutive negative specimens of the faeces had been obtained, and at least one specimen of negative bile.

134 **Albee's Operation for Spinal Caries**

E. T. CATO (*Austral. New Zeal. J. Surg.*, April, 1937, p. 361) is of the opinion that in the treatment of tuberculosis of the vertebral bodies absolute rest is essential in order to ensure that the lesion heals as quickly as possible. Internal splinting by means of a bone graft used in conjunction with an external apparatus gives more complete fixation than if the internal splint is applied alone. Convalescence is not shortened by the use of the bone graft, but a more extensive and efficient ankylosis is obtained, and the risk of recurrence is lessened. The presence of sinuses and therefore of secondary infection, and the tuberculous involvement of more than a few vertebrae, are contraindications. Abscess formation is an indication for operation, since the increase in fixity of the diseased area assists in shortening the time of absorption. The presence of kyphosis may necessitate an angled graft, or, if the deformity is too acute, the angle of the graft can be increased by multiple cuts on its convexity. The Albee operation has been carried out in preference to that of Hibbs in the thirteen cases reported for several reasons: it is more speedily performed, it produces less shock, there is less likelihood of failure, and fixation is immediate and is obtained before bony union occurs. The technique is fully described. After operation the patient is not moved for ten days, and then only at intervals for examination and attention. Progress is controlled by radiographs taken every three months. The patient is not allowed up for at least six months, or until after all pain, spasm, and tenderness have disappeared and bony union of the graft is evident. A surgical corset is worn for at least another six months. A good result was obtained in every instance.

135 **Putti's Arthrodesis of the Shoulder**

D. LOGROSCINO (*Arch. ital. Chir.*, May, 1937, p. 591), who records seven illustrative cases in patients aged from 4 to 77, states that in the years following the first arthrodesis of the shoulder performed by Albert in 1878 the operation was regarded with scepticism and distrust. However, Putti's method of combined intra- and extra-articular arthrodesis of the shoulder, which he has employed at the Marino di Oltra Hospital, deserves to be widely employed owing to its simplicity and excellent results.

Therapeutics

136 **Formol Toxoid for Staphylococcal Lesions**

G. RAMON *et al.* (*Presse méd.*, June 16, 1937, p. 889) give the results obtained by using formol toxoid in the treatment of various staphylococcal lesions of the skin, particularly that of chronic furunculosis. Details are given of 400 recent cases treated by formol toxoid. Of these the largest number were cases of recent or chronic furunculosis, of which there were 239 instances, and there was complete recovery in all but thirty-four cases, five of which were improved, while the remaining twenty-nine relapsed. Cases of anthrax, acne, staphylococcal adenitis, and sycosis barbae were also treated with good results, the majority of patients being cured or improved. After a test injection to ascertain the allergic reaction of the patient, subcutaneous injections of formol toxoid were given in increasing doses of from 0.25 c.cm. to 2 c.cm. at intervals of a week or less. Good results have also been obtained in other parts of France and in her colonies, but the lack of success in England and America is attributed to the smallness of the dose of formol toxoid administered. This method of treatment has been tried in cases of osteomyelitis and staphylococcal septicaemia, but the results have not been uniformly satisfactory.

137 **Dystrophia Adiposo-genitalis**

P. PLUM (*Ugeskr. Laeg.*, June 17, p. 643) states that since 1930 various tests have been undertaken in the Children's Department of the Rigshospital in Copenhagen on preparations which were claimed to contain hormones calculated to influence the course of dystrophia adiposo-genitalis. The lack of uniformity in the action of these preparations was probably due to the inadequacy of their concentration. More encouraging results were observed during the past half-year; five cases of dystrophia adiposo-genitalis, one of adiposity, and two of cryptorchism were treated with deep intramuscular injections of "physex," which is prepared from the urine of pregnant women and is standardized according to its lutein action on mice. Two of the cases of dystrophia and both those of cryptorchism were treated only with this preparation, while the others were given thyreoidin in addition. The usual dose was 200 mouse units of physex every day for some weeks, and later every other day. This dosage is heroic compared with that of other investigators, and the author's policy has been to achieve a well-marked and rapid action, and thereafter to work down to the optimum and most economic dosage. According to the case histories, photographs, and tables published, this treatment was invariably associated with marked growth of the genitals. Erection was observed in two cases, and in the only case in which spermatozoa were sought in the urine they were found there. This treatment did not affect the basal metabolism or the abnormal distribution of fat, but when it was

supplemented by thyreoidin and an emaciating diet great loss of weight followed rapidly. A boy aged 12, who was suffering from adiposity and a low basal metabolism, but had normally developed genitalia, showed growth of the genitals accompanied by loss of weight when physex and thyreoidin were given. In one of the two cases of cryptorchism associated with adiposity, the treatment was followed in two weeks by the descent of the testicles and by the growth of the genitals. In the other case there was no change in the position of the testicles, but there was a marked growth of the penis after two months' treatment.

Radiology

138 Cardiovascular Complications

H. BARTSCH and G. WACHNER (*Klin. Wschr.*, May 22, 1937, p. 743) describe the effects on the cardiovascular system which they were able to observe in a large proportion of cases of carcinoma of the pharyngo-laryngeal region treated by Coutard's method of protracted and parcelled deep *x*-radiation. The complications were caused by the toxic products of the irradiated tissues, and manifested themselves in myocardial degeneration and disturbances of the cardiac rhythm. The fall of the blood pressure and the acceleration of the pulse may lead to coronary insufficiency in cases predisposed to angina pectoris. The authors therefore advise careful observation of the cardiovascular system and appropriate prophylactic measures in all cases treated by Coutard's method.

139 Prostatic Enlargement

G. H. SCHNEIDER (*Med. Welt*, May 15, 1937, p. 679) ranges himself on the sides of other German writers who have recently praised the *x*-ray treatment of prostatic enlargement, and he reports twenty-four successful cases. Besides avoiding the risks of narcosis and operative trauma, the preservation of sexual function is claimed. The dosage is worked out after pelvimetric measurements of sacro-prostatic, pubo-prostatic, and sacro-pubic saggital distances. The application is in the form of 90 per cent. of the erythema dose to a total of 350 to 500 *r* according to the focal distance chosen; preferably five fields of 10 by 15 cm., one perineal, two parasymphyseal, and two parasacral, are used. Before the benefit of the intensive irradiation is registered and the treatment is repeated (often two months) five or six weekly supplementary "saturation" applications are made, each of 50 to 100 *r*, from large, distant symphyseal or sacral fields. The treatment is to be combined at first with catheterization, and may cause a temporary increase in dysuria. The widespread opinion that advanced cases of prostatic hypertrophy are not radiosensitive is stated to be unfounded.

140 Varying Skin Sensitivity

J. BORAK (*Wien. klin. Wschr.*, May 14, 1937, p. 632) stresses the relative sensitiveness of the different constituent elements of the skin to *x*-radiation. Experiments have proved that the single lethal dose for the sweat glands is about 2,500 *r* units, for the epidermis 2,000 *r* units, for the hair follicles 1,600 *r* units, and for the sebaceous glands 1,200 *r* units. There is also a difference in the latent periods between the application of the rays and the final effect—for example, the sebaceous glands are obliterated three to four weeks after the irradiation, while the sweat glands take three to four months to disappear. This is probably due to the different mechanisms of the cell destruction in each case. The rays act directly on the sebaceous gland, while the sweat glands are obliterated as a result of the damage to their capillary blood vessels. These different actions are explained by the different biological nature of the sebaceous and sweat glands. Sebaceous glands belong to the holocrine glands, while sweat glands belong to the merocrine glands. In the first the secretion is due to a gradual elimination of the cells themselves, while in the second the secretion is only a product of the glandular cells.

141 Cholecystography

E. N. COLLINS and J. C. ROOT (*Clev. clin. Quart.*, April, 1937, p. 85), in an attempt to standardize procedure in the newer developments of cholecystographic examination, point out the following features. It has been found that the administration of multiple doses of the dye produces greater density in the visualized gall-bladder than does a single dose, and it makes non-visualization of greater significance and it does not harm the patient. The administration of large amounts of sugar and other carbohydrates, before and during examination, facilitates the excretion of the dye by the liver. One ounce of a mixture of egg yolk, lecithin, and glycerin is as efficacious in emptying the gall-bladder as the fat meal. The use of pitressin in eliminating confusing shadows in the intestinal tract which lies over the area of the gall-bladder has precluded the necessity for re-examination; it has also made the multiple dose oral method of cholecystography possible on the same day that barium meal examinations of stomach and small intestine, or barium enema examinations of the colon, are made. In a series of 1,250 cholecystographic examinations pitressin was used in 200 cases, and effective results were obtained in 87.5 per cent. of these. In a more recent series, in which the new ampoule containing 20 pressor units was used, effective results were obtained in 90 per cent. of cases. Diagnosis in these cases is usually simple when there is a history of biliary colic, especially if associated with jaundice, and it may be confirmed by cholecystography. In inflammatory diseases of the gall-bladder physical examination is only of assistance during the acute or subacute stages. The authors observe that during the last five years the operative findings have coincided with the cholecystographic either positively or negatively in 95 per cent. of cases.

142 Transnasal Bronchography

G. SCORPATI (*Rass. Clin. Terap.*, March–April, 1937, p. 92) describes the following method of transnasal bronchography which is in use at the out-patient department of the Forlanini Institute at Rome. About forty minutes before bronchography the patient is given an injection of sedasol or some similar preparation, and twenty minutes later, before the administration of novocain anaesthesia, he is made to gargle with the contents of half a glass of water containing 15 to 20 drops of a 1 per cent. solution of heroin. With the patient in a sitting position a rubber tube attached to a syringe containing 8 to 10 c.cm. of a 2.5 per cent. solution of novocain is introduced into the most pervious nostril and the solution injected drop by drop; the patient is told not to swallow but to take deep breaths. He is then placed first on his left and then on his right side so that the fluid can reach the bronchial ramifications in both lungs. After a few minutes' rest the opaque substance is injected slowly. In the large number of cases in which this method was employed no untoward incidents occurred.

143 Encephalography

J. T. TRAVERS (*Radiology*, June, 1937, p. 704) maintains that when the ventricles and subarachnoid spaces are symmetrically filled with air, or when they are both dilated without a ventricular shift, the presence of a subdural haematoma may be excluded. He also notes that in subdural haematoma the ventricular shift is away from the side of the lesion, while in the presence of scar tissue resulting from a laceration of the brain it is usually towards the lesion. As the clinical symptoms of this con-

dition may simulate those of other post-traumatic sequelae, the differential diagnosis is of importance, since surgical treatment is definitely indicated in subdural haematoma, and the earlier the treatment the better the results, while in other cases with similar clinical symptoms surgery may be definitely contraindicated. Encephalography is also of value in the localization of the subdural haematoma, as the signs and symptoms are often confusing. The author has used encephalography in the study of post-traumatic sequelae of brain injuries, chiefly with the object of determining whether or not there was an actual brain lesion to account for the subjective symptoms. He found evidence of this in a large proportion of such cases. Encephalography proved harmless in patients suffering from the sequelae of brain injuries; in a number of cases, excluding those with adhesions or with cortical atrophy, it has even proved beneficial.

144

Spacing of Radiation

J. C. MOTTRAM (*Brit. J. Radiol.*, June, 1937, p. 494) has shown experimentally that tumours are more adversely affected by gamma radiation spaced over a week than by a continuous exposure of 210 minutes. This was due to the fact that the spacing of the radiation was controlled in such a way as to influence the tumours during the periods of active growth and to avoid the periods of inhibited growth which follow radiation. For large doses the spacing should be wide and for small doses narrow; but each type of tumour requires a different spacing if the highest efficiency in treatment is to be obtained. Further research in this direction is still necessary.

Obstetrics and Gynaecology

145

Acute Ulcus Vulvae

A. CROSTI (*Athena*, May, 1937, p. 210) accepts as a clinical entity the occurrence of acute vulval ulceration due to the *B. crassus* of Lipschütz. It is most common in girls or young women, and is not conveyed by coitus. Acute painful ulcerations, which in the majority of cases are gangrenous, affect the vulva, and there is a variable degree of general prostration and pyrexia. The course is invariably benign, but relapses may occur. Diagnosis and aetiology present difficulty. The bacillus of Lipschütz is usually present—often in nearly pure culture. It is cultivable in agar-ascitic fluid and sugary media and produces much lactic acid, but it is easily confused with (and has been said to be the same as) Döderlein's bacillus. The Lipschütz bacillus, however, has been recovered from the blood and from the aphthous oral ulcers which sometimes accompany the vulval ulceration. Of this a subacute form resembling venereal streptobacillary ulceration, and one with small superficial ulcerations, have been described, but are less common than the gangrenous form. A general rash, usually papulo-erythematous or vesicular, but sometimes pustular, may be present, and slight desquamation may follow. Cure is always speedily obtained by weak antiseptic applications and by rest.

146

Tetany and Pregnancy

P. MANDRUZZATO (*Ann. Ostet. Ginec.*, April 30, 1937, p. 511) states that although the appearance or aggravation of tetany in connexion with pregnancy or the puerperium is not very common, it is associated with a mortality varying from 5 to 30 per cent., and calculated at 7 per cent. from statistics collected in 1913. In Paris the association is very rare. In Vienna comparatively common. In Trieste two cases have been seen in twelve years; the first showed aggravation of pre-existing tetany during pregnancy, its disappearance after parturition, and no recurrence in a succeeding gestation. The second was associated with acute cyanosis eleven hours after spontaneous labour, and it proved fatal on the same day.

Tetany is favoured in pregnancy by the diminution of blood calcium which occurs during the last trimester; evidence of increased neuro-muscular excitability was found by Klaften and others in 85 per cent. of normal pregnancies. Experimentally partial parathyroidectomy often causes tetany, which is curable by the administration of parathyroid extract. There is evidence from several sources that the daughters of women prone to tetany in gestation may themselves suffer similarly in their own pregnancies, and also that the infants of those having gestation tetany are liable to severe attacks soon after birth. Tetany does not appear to lead to abortion, and of the deaths which it has caused those in the puerperium far outnumber those during gestation. Treatment consists in the exhibition of calcium and parathyroid, together with a protective shortening of labour.

Pathology

147

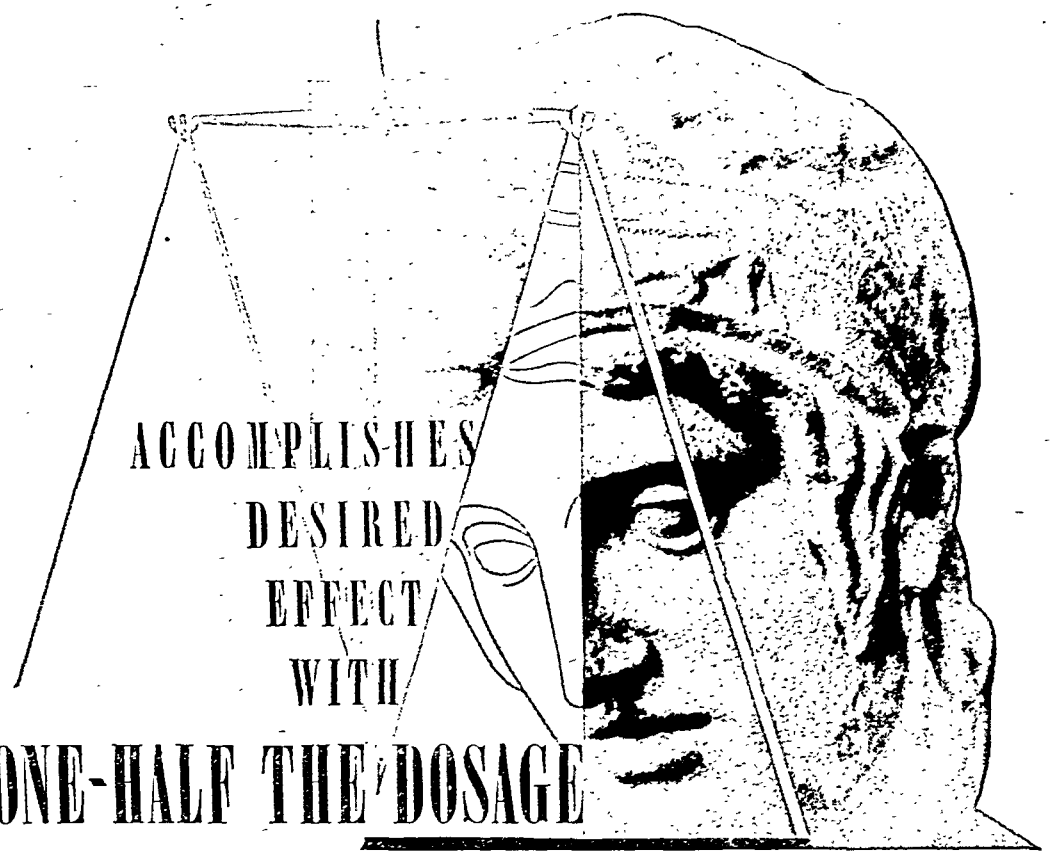
Thermolability of the Tubercle Bacillus

H. J. CORPER and M. L. COHN (*Amer. Rev. Tub.*, May, 1937, p. 663) record the results of a careful study made to determine the heat resistance of the tubercle bacillus. The human type of bacillus was selected, and both virulent and avirulent strains were used. Very finely divided suspensions in a buffered solution—a modified Long's medium at *pH* 7.0—were prepared from cultures about a month old. A special apparatus was devised to ensure the accuracy of the temperature to which the suspension was heated. Immediately after the exposure the organisms were inoculated on to a suitable culture medium. The results showed that a suspension containing 1 mgm. of bacilli per c.cm. yielded negative subcultures after exposure to a temperature of 55° C. for fifteen to thirty minutes, and to a temperature of 60° C. for less than five minutes. Virulent and avirulent strains behaved alike. In other experiments it was found that the bacilli grew well at 42° C. This temperature is higher than that which can be tolerated for any length of time by the human body. Treatment of tuberculosis by hyperpyrexia therefore holds out little promise of success. A few experiments made in rabbits confirmed this conclusion.

148

Pathogenesis of Circulatory Insufficiency

W. ORLOWSKI (*Arch. Mal. Cœur*, May, 1937, p. 283) has made numerous experiments in healthy persons and in those suffering from heart failure, and has found that there is a change: (1) in the capacity of the blood to take up oxygen, (2) in the utilization of oxygen by the tissues, (3) in the dissociation of haemoglobin, (4) in the hydrocarbon, basal, and mineral metabolism, (5) in the acid-base equilibrium, and (6) in the quantity of circulating blood and in the volume of the blood flowing to the heart in one minute. These changes are less marked when the circulation is normal and the myocardium still strong. They may occur during the disappearance of symptoms of circulatory insufficiency or else afterwards. If appearing in the course of circulatory compensation they are signs of latent insufficiency. The author is of the opinion that neither the mechanical nor the chemical theory of circulatory insufficiency wholly explains these changes. Examination of the action on metabolism of efficacious cardiovascular drugs shows that in addition to their well-known pharmacological action they have an influence on biochemical processes in the body. Orlowski believes that chronic circulatory insufficiency is a disease of the whole organism due to a lack of the functional equilibrium of the tissues and organs resulting in metabolic changes. It expresses itself in a change in the biological properties of the serum, which contain factors influencing the growth of fibroblasts. These accelerate the hydrolysis of the albumins and globulins of the blood serum, and increase their ability to fix alkalis.



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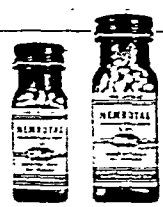
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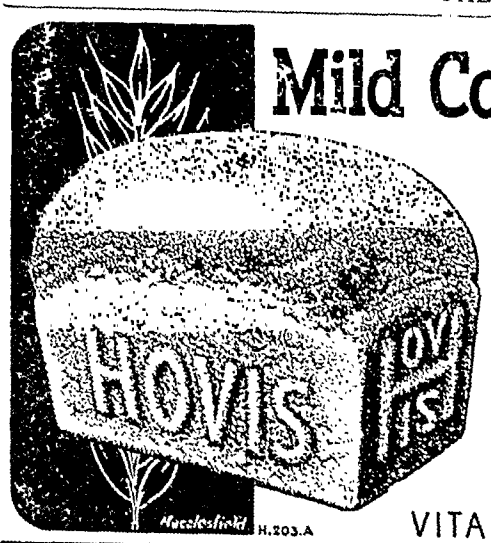
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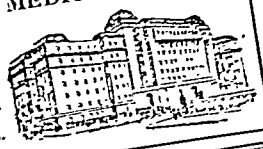
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This REGISTERED HOSPITAL, with a SEASIDE BRANCH at Colwyn Bay, N. Wales, is for the treatment and care of those of the Upper and Middle Classes suffering from MENTAL and NERVOUS DISEASES. TRUSTEES of the Manchester Royal Infirmary.

The Hospital is governed by a Committee appointed by the Extensive grounds. Hard and grass tennis courts, cricket and croquet grounds, and a court

In addition to the Main Building there are separate villas. Golf may be had within easy distance. Occupational therapy.

for badminton. There are also wireless installations

VOLUNTARY, TEMPORARY, AND CERTIFIED PATIENTS received.

The Hospital is nine miles from Manchester, 50 minutes by rail from Liverpool, and 3½ hours from London.

For terms and further particulars apply to the Medical Superintendent, who may be seen in MANCHESTER by APPOINTMENT.

Telephone: GATLEY 2231 (3 lines).

CHISWICK HOUSE, PINNER, MIDDLESEX.

Telephone: PINNER 234.

A Private Hospital for the Treatment and care of Mental and Nervous Illnesses in both Sexes.

A modern country house, 12 miles from Marble Arch, in beautiful secluded grounds. Fees from 10 guineas per week, inclusive. Cases under Certificate, Voluntary, and Temporary patients received for treatment.

Douglas Macaulay, M.D., D.P.M.

BAILBROOK HOUSE BATH.

For sufferers from Nervous and Mental Disorders with or without certificates. The house is gloriously situated in wooded grounds of 20 acres with magnificent views of the City and the Avon Valley. (See *Medical Directory*, page 2322.)

For terms apply, A. GUIRDHAM, M.A., D.M., B.Ch., D.P.M., Resident Physician.
Telephone: Batheaston 8189.

STRETTON HOUSE, Church Stretton, Shropshire.

A PRIVATE HOME for the treatment of Gentlemen suffering from Mental and Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental and Nervous cases are received without certificates as Voluntary Patients under the provisions of the Mental Treatment Act, 1930. See *Medical Directory*, p. 2328.—Apply to the Medical Superintendent, Bracing Hill country. Phone: 10 PO Church Stretton.

THE GROVE HOUSE, CHURCH STRETTON, SHROPSHIRE.

A private Home for the care of and treatment of a limited number of Ladies mentally afflicted. Voluntary and Temporary Patients received under the new Mental Treatment Act, 1930. Medical Superintendent, Dr. MCCLINTOCK.

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MEDICAL AND CONVALESCENT CASES

The Home is a Mansion of Historical interest, standing in 15 acres of garden and grounds, and is situated 14 miles from Northampton, and 12 miles from Bedford on the main London to Northampton Road, fifty miles from London. Both sexes are accommodated. Psycho-therapeutic Treatment is used extensively in suitable cases. Radiant Heat, X-Ray and Ultra-Violet Light, Diathermy and Foam Baths. Billiards, Tennis, etc.

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For Mental Defectives of either sex.
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New Out-patients.—MEN: Mondays and Thursdays, 2 p.m. WOMEN: Tuesdays and Fridays, 2 p.m. CHILDREN: Mondays and Fridays, 10 a.m. In-patients: (a) 235 beds (both sexes) in wards or separate rooms, including 35 beds in a ward of King's College Hospital, which is in use as a temporary annexe of the Maudsley Hospital; (b) a special ward (including some private rooms) for those patients of each sex who are paying the full cost and are otherwise suitable. Terms: £5 a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.

Terms include (with rare exceptions) all forms of treatment, for which there are exceptional facilities as there is a staff of Consultant Specialists, and the Central Laboratory of London County Mental Hospitals is attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., F.R.C.P., F.R.C.S., Medical Superintendent.

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GLOUCESTER

A REGISTERED HOSPITAL for the CARE and TREATMENT OF LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L.M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 300 acres. Voluntary Patients of both sexes are also received for treatment.

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Ladies suffering from all forms of MENTAL ILLNESS are received for treatment, on modern lines, as Voluntary, Temporary, or Certified Private Patients at the Hill End Hospital. Convalescent or mild cases can be treated in a delightful country mansion, with extensive grounds, known as

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A HOUSE licensed for the reception of a limited number of Ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. Approved for temporary Patients. This is a large country house, with beautiful grounds and park, five miles from Sheffield. Tel. No. 40030 Ecclesfield. Res. Phys.: GILBERT E. MOULD, L.R.C.P., M.R.C.S. Station: Grange Lane L. & N.E. Rly.

ST. ANDREW'S HOSPITAL

FOR MENTAL DISORDERS

NORTHAMPTON.

FOR THE UPPER AND MIDDLE CLASSES ONLY

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble, temporary patients, and certified patients of both sexes, are received for treatment. Careful clinical biochemical, bacteriological, and pathological examinations. Private rooms, with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, and X-ray room, an Ultra-Violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation Therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

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The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate, a mile of sea coast forms the boundary. Patients may visit this Branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

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For terms and further particulars apply to the Medical Superintendent (Telephone No. 2356 and 2357 Northampton), who can be seen in London by appointment

NORTHUMBERLAND HOUSE,

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A PRIVATE HOSPITAL for the treatment of mental and nervous illnesses. Conveniently situated and easy of access from all parts. Six acres of ground, highly situated, facing Finsbury Park. Voluntary and Temporary Patients received without certification. Occupational Therapy, Psychotherapy, and other modern forms of treatment.

Telephone: STAMFORD HILL 2688. Telegrams: "SUBSIDIARY, LONDON."
Convalescent Home, KEARSNEY COURT, DOVER. For further particulars, apply to the Medical Sup.

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For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES suffering from mental and nervous diseases, either voluntarily, temporarily, or under Certificate. Patients are classified in separate buildings according to their mental condition.

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E. C. WYNNE-EDWARDS, M.B.(Cantab.), F.R.C.S.(Edin.).
GEORGE H. DAY, M.D.(Cantab.).

For all information apply:
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This Institution is situated in a beautiful and healthy locality within easy reach of London. It is fitted with every comfort. Patients can have Private Bedrooms and Special Nurses, as well as the use of General Sitting Rooms, at moderate rates of payment. Voluntary Patients can be admitted.

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For Terms, apply to the Resident Medical Superintendent—

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Full day and night Nursing Staff. Terms 5 gns. to 7½ gns. a week inclusive.

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Paddington, W.2.

(University of London)

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Further particulars may be obtained from:—Dr. A. E. CLARK-KENNEDY, M.D., F.R.C.P., Dean, London Hospital Medical College, Turner Street, London, E.1.

LONDON HOSPITAL MEDICAL COLLEGE

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Further particulars may be obtained from Dr. A. E. CLARK-KENNEDY, M.D., F.R.C.P., Dean, Turner Street, Mile End, E.1.

UNIVERSITY OF GLASGOW.

LECTURESHIP IN PATHOLOGICAL BIOCHEMISTRY.

The Selection Committee gives notice of a vacancy in the Lectureship in Pathological Biochemistry, tenable at the Royal Hospital for Sick Children, Glasgow. The post carries with it the appointment of Biochemist to the Royal Hospital for Sick Children. Applicants must hold a medical qualification and have clinical experience. Salary (for the combined post) £700.

Information regarding the Lectureship may be obtained on application to the Secretary of the University Court, The University, Glasgow, W.2, to whom applications should be sent not later than September 11th, 1937.

J. S. MUIRHEAD,
July, 1937. *Secretary of University Court.*

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THE WINTER SESSION will Open on Friday, October 1st.

The LONDON HOSPITAL serves the East End of London, and with eight hundred and fifty beds is the largest voluntary Hospital in England. Its Out-patient Department, which deals with a hundred thousand new patients per annum, is extensively used for teaching.

The size of the Hospital necessitates a large number of resident medical officers. Every year seventy resident house physicians and house surgeons and eighty salaried non-resident clinical assistants are appointed from among recently qualified students. The opportunities which these appointments offer for obtaining clinical experience is invaluable.

The MEDICAL COLLEGE is attached to the Hospital and is staffed by Professors of Anatomy, Physiology, Bacteriology, Chemical Pathology, Medicine, Anatomy and Medicine of the University of London.

SPECIAL COURSES in Anatomy and Physiology for the Primary F.R.C.S. and Advanced Courses in Surgery for the Final F.R.C.S. Examinations, and in Medicine for the M.D. and M.R.C.P. Examinations, are held twice a year.

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The HOSPITAL is only 20 minutes from Charing Cross and Baker Street Stations. For those who wish to live in immediate proximity to the Hospital there is accommodation for sixty students in the Students' Hostel.

Further details may be obtained from the Dean, Dr. A. F. CLARK-KENNEDY, M.D., F.R.C.P., Physician to the Hospital and Fellow of Corpus Christi College, Cambridge, who is always pleased to meet students wishing to see the Hospital and College, and to whom application for admission should be made, Turner Street, London, E.1.

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Further particulars from the Secretary, Post-Graduate Medical Association, The University, Glasgow.

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DAVID LEWIS NORTHERN HOSPITAL, LIVERPOOL.

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The Committee invites applications for the undermentioned posts:—

SURGICAL TUTOR AND REGISTRAR.
MEDICAL TUTOR AND REGISTRAR.

The appointments, non-resident, will be for a period of twelve months from October 1st next. Applications, together with copies of testimonials, to be forwarded as soon as possible to the undersigned, from whom further particulars may be obtained.

THORNBURROW GIBSON,
August 9th, 1937. Secretary-Superintendent.

COUNTY BOROUGH OF GATESHEAD

ASSISTANT MEDICAL OFFICER OF HEALTH —FEMALE.

Applications are invited from duly qualified medical women in possession of the Diploma of Public Health or similar qualification for the post of Assistant Medical Officer of Health in the Public Health Department. The person appointed shall work under the general supervision and control of the Medical Officer of Health. The salary payable is at the rate of £500, rising to £700 by annual increments of £25, and the appointment is subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922. Applicants should have had special experience in practical midwifery and diseases of children. The appointment will be terminable by one month's notice from either side.

A list of the duties of the office may be obtained from the Medical Officer of Health, Greensfield House, Mulgrave Terrace, Gateshead, to whom applications, stating age and experience and accompanied by not more than three recent testimonials, should be sent not later than August 30th, 1937, in envelopes endorsed "Assistant Medical Officer."

J. W. PORTER,
Town Clerk.

Town Hall, Gateshead, 8.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

(UNIVERSITY OF LONDON)

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DIPLOMA IN TROPICAL MEDICINE AND HYGIENE (Eng.)

Dates of the Courses, 1937-8.

(Part II cannot be taken before Part I.)

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April 4th—June 24th, 1938.

PART II.
January 17th—March 18th, 1938.
April 19th—June 17th, 1938.

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Two Courses are provided, one lasting a year and the other two weeks. The shorter Course is restricted to persons with adequate industrial experience.

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Course of Study (whole-time, nine months) commencing September 27th. Inclusive fee, 54 gns.

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Course of Study (whole-time, one academic year) commencing in October. Inclusive fee, £47 15s.

EPIDEMIOLOGY AND VITAL STATISTICS

Special three-monthly advanced courses. Inclusive fee, 7 guineas.

For Prospectuses and Synopses of Lectures, etc., apply to the SECRETARY, LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, Keppel Street (Gower Street), London, W.C.1. (Museum 3041.)

UNIVERSITY OF LONDON

EXTERNAL EXAMINERSHIPS, 1938.

The Senate announce the following vacant External Examinerships for the year 1938. There is one vacancy in each subject.

Final and Higher Examinations for Medical Degrees.

FORENSIC MEDICINE.
HYGIENE.

Application Form (or Forms if more than one Examinership is applied for) and particulars of the remuneration and duties can be obtained from the External Registrar.

Candidates must send in their names to the External Registrar, A. Clow Ford, M.B.E., B.A., with any attestation of their qualifications they may think desirable, on or before Wednesday, September 15th, 1937. (Envelopes should be marked "Examinerships.")

The Senate desire that no application of any kind be made to individual members.

If testimonials are submitted, one copy only of each is required. In no case should original testimonials be submitted.

HERBERT L. EASON,
Principal.

University of London,
W.C. 1.

BOROUGH OF STRETFORD

ASSISTANT MEDICAL OFFICER.

Applications are invited from duly qualified medical practitioners for the whole-time appointment of Assistant Medical Officer of Health and Assistant School Medical Officer at a commencing salary of £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum.

Applicants must have had at least three years' experience in the practice of their profession subsequent to obtaining a registrable qualification, and must also hold the Diploma in Public Health.

The appointment is subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922.

The terms and conditions of appointment, together with form of application, may be obtained from the Medical Officer of Health, Town Hall, Stretford, and all applications must be received by the undersigned not later than August 21st, 1937.

C. TREWAVAS,
Town Clerk.

Town Hall,
Talbot Road, Stretford.

BRITISH EMPIRE CANCER CAMPAIGN.

A STUDENTSHIP is offered to a young graduate in medicine of science desiring experience in the experimental study of malignant growths from the biological and particularly from the virus aspect, with a view to undertaking independent investigation later in this field.

Consideration will be given to any special interest or experience submitted by candidates—e.g., previous training in histopathological or immunological methods, or in pathological and physiological chemistry.

The selected candidate will be attached to the Lister Institute of Preventive Medicine. The Studentship will be tenable for three years, but subject to annual renewal on report of satisfactory progress. The value of the Studentship will be £300 for the first, £350 for the second, and £400 for the third year if the selected candidate is medically qualified, and £250, £300 and £350 if the candidate holds a degree in science.

Applications, with full particulars of academic and postgraduate career, together with names of two referees familiar with the candidate's career and work, to be sent to the General Secretary, British Empire Cancer Campaign, 11, Grosvenor Crescent, London, S.W.1, before September 7th.

LIVERPOOL COUNTY BOROUGH LOCAL EDUCATION AUTHORITY

ASSISTANT SCHOOL MEDICAL OFFICERS.

Applications are invited for Two Assistant School Medical Officers in the Department of the Medical Officer to the Local Education Authority, at a salary in each case of £500 per annum, rising by annual increments of £25 to £700 per annum.

(Where a successful candidate holds a similar appointment under another Local Education Authority, and receives a salary in excess of the advertised minimum, a commencing salary of not less than the salary which the candidate is receiving under his (or her) existing appointment (not exceeding the maximum under the Liverpool Scale) may be paid.)

Candidates must be registered medical practitioners, and must have had at least three years' experience. It is desirable that they should have had some special experience in school hygiene and in diseases of children.

The officers appointed will be required to reside within the City, and devote whole-time service to the Local Education Authority under the direction of the Medical Officer to the Local Education Authority, and will not be allowed to undertake any private practice.

The appointments will be subject to the Local Government and Other Officers' Superannuation Act, 1922, and the Standing Orders of the City Council.

Form of application, which may be obtained by forwarding a stamped addressed foolscap envelope, should be returned, together with copies of three recent testimonials, to the undersigned not later than August 24th, 1937, and endorsed "Assistant School Medical Officer."

The canvassing of members of the Education Committee or of the City Council is strictly prohibited, and will be considered a disqualification.

W. H. BAINES,
Municipal Buildings, Town Clerk and Clerk to the
Liverpool, 2. Local Education Authority.
August 13th, 1937.

LIVERPOOL COUNTY BOROUGH LOCAL EDUCATION AUTHORITY.

ASSISTANT SCHOOL DENTAL OFFICER.

Applications are invited for an Assistant School Dental Officer in the Department of the Medical Officer to the Local Education Authority, at a commencing salary of £500 per annum, rising by annual increments of £25 to £600 per annum.

(Where the successful candidate holds a similar appointment under another Local Education Authority, and receives a salary in excess of the advertised minimum, a commencing salary of not less than the salary which the candidate is receiving under his (or her) existing appointment (not exceeding the maximum under the Liverpool Scale) may be paid.)

Candidates must be registered Dental Practitioners, and previous experience of school dental work will be a recommendation.

The officer appointed will be required to reside within the City and devote whole-time service to the Local Education Authority under the direction of the Medical Officer to the Local Education Authority, and will not be allowed to undertake any private practice.

The appointment will be subject to the Local Government and Other Officers' Superannuation Act, 1922, and the Standing Orders of the City Council.

Form of application, which may be obtained by forwarding a stamped addressed foolscap envelope, should be returned, together with copies of three recent testimonials, to the undersigned not later than August 28th, 1937, and endorsed "Assistant School Dental Officer."

The canvassing of members of the Education Committee or the City Council is strictly prohibited, and will be considered a disqualification.

W. H. BAINES,
Municipal Buildings, Town Clerk, and Clerk to the
Liverpool, 2. Local Education Authority.
August 13th, 1937.

ROYAL NAVAL MEDICAL SERVICE.

Vacancies exist for Medical Officers in the Royal Navy, and applications are invited for entry in October, 1937.

Candidates below the age of 28 years are preferred, and they must be registered under the Medical Acts. No examination in professional subjects will be held, but candidates will be required to attend for interview by a Selection Board.

Selected candidates will be entered for Service for a period of three years in the first instance, which may be extended to five years at the discretion of the Admiralty.

At the end of three years' service officers may retire with a gratuity of £400, but those who serve for five years will receive £1,000.

At the end of five years' Short Service permanent commissions will be given to selected officers who wish to make the Naval Medieal Service their permanent career. Officers transferred to the permanent list will receive a gratuity of £1,000 (less Income Tax).

Opportunities are available for officers on the permanent list to specialise, and ample provision is made for Post-Graduate study.

Copies of the regulations for entry and conditions of service, including rates of pay and allowances, may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1, and from the Deans of all Medical Schools.

Applications for entry from intending candidates must be received not later than August 31st, 1937.

ROWLEY REGIS BOROUGH COUNCIL.

DEPUTY MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER (Female).

The Council of the Borough of Rowley Regis invite applications for the above whole-time appointment from duly qualified Registered Medical Practitioners holding a Diploma of Public Health and not over 40 years of age. The officer appointed must have had experience in Maternity and Child Welfare, Pre-natal and School Medical Work, and must possess the necessary qualifications to act as Medical Supervisor of Midwives. The salary will be £600, and will rise, subject to satisfactory service, by annual increments of £25 to £700 per annum, and travelling expenses, in accordance with the Council's scale, will be allowed.

Candidates must apply on the prescribed form, to be obtained from Dr. Frank Asker, Medical Officer of Health, Haden Hill Park Offices, Old Hill, Staffs, by whom applications, accompanied by copies of not more than three recent testimonials, must be received not later than Monday, August 23rd, 1937.

Council Offices, Old Hill, Staffs. C. BUCKLEY, Town Clerk.

STAFFORDSHIRE COUNTY COUNCIL.
WORDSLEY PUBLIC ASSISTANCE INSTITUTION.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from registered medical practitioners (male) for the post of Assistant Medical Officer (Resident) at Wordsley Public Assistance Institution, near Stourbridge Salary £300 per annum, with board, residence and laundry Candidates should be unmarried.

The appointment will be, in the first instance, for a period of six months, but the successful candidate will be eligible for reappointment for a further period of six months.

The Institution is in process of conversion into a Hospital, and facilities will be available for gaining experience in medicine, surgery, midwifery, and diseases of children.

Further details may be obtained on application to the County Medical Officer of Health.

Applications, stating age, qualifications and experience, with copies of testimonials, should be sent to the undersigned not later than Thursday, August 19th, 1937.

County Buildings, Stafford. H. L. UNDERWOOD, Clerk of the County Council.
July 30th, 1937.

CITY OF BIRMINGHAM.

SELLY OAK HOSPITAL (520 Beds).

RESIDENT GYNAECOLOGIST AND OBSTETRICIAN (male).

Applications are invited for the above whole-time appointment from fully qualified registered medical practitioners who have had good experience in Gynaecology and Obstetrics, and who are Fellows of the Royal College of Surgeons (England).

Furnished quarters, rations, laundry and attendance will be provided, or alternatively a cash allowance will be paid if the officer appointed should be non-resident.

Salary will be £700, rising by annual increments of £50, to a maximum of £1,000 per annum, together with the emoluments stated above.

The appointment will be dependent on the candidate passing a medical examination and be subject to the Birmingham Corporation's Superannuation Scheme; and the Birmingham Municipal Officers' Widows' and Orphans' Pensions Scheme (if applicable). The appointment will be terminable by one month's notice on either side. The officer appointed will be required to refund to the Council all fees and allowances received in connexion with his duties.

Further particulars of the appointment may be obtained from the Medical Superintendent of the Hospital.

Applications, stating age, experience and qualifications, accompanied by copies of recent testimonials, and endorsed "Gynaecologist and Obstetrician," should be sent to the Medical Superintendent not later than August 21st, 1937.

The Council House, Birmingham. F. H. C. WILTSHIRE, Town Clerk.

CITY OF BRADFORD.

MALE ASSISTANT CITY PATHOLOGIST required.

Salary £500 per annum, rising to £700 per annum by annual increments of £25.

The salary is subject to a deduction of 5 per cent. under the terms of the Local Government and Other Officers' Superannuation Act, 1922, and the successful candidate will be required to pass a satisfactory medical examination.

Application forms may be received from the Medical Officer of Health, Town Hall, Bradford, and should be delivered to the undersigned not later than August 31st, 1937.

Town Hall, Bradford. N. L. FLEMING, Town Clerk.

CARMARTHENSHIRE COUNTY COUNCIL.

APPOINTMENT OF ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from registered medical practitioners for the post of whole-time Assistant County Medical Officer of Health (male). Applicants must not be over 35 years of age, and must possess the Diploma in Public Health.

Salary £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum, plus £100 per annum for travelling expenses. The post is subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and to the successful candidate passing a medical examination.

The successful candidate, who will be under the direction and control of the County Medical Officer of Health, will be required to reside at Carmarthen and to carry out such duties as may from time to time be imposed upon him by the County Medical Officer. The duties for the present will comprise those in connexion with the School Medical Service, but general public health work will be allocated later on.

The appointment will be held during the pleasure of the Council, and will be determinable by the Officer by three months' notice in writing.

A form of application can be obtained from the undersigned, which must be returned, together with copies of three recent testimonials, not later than August 31st, 1937.

County Offices, Carmarthen. DANIEL JOHNS, Clerk of the County Council.
August 1st, 1937.

CITY OF PLYMOUTH.
City General Hospital (570 Beds).

JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited from duly qualified medical men for the post of Junior Assistant Medical Officer at the City Hospital, Plymouth.

Salary will be at the rate of £250 per annum, with full residential emoluments. All fees received by the officer must be refunded to the Council. The appointment will be for a period of six months in the first instance, and renewable for a further period of six months, and will be terminable by one month's notice on either side.

Form of application may be obtained from the undersigned and should be forwarded, together with copies of not more than three recent testimonials, not later than August 23rd, 1937.

Town Hall, Stonehouse, Plymouth. T. PEIRSON, Medical Officer of Health.

THE LIVERPOOL SANATORIUM.
Delamere Forest, Frodsham, via Warrington.

175 Beds for the treatment of patients suffering from pulmonary tuberculosis.)

JUNIOR ASSISTANT to the Medical Superintendent

Applications are invited from male Medical Practitioners with suitable qualifications for the above named appointment. Candidates must be unmarried and preference will be given to applicants who have held resident medical appointments since qualification and have had practical institutional experience in the treatment of pulmonary tuberculosis.

Salary will be at the rate of £225 per annum, with board, quarters and laundry

The appointment is normally tenable for 12 months, but may be extended.

Particulars of duties and full information, together with forms of application, can be obtained from the Medical Superintendent.

Forms completed, with copies of three recent testimonials, should be returned as early as possible to the Medical Superintendent, the Liverpool Sanatorium, Delamere Forest, Frodsham, via Warrington.

THE LIVERPOOL SANATORIUM

Delamere Forest, Frodsham, via Warrington.

175 Beds for the Treatment of Patients Suffering from Pulmonary Tuberculosis.)

SENIOR ASSISTANT to the Medical Superintendent. Applications are invited from male Medical Practitioners with suitable qualifications for the above-named appointment.

Candidates must be unmarried and preference will be given to applicants who have held resident medical appointments since qualification, and have had practical institutional experience in the treatment of pulmonary tuberculosis

Salary will be at the rate of £350 per annum, with board, quarters and laundry.

The appointment is normally tenable for twelve months, but may be extended.

Particulars of duties and full information, together with forms of application, can be obtained from the Medical Superintendent.

Forms completed, with copies of three recent testimonials, should be returned as early as possible to the MEDICAL SUPERINTENDENT, the Liverpool Sanatorium, Delamere Forest, Frodsham, via Warrington.

ARGYLL AND BUTE DISTRICT MENTAL HOSPITAL, LOCHGILPHEAD.

Applications are invited for the post of RESIDENT ASSISTANT MEDICAL OFFICER *(male)*. Commencing salary £300 to £350 per annum, according to previous experience and special qualifications An additional £50 per annum will be paid if in possession of the D P M Furnished apartments will be provided, with board and laundry.

The appointment will be subject to the provisions of the Asylum Officers' Superannuation Act, 1909.

Applications, stating age and experience, accompanied by seven copies of testimonials, to be addressed to the Clerk of the Joint Board of Management, County Offices, Lochgilphead, not later than August 25th, 1937.

DERBYSHIRE ROYAL INFIRMARY, DERBY
(General Hospital, 362 Beds)
Recognised under F.R.C.S. Regulations.

Applications are invited for the post of:
GYNAECOLOGICAL HOUSE SURGEON AND EMERGENCY ANAESTHETIST

Candidates must be qualified and registered under the Medical Acts

Salary will be £150 per annum, with apartments, board, etc

Applications, with copies of testimonials, to be sent to the undersigned

ARTHUR TAYLOR,
Superintendent and Secretary.
August 7th, 1937

THE ROYAL INFIRMARY, SHEFFIELD
(500 Beds)

The Board of Management invite applications for the post of CASUALTY OFFICER.

The salary attached to the post is £150 per annum, with board and residence. The appointment will be tenable for the residue of the period of six months from July 1st, 1937.

Applications, with copies of testimonials, to be sent to the General Superintendent and Secretary.
August 7th, 1937.

WOKING AND DISTRICT VICTORIA HOSPITAL.

Applications are invited from practitioners in the Woking and District area for the post of HONORARY PHYSICIAN to the above Hospital. Applications, accompanied by copies of testimonials, to be sent to the Hon. Secretary.

ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE.
(783 Beds)

The Committee invite applications for the post of RESIDENT SURGICAL OFFICER *(male)*.

Candidates must be registered Medical Practitioners, duly qualified in Medicine and in Surgery, and must be Fellows of the Royal College of Surgeons of England.

The appointment is for one year and is renewable annually for a period not exceeding three years.

The salary is at the rate of £300 per annum.

Full information can be obtained by application to the undersigned, by whom applications, stating age, qualifications and experience, and accompanied by not more than three recent testimonials, must be received not later than first post on Monday, August 23rd, 1937.

S. DUNSTAN,
House Governor and Secretary
August 5th, 1937

THE PRINCE OF WALES'S HOSPITAL, Greenbank Road, Plymouth
(Formerly South Devon and East Cornwall Hospital) (264 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence and laundry.

Appointment is tenable for six months and is subject to renewal. Duties to commence immediately

The Hospital is officially recognised for the surgical practice required before admission to the Final Fellowship Examination of the Royal College of Surgeons of England

Applicants must be registered under the Medical Acts Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned forthwith.

ARTHUR R. CASH,
General Superintendent and Secretary
August 9th, 1937.

ROYAL VICTORIA HOSPITAL FOLKESTONE (114 Beds)

The Committee of Management invite applications for the post of JUNIOR RESIDENT MEDICAL OFFICER Duties to commence on September 3rd, 1937 Salary £120 per annum, with board apartments and laundry

The appointment is for six months and may be considered as renewable for a further period of six months as Senior Resident Medical Officer if recommended by the Medical Committee

Applications with copies of not more than three recent testimonials, to be sent to the undersigned

F T WILTON,
August 5th, 1937 Secretary-Superintendent

ST. ANNE'S HOME, ALTRINCHAM, CHESHIRE

WANTED, A RESIDENT SURGICAL OFFICER (male) for the above Hospital (50 beds) Must be registered Previous experience not essential Salary £210 per annum, with board, apartments etc This Hospital is the Ear, Nose and Throat Department of the Manchester Hospital for Consumption and Diseases of the Ear, Nose, Throat and Chest, and duties include attendance on two mornings a week at the Out-Patient Dept., Manchester

Applications, with copies of testimonials, to be sent not later than August 23rd, to W. Hunt, Secretary, 45, Hardman Street, Manchester, 3.

THE (KING

RESIDENT SURGICAL OFFICER.

Applications are invited for the above post. Candidates must be qualified and registered and have held a responsible Resident appointment at a teaching hospital. The salary attaching to the post is at the rate of £175 per annum, with board, residence and laundry. The appointment is tenable for one year as from October 1st, 1937.

Candidates should forward their applications, with proof of registration and any credentials which they may desire to offer, to the undersigned on or before September 4th, 1937.

HAROLD F. SHRIMPTON,
July 29th, 1937. House Governor.

EAST SUFFOLK AND IPSWICH HOSPITAL.
(350 Beds. Eight Residents.)

Wanted, September 1st, HOUSE SURGEON (male, British). Salary at the rate of £144 per annum, with board, apartments and laundry. The Hospital is recognised by the Royal College of Surgeons in respect of this post.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, to be sent to the undersigned on or before August 17th.

The Hospital, Ipswich. July 31st, 1937.
ARTHUR GRIFFITHS, Secretary.

CUMBERLAND INFIRMARY, CARLISLE.
(160 Beds)

Resident Medical Staff—Five Qualified Officers

Required on October 1st, 1937, two MALE HOUSE SURGEONS. Six months' appointments, previous experience desirable. Salary in each case at the rate of £190 per annum, board, residence, etc Both posts are recognised by the Royal College of Surgeons of England under the Regulations for the Final Fellowship Examination

Applications, stating age, nationality, qualifications, etc., with copies of not more than four testimonials, must be received by first post on Friday, August 20th, by the undersigned, who will supply further particulars if desired

J. G HOWITT,
July 31st, 1937 Secretary.

GRAVESEND & NORTH KENT HOSPITAL, GRAVESEND, KENT
(120 Beds)

JUNIOR HOUSE SURGEON AND CASUALTY HOUSE SURGEON

The Committee of Management invite applications from fully qualified men for the above posts. Salary at the rate of £120 and £130 respectively, plus board lodging, washing and certain fees as perquisites

The Junior House Surgeon is required to commence duties at once, and the Casualty House Surgeon on August 25th

Applications, with one copy of three recent testimonials, to be sent to the undersigned immediately,

C. I. CHAPMAN,
Secretary.

ROYAL MATERNITY HOSPITAL, BELFAST.

The Committee of Management invites applications for the post of RESIDENT HOUSE SURGEON in charge of Ren Block (Isolation) of the above Hospital for a period of six months from September 1st, 1937 Salary at the rate of £190 per annum

This post offers special facilities for those seeking to qualify for the M C O G Previous hospital experience is essential Candidates must be members of a recognised organisation for medical protection or defence

Applications, with copies of not more than three testimonials must reach the Superintendent, from whom further particulars may be obtained, not later than August 23rd, 1937

J. V. FORREST,
Hon Secretary.
Canvassing forbidden (By Order)

EAR AND THROAT HOSPITAL, BIRMINGHAM

THIRD HOUSE SURGEON wanted (non-resident) Must be qualified and with clinical experience Salary at the rate of £150 per annum, with lunch on six weekdays and an allowance of £50 per annum in lieu of board and lodging.

Appointment for six months to commence as soon as possible.

Candidates are eligible for election to Senior posts. Facilities for training for D L O

Applications and testimonials to be forwarded to the undersigned immediately

W. H LOMAS,
Secretary.

PRESTON AND COUNTY OF LANCASTER ROYAL INFIRMARY.

HOUSE SURGEON, EYE, EAR, NOSE AND THROAT DEPARTMENT.

Applications are invited for the above position. Hospital Resident Staff—seven (Male or female.) Six months' appointment. Salary £150, with board, residence and washing.

Applications, stating age, qualifications and experience, together with copies of testimonials, to be forwarded as soon as possible to Mr. John Gibson, Superintendent and Secretary, Royal Infirmary, Preston.

MANCHESTER EAR HOSPITAL, Grosvenor Square, All Saints'.

The Board invite applications for the post of RESIDENT HOUSE SURGEON. (31 beds.) Salary £120 per annum. Candidates must be duly qualified and registered. Applications, with copies of four recent testimonials, to be forwarded to Mr. Reginald S. Milford, Hon. Sec., Manchester Ear Hospital, c/o Mr. W. J. Ellam, 17, Brazennose Street, Manchester, 2.

MERCERS HOSPITAL, DUBLIN.

A vacancy exists for an HONORARY VISITING SURGEON. The Governors invite applications for the post, which should reach the undersigned not later than August 31st, 1937.

By Order of the Board,
HENRY D. JURY, Registrar.

THE YORKSHIRE CHILDREN'S ORTHOPAEDIC HOSPITAL, KIRBYMOORSIDE, YORK. (124 Beds.)

Applications are invited for the position of HOUSE SURGEON (female). Salary £200 per annum, with board, residence and laundry. Previous orthopaedic experience is not necessary, but preference will be given to candidates who have held resident hospital appointments, and who are competent anaesthetists.

The appointment is for one year, and renewable, and may be terminated by three months' notice.

Applications, with copies of not more than three recent testimonials, should be forwarded to me at the above address, to arrive not later than first post on Friday, August 20th, 1937.

P. HANKS, Secretary.

THE QUEEN'S HOSPITAL FOR CHILDREN, HACKNEY ROAD, LONDON, E.2.

RESIDENT MEDICAL OFFICER required on October 1st, 1937.

The appointment is made for six months, and may be extended for further periods of six months, but cannot be held for more than two years.

The Resident Medical Staff consists of the Resident Medical Officer as above, three Casualty Officers, two House Physicians, and one House Surgeon.

Salary £200 per annum, with board, residence and laundry. Candidates must have held a responsible resident appointment at a recognised hospital.

Forms of application may be obtained from the undersigned, and must be completed and returned on or before September 6th.

CHARLES H. BESSELL, August 1st, 1937. Secretary.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, Chelsea, S.W.3. (138 Beds.)

The Committee of Management invite applications for the post of LOCUM CASUALTY OFFICER for a period of two months, commencing September 1st next.

Hours 9 a.m. to 1.30 p.m. daily (including Saturday). Salary at the rate of £200 per annum, with lunch. There is a possibility of reappointment to a resident post afterwards.

Candidates are expected to attend a Sub-Committee for an interview and should send their applications and copies of three testimonials, to the Secretary, not later than first post on Friday, August 20th.

D. ST. JOHN BAMFORD, Secretary.

THE ROYAL CANCER HOSPITAL (FREE) (Incorporated under Royal Charter), Fulham Road, London, S.W.3

Applications are invited for the two posts of ASSISTANT RADIOLOGIST at this Hospital.

Applicants must be registered Medical Practitioners, who hold a Diploma in Radiology.

The appointments will be for one year, commencing on October 1st, 1937, at a salary at the rate of £350 per annum each.

Applications, to be made on a form which will be supplied by the Secretary, together with three (copies only) recent testimonials, should be sent to the Secretary on or before Wednesday, September 8th, 1937.

CLEMENT COBBOLD, Secretary.

GENERAL LYING-IN HOSPITAL, YORK ROAD, LAMBETH, S.E.1.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER and ANAESTHETIST. Salary at the rate of £100 per annum, with board, residence and laundry. Appointment for three months, commencing October 1st. The successful candidate will, subject to satisfactory service, be required to succeed to the Senior Medical Officer's post for a further three months.

Applications, stating age and qualification, with copies of three recent testimonials, to be sent to the Secretary not later than Friday, August 27th.

LONGTON HOSPITAL, STOKE-ON-TRENT. (50 Beds.)

HOUSE SURGEON (male) required. Salary £150, rising to £200 after six months, with board, residence and laundry, plus certain fees. Applications, with copies of recent testimonials, and stating nationality, to be sent immediately to the Chairman of Directors, Longton Hospital, Stoke-on-Trent.

PENDYFFRYN HALL SANATORIUM, PENMAENMAWR.

Wanted, ASSISTANT PHYSICIAN (male, unmarried), to commence duty in October. Salary at the rate of £250, with board, residence and laundry. Experience in pneumothorax work, etc., essential.

Apply to MEDICAL SUPERINTENDENT, stating age and experience, and enclosing testimonials.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, MARYLEBONE ROAD, N.W.1

Applications are invited from registered Medical Practitioners for the following appointments:—

	Salary.
ASSISTANT RESIDENT MEDICAL OFFICER (male)	£50 per annum
RESIDENT ANAESTHETIST & DISTRICT RESIDENT MEDICAL OFFICER, 6 months	£90 per annum
RESIDENT ANAESTHETIST, 3 months	£100 per annum

with board, residence and laundry allowance (4s. weekly).

Appointments to commence on October 1st, 1937.

The Assistant Resident Medical Officer is appointed for three months, and on completion will be expected to proceed to the post of Senior Resident Medical Officer (for three months) on the recommendation of the Medical Staff (salary £100 per annum). Obstetric experience desirable.

Applications, stating age, previous experience, with copies of three testimonials, should be sent to the Secretary by September 3rd.

H. B. STOKES, Secretary-Superintendent.

KING EDWARD MEMORIAL HOSPITAL, EALING. (131 Beds.)

Applications are invited for the posts of:—

HOUSE SURGEON (male) to act in the Eye, Gynaecological and Ear, Nose and Throat Departments. Six months' appointment with possibility of re-election for a further period. Salary £150 per annum, with usual residential emoluments.

CASUALTY HOUSE SURGEON (male) (with which is combined the duty of deputising for the House Physician). Six months' appointment with possibility of re-election for a further period. Salary £150 per annum, with usual residential emoluments.

Applications, stating age, experience and qualifications and accompanied by copies of two recent testimonials, to be sent to the undersigned immediately.

R. A. MICKELWRIGHT, House Governor.

THE PRINCE OF WALES'S GENERAL HOSPITAL, London, N.15.

The following Resident posts will be vacant on September 15th next:—

(a) ONE JUNIOR HOUSE PHYSICIAN.
(b) TWO JUNIOR HOUSE SURGEONS.

Salary at the rate of £90 per annum board, residence and laundry.

Appointments held for six months, but holders are eligible for a further term as Senior.

Candidates (male and unmarried) must be fully qualified and registered, and applications (on the prescribed form), together with copies of three recent testimonials, should be sent to the undersigned on or before Wednesday, September 1st, 1937.

J. C. BURDETT, Director and House Governor.

August 5th, 1937.

ISLINGTON DISPENSARY, Founded 1821, 303, Upper Street, N.1.

Applications are invited for the post of JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER (lady, unmarried). Salary £200 per annum, with furnished apartments. Applicants must be registered Medical Practitioners.

Applications not later than September 1st, on printed form to be obtained (by postcard) from the Secretary at the Dispensary.

THE MANOR HOUSE HOSPITAL, Golders Green, London, N.W.11.

Applications are invited for the post of JUNIOR MEDICAL OFFICER. Salary at the rate of £200 per annum, with board-residence. Candidates, male and unmarried, must be fully qualified and registered. Applications, stating full particulars and accompanied by copies of not more than three recent testimonials, should be addressed to reach the undersigned as soon as possible.

JAMES W. LINKHORN, F.C.C.S., Secretary.

EAST HAM MEMORIAL HOSPITAL, Shrewsbury Road, E.7. (100 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN (male). The appointment is for six months, commencing September 1st. Salary at the rate of £150 per annum, with board, residence and laundry.

Applications, stating age, nationality, experience and full particulars, together with copies of three testimonials, should reach the undersigned by August 19th.

REGINALD PERRY, Secretary.

WEST LONDON HOSPITAL, HAMMERSMITH ROAD, W.6. (239 Beds.)

Required first week in September, one RESIDENT ANAESTHETIST (male). The appointment is tenable until March 31st, 1938, subject to one month's notice on either side. Salary at the rate of £100 a year, with board, lodgings and laundry allowance.

Candidates must be registered under the Medical Act. Applications (which must be made on printed forms, obtained from me) must reach me not later than first post on Friday, August 27th. Selected candidates will be required to call upon such members of the Medical Staff as directed; to be in attendance at the Medical Council Meeting on Friday, September 3rd, at 4.30 p.m., and the House Committee Meeting at 5 p.m. the same day, when the appointment will be made.

H. A. MADGE, Secretary.

THE ROYAL EYE HOSPITAL, St. George's Circus, Southwark, S.E.1

SENIOR HOUSE SURGEON and two ASSISTANT HOUSE SURGEONS required at the above Hospital. The appointment is, in the first instance, for a period of six months, with board and residence, as from 1st October.

Salaries.—Senior House Surgeon at the rate of £150 per annum.

Assistant House Surgeons at £100 per annum.

Candidates must be registered Practitioners.

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than Wednesday, September 1st.

F. E. D'ALTON, Secretary.

MILLER GENERAL HOSPITAL, GREENWICH ROAD, S.E.10

Applications are invited for the following posts:

HOUSE PHYSICIAN (male), unmarried, salary £100 per annum.

HOUSE SURGEON (male), unmarried; salary £100 per annum.

CASUALTY OFFICER (male), part time; afternoon session. Salary £150 per annum, non-resident.

Fuller particulars on application. The appointments are for six months from October 1st, 1937. There are six Resident Officers.

Application forms can be obtained from the Secretary, and must be returned not later than August 23rd, 1937.

July 30th, 1937.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd Street, St. Pancras, W.C.1

Applications are invited for the post of ASSISTANT SURGEON. Candidates must be Fellows of the Royal College of Surgeons (England) or hold the degree of M.S. (London) in Ophthalmology, and must have held a post as Clinical Assistant for two years at least at a recognized Ophthalmic Hospital.

Applications, with copies of not more than four testimonials must reach the Secretary of the Hospital not later than August 31st.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd Street, St. Pancras, W.C.1.

There is a vacancy for a PATHOLOGIST. Candidates must be duly registered medical practitioners and must be willing to attend the hospital on three afternoons each week. The appointment is for one year (subject to re-election) and carries with it an Honorarium of £105 per annum.

Applications, with copies of not more than four testimonials must reach the Secretary of the Hospital not later than August 31st.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd Street, St. Pancras, W.C.1.

Applications are invited from registered medical practitioners for the posts of SENIOR and JUNIOR HOUSE SURGEON, vacant on September 30th. The Junior House Surgeon is a candidate for the Senior post. Salary £120 and £160 per annum respectively, with board and residence.

Applications, with copies of three testimonials, should reach the Secretary on or before August 31st.

WEST HERTS HOSPITAL, HEMEL HEMPSTEAD. (114 Beds. 24 miles from Euston.)

SENIOR RESIDENT MEDICAL OFFICER required, to commence duties about August 1st. Male unmarried preferred. Salary £150, with rooms, board and laundry.

Applications, stating essential particulars and enclosing copies of three recent testimonials, to be sent at once to:

ROBT. L. BUTTERFIELD, Clerk to the Hospital.

APPOINTMENTS—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C. 1 (in the case of Scottish appointments, with the Scottish Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District.	Town or District.	Town or District
CONTRACT PRACTICE	CONTRACT PRACTICE—*(contd.)*	CONTRACT PRACTICE—*(contd.)*
ABERTYSSWG MEDICAL AID SOCIETY *(Medical Officer.)*	LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL. *(Medical Officer.)*	MID-RHONDDA MEDICAL AID SOCIETY. *(Assistant Medical Officer.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
GILFACH GOCH, GLAMORGAN *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C. 1.

Town or District.	Hon. Sec. of Division or Branch	*Town or District*	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch.
NEW SOUTH WALES *(All Friendly Society Appointments.)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney, N.S.W.	**VICTORIA** *(All Institute or Medical Dispensaries.)*	The Honorary Secretary, Victorian Branch, British Medical Association, Medical Society Hall, Albert St., East Melbourne, Victoria.	**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec. Western Australian Branch, British Medical Association "Shell House," 205, St. George's Terrace, Perth, Western Australia.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec. Queensland Branch, British Medical Association, B.M.A. House 225, Wickham Terrace, Brisbane, B.17.				

August 11, 1937 By Order of the Council. G. C. ANDERSON, *Secretary.*

STOCKTON AND THORNABY HOSPITAL, Stockton-on-Tees.
(140 Beds. Three Residents.)

HOUSE PHYSICIAN (male), alternating with Casualty Officer, required for a period of at least six months, to commence September 1st, 1937. Salary £150 per annum, with board, residence and laundry. Candidates must be duly qualified and unmarried.

Applications, stating age, nationality and experience, together with copies of three recent testimonials, to be sent to the undersigned

J. WILKINSON,
Secretary.

THE HOSPITAL FOR SICK CHILDREN, NEWCASTLE-UPON-TYNE.

The Board of Management has declared a vacancy for an ASSISTANT HONORARY SURGEON TO THE THROAT, NOSE AND EAR DEPARTMENT. Applications, stating age and qualifications, are invited for this appointment and should be sent to the Secretary, Mr. Neil Brodie, 18, City Road, Newcastle, 1, accompanied with copies of three recent testimonials.

August 9th, 1937.

VICTORIA HOSPITAL FOR SICK CHILDREN, PARK STREET, HULL.

The Board of Management of the above Hospital requires a RESIDENT HOUSE PHYSICIAN (lady), also JUNIOR HOUSE SURGEON (lady). Salaries £120, with board, residence and laundry.

Applications, with copies of recent testimonials, stating age and qualifications and when at liberty, to be sent to the Secretary not later than August 18th.

July 30th, 1937.

THE RADCLIFFE INFIRMARY, OXFORD.

Applications are invited from qualified men or women for the post of RESIDENT MEDICAL OFFICER to that section of the Hospital consisting of 52 beds and dealing with the diagnosis and treatment of pulmonary tuberculosis, known as The Osler Pavilion, Headington, Oxford, as from October 1st, 1937.

Appointment will be for six months in the first instance. Salary at the rate of £120 per annum, with board, etc.

Applications, with copies of testimonials, must be forwarded to the
Infirmary not later than

A.

August 10th, 1937. Administrator.

CHESHIRE JOINT SANATORIUM.
(240 Beds.)

RESIDENT HOUSE PHYSICIAN.

Applications are invited for the above post of Resident House Physician (male).

The salary will be at the rate of £250 per annum, with board, residence, and laundry. Appointment for a period of twelve months.

Forms of application may be obtained from the Medical Superintendent, Cheshire Joint Sanatorium, Market Drayton, Salop.

ROTHERHAM HOSPITAL

HOUSE SURGEON required for Ophthalmic and Ear, Nose and Throat Departments. Previous experience not essential. Salary £150 per annum, with board and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. Roberts, 8, Moorgate Street, Rotherham.

ROYAL SALOP INFIRMARY, SHREWSBURY.
(150 Beds.)

APPOINTMENT OF RESIDENT SURGICAL OFFICER

Applications are invited from fully-qualified unmarried gentlemen for the appointment of Resident Surgical Officer, vacant September 15th next.

The appointment is for a period of twelve months, at a salary of £250 per annum, with board, residence, etc. The Resident Surgical Officer is senior Resident Officer of the Hospital.

House Staff comprises Resident House Physician and two Resident House Surgeons.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three recent testimonials, to be sent to the undersigned not later than August 28th.

Board Room. J. W. NOBLE,
August 10th, 1937. Secretary-Superintendent.

ROYAL SALOP INFIRMARY, SHREWSBURY.
(150 Beds.)

Applications are invited from fully-qualified unmarried gentlemen for the appointment of RESIDENT HOUSE SURGEON, vacant immediately.

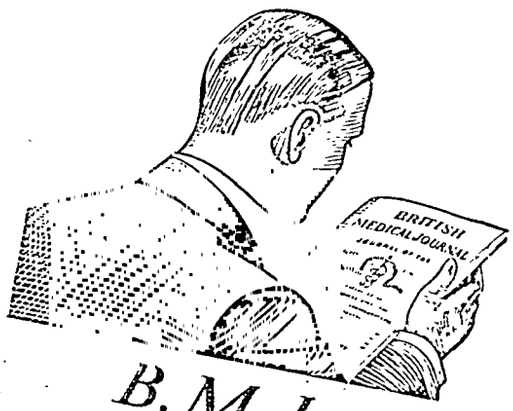
The appointment is for six months in the first instance, subject to reappointment for a further period of six months if desired.

Salary at the rate of £160 per annum, with board, residence, etc.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, to be sent to the undersigned immediately.

Board Room. J. W. NOBLE,
August 8th, 1937. Secretary-Superintendent.

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ASSISTANCIES

WANTED ABOUT OCTOBER. INDOOR male ASSISTANT for country Practice in Shropshire Salary £300. Car provided. Work light.—Address, No 5935. B.M.A House, Tavistock Square, W.C.1.

WANTED, ASSISTANT (MALE), WITH hospital experience, for mixed practice on south coast, near Brighton Age under 35. Salary according to experience. Car allowance.—Apply, with full particulars, to Address, No. 5926, B.M.A. House, Tavistock Square, W.C.1.

WANTED, ASSISTANT, SINGLE (MALE), for general Practice in large northern city £475 per annum Own car May be prospects later if desired —Apply, stating full particulars, age, experience, etc., to Address, No. 5933, B.M.A House, Tavistock Square, W.C.1.

WANTED.—ASSISTANT, SINGLE, SCOTCH, outskirts of Manchester Salary £300, all found Car allowance £50 State full particulars —Address, No 5910, B.M.A House, Tavistock Square, W.C.1

WANTED BEGINNING SEPTEMBER, MALE INDOOR ASSISTANT (British) for Practice near Manchester, Cheshire side £300 per annum, plus £50 car allowance. Good prospects Work not heavy.—Address, No. 5907, B.M.A House, Tavistock Square, W.C.1.

WANTED, EARLY OCTOBER, OUTDOOR male ASSISTANT in good mixed Practice in East Lancashire. Some experience desirable Commencing salary £400 (four hundred pounds) per annum, plus £50 (fifty pounds) car expenses Only Scotsman or Englishman of Protestant faith need apply —Address, No 5915, B.M.A. House, Tavistock Square, W.C.1

WANTED, END OF SEPTEMBER, MALE ASSISTANT, outdoor, for good mixed practice in town of 43,000. £400 per annum and saloon car for practice use.—Send full particulars to Address, No. 5721, B.M.A. House, Tavistock Square, W.C.1.

WANTED FOR ABOUT OCT. 1st, ASSISTANT for large and very mixed Practice in S. Yorks town. Gentleman, English or Scottish, indoor, £300-£350 p.a., hospital, dispenser, car. Opportunity for gaining excellent experience.—Address, No 5905, B.M.A. House, Tavistock Square, W.C.1.

WANTED, FOR SEPT. 1st, AN OUTDOOR, male, unmarried ASSISTANT for Industrial Practice near Newcastle-on-Tyne. Salary £400-£425, according to experience. Furnished house, coal, light, and attendance in addition.—Address, No. 5719, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY.—INDOOR AND outdoor ASSISTANTS for town and country Practices, with and without view to partnership. Good salaries offered. State full particulars—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2.

WANTED IMMEDIATELY, MALE ASSISTANT, London Practice; £350, all found; partnership later if satisfactory; Irish or English.—Address, No. 5940, B.M.A. House, Tavistock Square, W.C.1.

WANTED, — INDOOR, SINGLE, MALE ASSISTANT, mixed practice, large town West of Eng. (2 partners), with view to partnership later. Salary £300, own car £350.—Address, No. 5603, B.M.A. House, Tavistock Square, W.C.1.

WANTED, — MALE ASSISTANT, WITH view to Partnership. Mixed practice, North Midlands Salary £400, car allowance £50, Unfurnished house with surgery furnished. Hospital and general practice experience preferred.—Address, No. 5718, B.M.A. House, Tavistock Square W.C.1.

WANTED, MALE ASSISTANT, UNmarried, for panel Practice now, London, S.E. £300 a year and all found; work very light.—Address, No. 5913, B.M.A. House, Tavistock Square, W.C.1.

WANTED, MARRIED ASSISTANT, END of September, for S. Wales Colliery Practice. Salary £450 p.a., with free house and £50 car expenses. Must be keen, energetic and reliable.—Address No. 5903, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OCT. 1st, KEEN, YOUNG, "G.P.-minded" ASSISTANT. Better-class mixed suburban Practice Live at branch surgery. Previous experience essential. Salary £350-£500.—Address, No. 5917, B.M.A House, Tavistock Square, W.C.1.

WANTED, OCTOBER 1st.—MALE ASSISTANT with view to partnership. Scot. Edin Graduate. For mixed practice, country town, Midlands Salary £400. Car allowance £50. Unfurnished house, with surgery furnished. Hospital and G.P. experience preferred.—Address, No. 5634, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT, GOOD-class country Practice, Midlands. Cottage Hosp. Must own car. £400 to £450, according to experience plus £50 car allowance. Refs.; photo.—Address, No 5918, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT, pleasant country district, N. Wales. Small town with Hospital. Work very light. Car provided. Salary £400.—Address, No. 5311, B.M.A. House, Tavistock Square, W.C.1.

WANTED, SEPTEMBER 1st, MALE ASSISTANT (single) for Private and Panel Practice. South Coast town Commencing salary £300 p.a. (all found), plus £50 car allowance.—Address, No. 5711, B.M.A House, Tavistock Square, W.C.1.

WANTED. — SINGLE, MALE, ASSISTANT for Glamorgan Colliery Practice. Out-door. Cottage Hospital with scope for surgery. Salary £400 p.a., with rooms and attendance—Address, No. 5626, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANTSHIP, WITH UNFURNISHED house, required by M.B., Ch.B., ex. H.S. and H.P.; married; own car; excellent refs.; free September 20th. 6 yrs' experience G.P.—Address, No. 5908, B.M.A. House, Tavistock Square, W.C.1

M.B., Ch.B., WISHES SITUATION ASSISTANT. Owing to slight disability will be prepared to accept reduced salary.—Address, No. 5930, B.M.A. House, Tavistock Square, W.C.1.

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LANCS. — TOWN. OLD-ESTAB. Average £1,400 p.a. Select panel of 950. Scope for Surgery and X-Ray. Premium 1½ years' purchase. Nice house on rental, £70 p.a.—3.

LONDON, S.W.—AVERAGE £1,600 p.a. Panel 700. Old-estd. Premium £2,000. Good house in main road position.—4.

LONDON, N., NEAR CITY.—LOCK-up £450 p.a. Panel 500. Good premises, suited at profit rental. Premium £1,000, *incl. furniture,* drugs, etc., or offer.—5.

LONDON, S.E.—RESIDL. AVERAGE £700 p.a. Panel 600. Old-estd. Fees 3/6 to 10/6. Premium 1½ years' purchase. Corner house, 5 bed., etc., £1,200, *or offer.*—6.

KENT.—WITHIN EASY REACH OF town. Nucleus £4/500, with ample scope. Estd. only 20 months. Panel now 220. Premium only £500, incl. equipment. Suitable house to rent.—7.

LONDON, N.W.—OVER £3,000 P.A. with large panel. Industrial practice. ¼ share now, increasing to ½ shortly, or sell ½ now. *Premium* about 2½ years' purchase. Small house.—8.

LONDON, S.E.—RESIDL. SUBURB. *Average over £1,000 p.a.* Good class non-panel, but scope. Double-fronted freehold house (non-basement). *Price, house and practice, £2,500.*—9.

SURREY TOWN.—WITHIN 20 MILES. Nearly £1,300 p.a., increasing. Panel 260. Good house, 4 bed. and *garden. Rent £104. Premium* £2,000.—10.

WOMAN'S PRACTICE. — COUNTRY town, S. of England. £4/£500 p.a. Small panel. Fees 3/6 to 7/6. Good house to rent.—11.

LONDON, S.E.—OLD-ESTD. AVERage £1,300. Panel 850. House, 2 recep., 4 bed., Surgery, etc., with sep. ent. Rent £100 p.a., or sell. Goodwill 1½ years' purchase.—12.

LONDON, W.C.—LOCK-UP. ABOUT £1,000 p.a. Panel over 1,000. *Accommodation* available on rental. Premium £2,000.—13.

LONDON, S.E.—CASH PRACTICE. £500 p.a. Panel 500, increasing. Ample scope. House, 3/4 bed., optional.—14.

LONDON, N.W.—NOW OVER £3,000, increasing. Mostly cash. Panel over 3,200. Premium £6,000. Two houses to rent at £80 and £100.—15.

SEASONAL SPA PRACTICE.—ABOUT £1,400 p.a. Fees £1 1/- up. Premium 1½ years' purchase. Beautiful house in advantageous position.—16.

PROSPEROUS N.E. COAST TOWN.—£2,000 p.a. Old-established. Panel 2,200. Appt. £250. ¼ share for disposal. 2 years' purchase.—17.

SOUTH COAST, WITHIN 100 MILES.—Average £1,200. Medium panel. Good fees. Good family house (5 bed.) and good garden for sale.—18.

HERTS. — PROMISING NUCLEUS, about £400 p.a. Panel 525. Premium £500. Good house, garden and garage. Freehold £1,500.—19.

EAST YORKS.—CLEAN TOWN.—SHARE worth about £1,200 after preliminary Assistancy. Middle and working-class and panel of 2,600. Premium 2 years' purchase. Choice of houses.—20.

S. WALES.—£1,400 P.A., INCREASing 9% per cent. panel and *contract. Very little* midwifery. Good house, 5 bed., 2 recep., surgery, etc. Rent only £40 p.a. *Premium £2,000, including* drugs, fittings, etc.—21.

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Practices and Partnerships for Disposal.

1 ISLE OF WIGHT.—Non-dispensing PRACTICE in a popular resort. Cash receipts averaged last two years £2,350 p.a. Panel 300. Beautifully situated house (8 bedrooms) to rent. Premium one and a half years' purchase.

2 S.E. COAST.—PARTNERSHIP in old-established Practice, averaging £4,100 p.a. in growing resort. Panel 3,000. Modern corner house (3 bedrooms, etc.) for sale or to rent. Premium for one-fourth share, two years' purchase.

3 S. OF ENGLAND.—Non-panel PRACTICE in an inland watering place. Cash receipts from private work average £830 p.a. and over £500 from appointments which might be transferred. House or flat could be obtained.

4 ISLE OF WIGHT.—Well-established PRACTICE averaging nearly £1,200 p.a. in seaside resort. Panel over 725. Good corner house (5 bedrooms) with central heating. Garage and small garden for sale. Good scope. Premium two years' purchase.

5 SUFFOLK.—Old-established country PRACTICE about £1,100 p.a. Panel 832, returning for 1936, £582. Good house (3 bedrooms), garden and garage. Rent £40 p.a. Premium £2,000 or near offer.

6 LONDON, E.—Old-established PRACTICE of £1,793 p.a. in populous district. Panel 2,600. House (6 bedrooms, etc.), to rent. Premium two years' purchase.

7 S. OF ENGLAND.—PHYSIO-THERAPY PRACTICE of £1,000 p.a. in an important town. Fees, 10/6 to £1 1s. Premium £1,250 (including certain equipment).

8 S.E. COAST.—PARTNERSHIP in old-established Practice of £4,100 p.a. in growing resort. Panel 3,000. Corner house (3 bedrooms, etc.), to rent. Premium for one-fourth share two years' purchase.

9 LONDON, N.W.—PARTNERSHIP in increasing Practice in new developing area. Cash receipts year ended 31st March, 1937, £2,312. Panel 2,440. Good house, with central heating (5 bedrooms, etc.), to rent or for sale. Premium for half-share £2,450. or possibly the whole would be sold.

10 N. WALES WATERING PLACE.—PARTNERSHIP in old-established Practice of £6,000 p.a. Panel 2,600. Nice flat with garage. Welsh must be spoken. Premium for one-fifth share one and a-half years' purchase.

11 E. ANGLIA.—PARTNERSHIP in an old-established Practice in country district. Cash receipts year ended 30th June, 1937, £3,321. Panel 1,400. House to rent at £30 p.a. Premium for one-third share £2,000.

12 E. ANGLIA.—PARTNERSHIP in an old-established Practice of £2,800/£2,900 p.a. in prosperous country district. Panel 1,530. Double-fronted house (6 bedrooms), garage and garden. Freehold for sale or to rent. Premium for one-third share one and three-quarter years' purchase.

13 S. MIDLANDS.—PARTNERSHIP in old-established Practice, averaging £1,369 p.a., in good town. Panel about 900. Excellent large self-contained flat (4 bedrooms, etc.), to rent. Premium for one-half share £1,400, with succession to whole practice in three years.

14 LONDON, W.C.—Old-established mixed PRACTICE, £2,360 p.a., in desirable part. Panel over 3,000. No midwifery. Well-situated residence to rent on lease. Great scope. Premium, to include lease, goodwill, some furniture and fittings, etc., £6,000 or near offer.

15 LONDON, E.—Middle-class PRACTICE of over £2,400 p.a., in outlying district. Panel 2,870. House in good repair. Garage and garden. Freehold for sale. Premium two and one-quarter years.

16 W. OF ENGLAND.—PARTNERSHIP in old-established Practice of £6,600 p.a. in a beautiful country district. Panel 4,500 and appointments worth £1,325 p.a. Centrally situated house (5 bedrooms), for sale. Premium for one-fifth share, £2,750.

17 MIDDLESEX.—PARTNERSHIP (with preliminary Assistantship) in a steadily increasing Practice in a very good residential district on the Thames. Cash receipts, 1935, £4,844; 1936, £5,465; 1937, £6,264. Panel 2,700 and appointments £727 p.a. Premium for one-fifth share two and a half years' purchase.

18 N.W. ENGLAND.—ASSISTANT wanted at once (with view to partnership, after short trial period, and early succession). Mixed Practice of about £650 and capable of much expansion, in popular holiday resort in attractive country. Panel over 300. Good opening for surgeon. House available, including office, garden and garage. Salary 8 gns. weekly with keep and car expenses.

19 N.E. COAST.—Old-established and easily worked middle and better working-class PRACTICE, averaging over £1,150 p.a., in seaport town. No panel—a few contracting out-patients. Visits 5/- to 15/-. Rent of consulting rooms, £26 p.a. A suitable residence could be obtained. Good scope, much building going on. Premium £1,200 (contents of consulting rooms, including X-ray plant and electrical apparatus, about £130).

20 LONDON, S.E.—PRACTICE of about £500 p.a. Panel 533. House with surgery accommodation to rent. Premium one year's purchase, or offer.

21 S.W. OF ENGLAND.—PARTNERSHIP (with early succession) in good-class Practice, averaging £1,578 p.a., in beautifully situated watering place. No panel or midwifery. Patients are of high class, and include county families. One-half share at first. Premium two and a quarter years' purchase. Cottage hospital. Applicant should be graduate of Oxford, Cambridge or London.

22 W. OF ENGLAND.—Country PRACTICE doing about £1,400 p.a., in picturesquely situated village. Panel over 600. Good stone-built slate roof house (4 bedrooms, dressing-room, etc.), garage and charming garden, about ¾ acre, for sale. Hunting, fishing, shooting. Premium £2,800.

23 LONDON, W.2.—Old-established PRACTICE in residential district. Receipts last year, £1,440. Panel 1,000, about. Good house to rent at £130 p.a. Premium two years' purchase.

24 MID-DEVON.—Increasing Country PRACTICE, about £800 a year, in delightful part. Appointments and panel return over £350 p.a. Excellent house (6 bedrooms, dressing-room, etc.), in 1¼ acres of grounds. Separate surgery accommodation. Electric light and main water. Garage and stabling. Freehold for sale. Scope. Premium £1,200.

25 DEATH VACANCY.—SOUTH WALES.—Panel and Contract PRACTICE returning about £1,550 p.a. Large compact residence (6 bedrooms), in excellent condition, with two garages and pleasure and kitchen gardens, to rent.

26 COUNTY TOWN, within 65 miles of London.—PARTNERSHIP in Practice averaging between £2,300 and £2,400 p.a. Panel about 2,000. House containing 6 bedrooms, for sale or rent. One-third share (after preliminary Assistantship) at one and three-quarter years' purchase, or near offer.

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Practices and Partnerships for Disposal (continued).

27 LONDON, E.15.—Old-established PRACTICE averaging £1,670 p.a., in populous suburban district. Panel 1,990. Small house in excellent repair. Rent £50 p.a. Good scope. Premium two and a quarter years' purchase.

28 S. MIDLANDS.—PARTNERSHIP in first-rate country town Practice, about £6,000, within 40 miles of London. Panel 3,500. Suitable house obtainable. Premium one-sixth share two years' purchase. Preliminary Assistantship entertained.

29 NORFOLK.—PARTNERSHIP in steadily increasing Practice, about £2,300, in delightfully situated country town. Panel about 1,850. Good society and sport. One-third share at first at two years' purchase.

30 S. MIDLANDS.—PARTNERSHIP (short preliminary Assistantship) in Practice, over £5,000 p.a., in first-rate town. Panel nearly 5,000. House with 4 bedrooms, garage and garden, to rent. One-fifth share at first at two years' purchase.

31 LONDON, N.5.—Middle-class PRACTICE averaging £866 p.a., including appointment worth £135 and a panel of 676. Nice corner house (5-6 bedrooms), garden and garage, to rent. Premium £1,250.

32 LONDON, S.E.—Old-established and increasing PRACTICE of £2,500 p.a. in suburban district. Panel 2,000. Detached double-fronted house (5 bedrooms, etc.), garage and garden. Freehold for sale. Premium two years' purchase.

33 HOME COUNTIES.—Old-established PRACTICE of over £1,000 p.a. in beautiful country district on Bucks and Northants borders. Panel 536. Attractive house (6 bedrooms, etc.), Freehold for sale, or rent. Premium two years' purchase

34 S. OF ENGLAND.—PRACTICE of about £300 p.a. carried on by a medical woman in a cathedral town. Panel 100. House (2 bedrooms, etc.), to rent. Premium £500.

35 AUSTRALIA.—Old-established PRACTICE of £1,400 p.a., in agricultural township. Good house (3 bedrooms, etc.), for sale. Premium £1,600 and £250 for X-ray plant.

36 S.W. OF ENGLAND.—PARTNERSHIP in old-established Practice, averaging over £3,750 p.a., in attractive country town. Panel 2,300. Visits 3/6 to £1 10s. Choice of two houses (one for sale, the other to rent). Hospital and prospect of appointment. Premium one-third or two-fifths share at two years' purchase.

37 MIDLANDS.—Old-established PRACTICE in beautiful country district. Cash Receipts last year £1,280, including appointments worth about £60, and a panel between 650 and 700. Visits 2/6 to £1 1s. without medicine. Nicely situated house (4 bedrooms, dressing-room, etc.), with nice garden and two garages. Rent about £50 p.a. Premium two years' purchase.

38 N. WALES BORDER.—PARTNERSHIP (with early succession) in old-established County Practice, about £2,500 p.a., in important town. No panel. Surgery premises could be purchased or rented. The private residence is available if required. A share up to one-half would be sold at first with early succession. Premium two years' purchase.

39 DEATH VACANCY.—ESSEX SUBURB.—Receipts average nearly £850 p.a. Panel 423. Semi-detached house (4 bedrooms). Price £800 freehold Reasonable offer accepted.

40 LONDON, S.W.1.—SPECIAL PRACTICE for catarrhal conditions, nasal catarrh, hay fever, asthma, etc., etc., about £1,000 p.a., in commanding position in Grosvenor Place. Consultations 1-3 guineas. Special terms for series of treatments. Excellent accommodation to rent at £100 p.a. on lease. Scope. Premium one and a-half years' purchase.

41 SEASIDE TOWN WITHIN AN HOUR OF LONDON.—Very old-established PRACTICE. Receipts average £625 p.a. Panel about 300. Nice detached house (5 bedrooms), with garage and garden, for sale or rent. Good scope Premium £1,000

42 RESIDENTIAL DISTRICT WITHIN 15 MILES OF LONDON.—Old-established PRACTICE. Receipts last year over £2,000. Panel about 1,600. Visits 3/6 to 10/6. Nice residence (4 bedrooms, dressing room, etc.), good garage and garden, for sale or rent.

43 LONDON (Western District).—PARTNERSHIP in Practice averaging about £3,550 p.a., including good panel. House containing 4 bedrooms, etc., large garage and nice garden. One-third share at first. Premium two years' purchase. Preliminary Assistantship if desired.

44 MIDLANDS.—Old-established non-dispensing PRACTICE in first-rate residential town. Cash receipts average £1,640 p.a. Panel 560. House contains 6 bedrooms, etc., garage and small garden. Price £2,400 freehold. Scope Hospital Premium £2,850

45 E. MIDLANDS.—Old-established country PRACTICE, averaging nearly £650 p.a., in pleasant village Appointments worth over £150 and panel 500. Charming stone-built house (6 bedrooms), with central heating, main electric light and power and water supply. Large garage; garden about 1¼ acres. Price freehold £1,700 Scope Premium two years' purchase.

46 KENT.—Old-established and steadily increasing PRACTICE (in hands of Medical Woman) in rapidly developing district. Receipts last year £680. No panel. Visits mostly 5/-, medicine extra. Suitable residence could be obtained. Excellent scope. Premium £1,000.

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B. N. OF SCOTLAND.—Country PRACTICE, old-established, in beautiful district. Receipts last year, £450. Panel 390. Excellent house to rent.

C. EDINBURGH.—Receipts £800. Panel 1,000. Suitable house for sale. Premium—Practice and house, £2,300.

D. ABROAD.—SIAM ASSISTANTSHIP with view to Partnership Agreement for two years. First-class passage both ways. At end of two years, if suitable, opportunity given of purchasing share in Practice.

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(The Scholastic, Clerical and Medical Association Ltd.)

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LANCS TOWN.—Very old-established mixed Panel and Private PRACTICE; in present hands 35 years. Cash receipts last year £916. Panel 1,223. Scope. Excellent detached house, 2 reception, 5 bedrooms, garage and small garden. For sale, or would rent on lease. Premium—1¼ years' purchase Vendor retiring.—No. 1,004.

DEATH VACANCY. — SHEFFIELD. — Very old-established mixed-class PRACTICE in late incumbent's hands 20 years. Cash receipts last year £1,664. Panel 1,200. Scope. Good house, 2 reception, 6 bedrooms, 3 Professional rooms, garage. To rent. Premium—best offer.—No. 999.

MANCHESTER.—PARTNERSHIP in sound old-established mixed Panel and Private Practice. Average cash receipts £5,500 p.a. Panel over 4,500 and appointments £760 p.a. Good house available to rent. Premium—5/9th or 3/9th share—2 years' purchase (to include share of book debts, drugs, etc.).—No. 1001.

LANCS. TOWN.—PARTNERSHIP in sound practically unopposed mixed Panel and Private Practice near large town. Cash receipts last year £2,756. Panel 3,550. Good house, 2 reception, 3 bedrooms, garage. Price £800. Premium—one-half-share—best offer—No. 995.

CUMBERLAND.—Old-established and practically unopposed Seaside and Country PRACTICE in delightful district. Cash receipts last year £868. Panel 225 and transferable appointments £225 p.a. Excellent house, 3 reception, 8 bedrooms, electric light and gas, garage and garden. For sale, freehold. Premium —Practice—1¼ years' purchase.—No. 998.

DERBYSHIRE.—Old-established PRACTICE in pleasant district near large town, offering great scope for increase owing to building developments. Suitable for two men in partnership. Cash receipts last year £3,436. Panel 3,394. Two good houses, with ample accommodation and modern conveniences, each with garage, garden and tennis court. Premium—2 years' purchase.—No. 955.

YORKSHIRE (W.R.).—PARTNERSHIP SHARE worth £1,700 p.a. with Panel of 1,169 and appointments £80 p.a. in practically unopposed Country PRACTICE. Nice detached house, 2 reception, 4 bedrooms, garage, ¾-acre garden and tennis lawn. Electricity, etc. Premium—2 years' purchase. Reason for sale—ill-health of Vendor.—No. 985.

CHESHIRE/DERBYSHIRE BORDER.—Old-established PRACTICE in Country district. Cash receipts last year £700 (increasing). Panel 862. Great scope. Excellent house, 2 reception, 4 bedrooms, 3 Professional rooms (separate entrance), garage and good garden. Premium—£1,000.—No. 989.

NORTH WALES.—PARTNERSHIP (after short Assistantship) in old-established middle-class Practice in pleasant Coast town. Knowledge of Welsh desirable. Cash receipts last year £6,717. Panel 2,600. Well-equipped Hospital. Incoming partner would be required to live in flat. Premium—1/5th share—1¼ years' purchase.—No. 988.

MANCHESTER.—PRACTICE in Industrial district. Cash receipts £880 Panel 904. House to rent. Premium—any reasonable offer.—No. 855.

DERBYSHIRE.—Old-established mixed-class PRACTICE, near beautiful country and within easy reach of large town. Average cash receipts £1,100 p.a. Panel 970 and transferable appointments £200 p.a. Scope. Nice detached house, 3 reception, 6,7 bedrooms, garage and large garden. Freehold. Premium—1¼ years' purchase.—No. 991.

NORTH WALES.—Old-established PRACTICE near Sea and Country, capable of great increase. Cash receipts last year, £1,026. Panel 800. Nice surgery premises. Premium, best offer.—No. 905.

NEAR MANCHESTER.—Sound middle and working-class PRACTICE. Average cash receipts £2,692 p.a. Panel over 2,500. Scope. Detached corner house, 2 reception, 4 bedrooms, 3 Professional rooms, garage and garden. Premium—1¼ years' purchase.—No. 952.

SHEFFIELD.—Established PRACTICE. Cash receipts £1,112. Panel 600. House to rent at £52 p.a. Premium—1¼ years' purchase.—No. 940.

YORKSHIRE (W.R.).—PARTNERSHIP in old-established mixed-class Practice in important city. Average cash receipts £5,429 p.a. Panel 3,200. Scope. Convenient house available for incoming partner. Rent £50 p.a. Premium—1/4th or 1/5th share—2 years' purchase.—No. 997.

LANCS TOWN.—Old-established Panel and Private PRACTICE in large town. Average cash receipts £1,360 p.a. Panel 900. Scope, Good house, 2 reception, 4 bedrooms, garage. Rent £60 p.a. Expenses low. Premium —1¼ years' purchase.—No. 987.

MANCHESTER.—Well-established middle and better working-class PRACTICE in residential district. Cash receipts last year £1,122. Panel 740. Nice detached corner house, 3 reception, 5 bedrooms, billiard room, garage and garden with tennis court. Premium—best offer.—No. 968.

YORKS (N.R.). — Old-established unopposed Country PRACTICE in beautiful district near to large town. Cash receipts approximately £1,200 p.a. (including £455 p.a. from Panel). Good house, 2 reception, 5 bedrooms, large garden, garage, water, gas and electricity. Rent £70 p.a., on lease. Premium—2 years' purchase or near offer, to include drugs and fittings. —No. 973.

SUFFOLK.—Old-established Country PRACTICE, practically unopposed. Cash receipts last year £1,081. Panel 835 (yields £582 p.a.). Scope. Good house, 2 reception, 3 bedrooms, garage and nice garden. Rent £40 p.a. Premium —best offer.—No. 993.

LANCS TOWN. — Old-established mixed-class PRACTICE in large town about 6 miles from Manchester. Cash receipts £1,800 p.a. Panel 1,500. Scope. Good house, 3 reception, 6 bedrooms, 3 Professional rooms, garage. Rent £75 p.a. Premium—2 years' purchase, or near offer.—No. 990.

MANCHESTER. — Very-old-established mixed Panel and Private PRACTICE. Cash receipts last year £2,100. Panel 2,800. Scope. Good house, 2 reception, 4 bedrooms, 3 Professional rooms, garage. Rent £72 p.a. Premium—1¼ years' purchase.—No. 96.

MONMOUTHSHIRE. — Old-established Panel Contract, and Private PRACTICE in prosperous district. Cash receipts last year £1,400. Panel 1,200, plus Contract work, yields £1,230 p.a. Good house, 2 reception, 5 bedrooms Professional rooms (separate entrance) and garage.—Rent £40 p.a. Expenses low.—Premium—£2,000.—No. 970.

NORTH WALES COAST.—Middle-class PRACTICE. Receipts £1,417 p.a. Panel 415. Excellent house with ample accommodation, garage and garden. Premium—£2,100.—No. 929.

MIDLANDS.—Old-established mixed Panel and Private (non-dispensing) PRACTICE in large town. Cash receipts approximately £1,900 p.a. Panel 1,950. Good ten-roomed house, nice garden with tennis court and garage. For sale, or may be rented on lease. Premium—2 years' purchase.— No. 983.

LANCS TOWN. — Mixed-class PRACTICE. Cash receipts £1,084. Panel 1,050. Good house. Premium—1¼ years' purchase.—No. 951.

NEAR NEWCASTLE-ON-TYNE.—Colliery PRACTICE. Cash receipts last year £952. Panel 800. Scope. Good house to rent. Premium—1¼ years' purchase.—No. 978.

LANCS TOWN.—Mixed panel and private PRACTICE, in present hands 30 years. Cash receipts approximately £1,500 p.a. Panel 1,500. Great scope. Good house, 2 reception, 4 bedrooms, garage and small garden. Rent £50 p.a Premium, best offer.—No. 945.

NEAR MANCHESTER. — Very old-established mixed-class PRACTICE capable of much increase owing to building developments. Cash receipts last year £1,006. Panel 470. Nice detached house, 2 reception, 5 bedrooms, garage and large garden. Separate entrance to surgery. Price £650. Premium —Practice—1 year's purchase. Vendor retiring.—No. 875.

SOUTH AFRICA.—Established PRACTICE in Transvaal. Cash receipts last year £746. Premium—£650.—No. 986.

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4. CENTRAL LONDON.—Owing to illness, old-established PRACTICE producing about £2,300 p.a. Panel of over 3,100 patients. Suitable accommodation available on rental. There is an appointment producing £160 p.a. which is not included in the above receipts but which is believed to be transferable.
5. LANCS.—Suburb of large town. PRACTICE producing about £800 p.a. with panel of 467 patients. Suitable house on rental at £90 p.a. inclusive. Stated to be scope for increase. Premium £1,100.
6. DEATH VACANCY.—BAYSWATER, W. 2.—Good class PRACTICE producing about £840 p.a. but has been considerably more. Receipts have decreased owing to ill health. Fees 10,6—no panel. House available on rental or practice could be taken over separately. Premium 1 year's purchase.
7. LONDON, S.E. 11.—Old-established working class PRACTICE producing approximately £500 p.a. Panel of about 500 patients. Can be worked as lock-up. Premium 1 year's purchase or any reasonable offer accepted.
8. YORKS.—LARGE TOWN.—Well-established better working-class PRACTICE. [illegible] el of 1,150 patients approx[imately]. 7/6. Free[hold] house for [illegible] coms, surgery, waiting r[oom]
9. SURREY.—Pl[easant] [illegible] 12 months about £1,280 with a Panel of 800 patients. Fees 3/6 upwards, with visits from 5/- upwards. Midwifery 3 to 10 gns., about 15 cases per annum. Vendor has to give up owing to ill-health. Premium £2,000.
10. EASTERN COUNTY AND MARKET TOWN.—HALF-SHARE PARTNERSHIP in Practice established some 100 years, owing to retiral of junior partner. Average cash receipts over £2,400 p.a., of which over £700 comes from Panel and P.A.C. Suitable house available on rental. Ingoing partner should not be more than 30, preferably have a degree and some hospital experience.
11. ASSISTANTSHIP—with a view to a PARTNERSHIP SHARE to produce about £1,100 p.a., in a well-established Practice. Ingoing man must be young, have had considerable hospital experience, and preferably held an Ophthalmic H.S. He should be married or engaged, and a Protestant. Will applicants please give fully details of experience, etc.
12. DEVON, SOUTH COAST.—A well-established good-class entirely private PRACTICE producing for the past 12 months about £1,600. Panel could be had if desired. Fees 2/6, 3/6, 5/- and 7/6, with a few visits up to 21/-. Non-dispensing. Suitable house containing consulting room, 2 reception rooms, 6 bedrooms, for sale. Freehold £1,400. Partnership introduction. Would be suitable for ex-I.M.S. or similar.
13. NORFOLK AND SUFFOLK BORDERS.—A SHARE to produce about £1,100 p.a., is offered in an old-established Practice with considerable scope for increase. Receipts approximately £3,300 with a Panel of some 1,400 patients. Expenses are very low and there is likely to be a choice of houses.
14. DEVELOPING NORTHERN SUBURB.—A 3/8TH SHARE is offered in a well-established and growing Practice. Receipts for 12 months to 1/4/37 amounted to about £5,200, including about £80 from appointments and a Panel of some 5,300 patients. There is a choice of houses available.
15. LANCS.—SUBURB OF LARGE TOWN.—PRACTICE established for 10 years—gross cash receipts for year ended 31/3/37 amounted to about £800, with an increasing Panel of some 470 patients. Fees 2/6 and 3/6, with visits 3/6 and 5/-. Suitable house with good accommodation and separate surgery available on lease at £60 p.a. Premium £1,100, plus good debts, drugs and surgery equipment at valuation. Vendor giving up owing to ill-health.
16. WEST COAST.—Well-established PRACTICE producing about £1,900 p.a., including Panel of 1,450 patients which gives £820 p.a. and one or two small appointments. Visits 3/6 to 12/6. Consultations 3/6, medicine extra. There is a Cottage Hospital, purchaser would get on the staff. There is stated to be scope for surgery. Suitable house on rental at £50 p.a., with rates of £26 p.a. Accommodation is ample, and consists of waiting and consulting room, dispensary with separate entrance, 2 reception, 7 bedrooms and billiard room, half-acre of garden and garage for 2 cars. Premium 1½ years' purchase.
17. [illegible] PRACTICE for disposal. Gross income 350 patients. There is also a possibility [illegible]ospital appointment worth about £120 p.a. House can be rented on lease or purchased.
18. LONDON, E.2.—Lock-up PRACTICE established 80 years for disposal. Income about £800-£900 p.a., with Panel of about 1,150 patients. Fees 2/6 and 3/6. Visits from 3/6. Suitable accommodation available consisting of consulting room, dispensary, waiting room, the remainder being sub-let for £250 p.a. Rent and rates £230 p.a. Premium 2 years' purchase to include about £150 fittings, fixtures, drugs, etc.
19. CENTRAL LONDON.—Long-established PRACTICE for disposal owing to ill-health. Income about £2,300 p.a. Panel of over 3,100 patients. There is also an appointment producing £160 p.a., which is not included in above [illegible] mmodation available.
20. [illegible] 30, producing about [illegible] Suitable accommodation available.
21. BAYSWATER.—PRACTICE established some 65 years for disposal. Gross receipts about £1,440 p.a., with 1,000 Panel patients. Suitable house on lease at £130 p.a. Premium 2 years' purchase.
22. ESSEX COAST TOWN.—A ONE-THIRD SHARE is offered to a physician in an old-established Practice producing about £7,200 p.a. Panel produces about £900 p.a. Consultations 3/6 to 7,6. Visits 5/- to 21/-. There will probably be a choice of houses. Ingoing partner should be aged 35 or over and must have a good hospital experience. He should hold the M.D. or M.R.C.P.
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24. NORTH LONDON.—PRACTICE producing £753 p.a., including £322 from Panel and £135 from one appointment. Fees 2/6 to 3/6. Visits 3/6 to 5/-. Suitable accommodation available, 2 consulting rooms, waiting room and dispensary with separate entrance—2 reception rooms, 7 bedrooms. Nett outgoings approximately £107 p.a. Premium £1,250.
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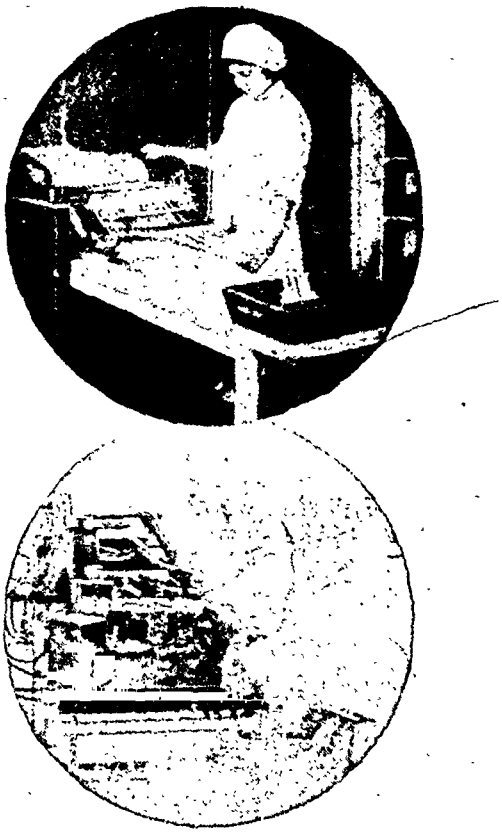
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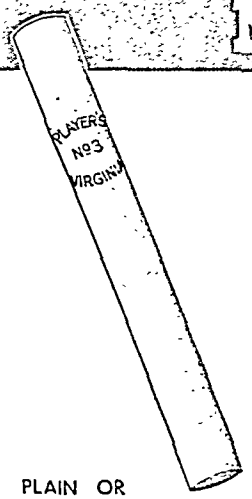
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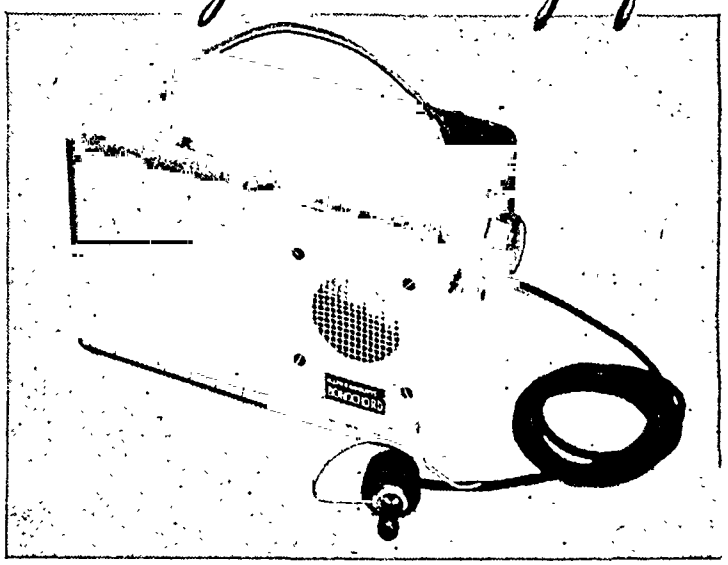
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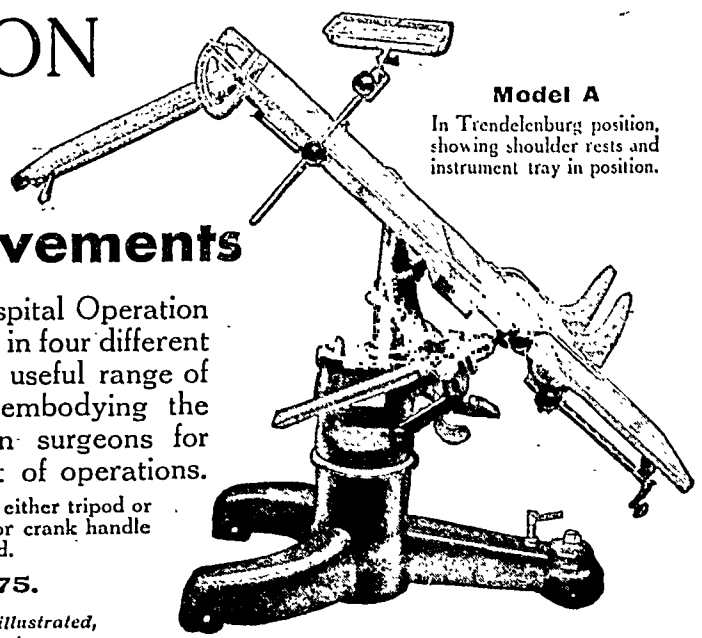
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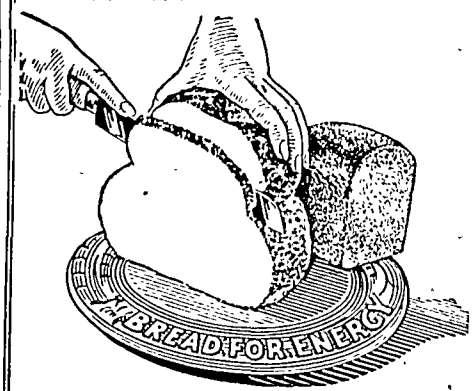
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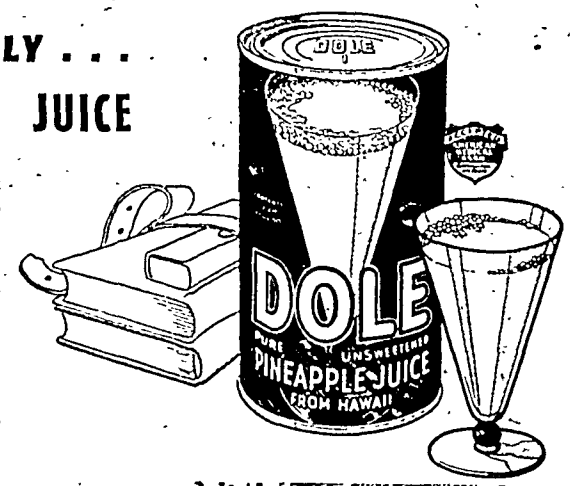
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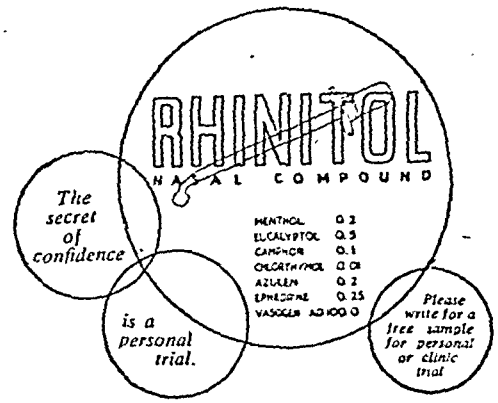
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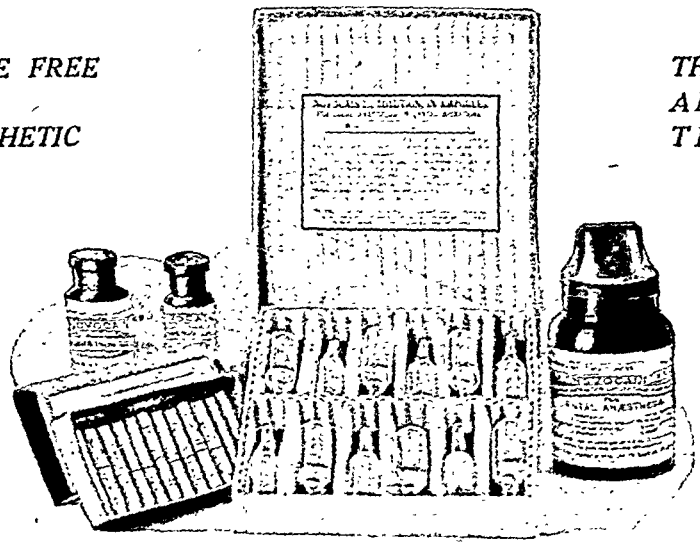
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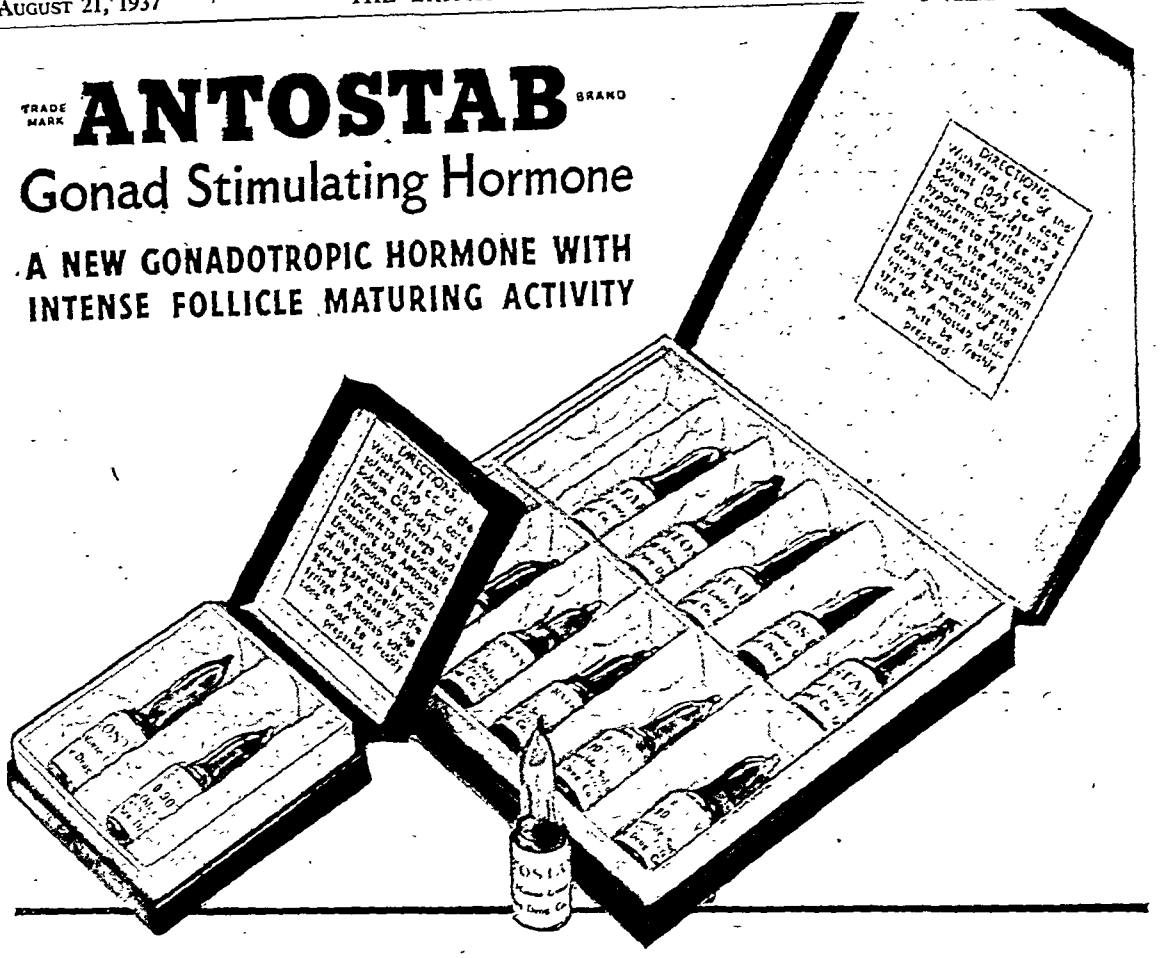
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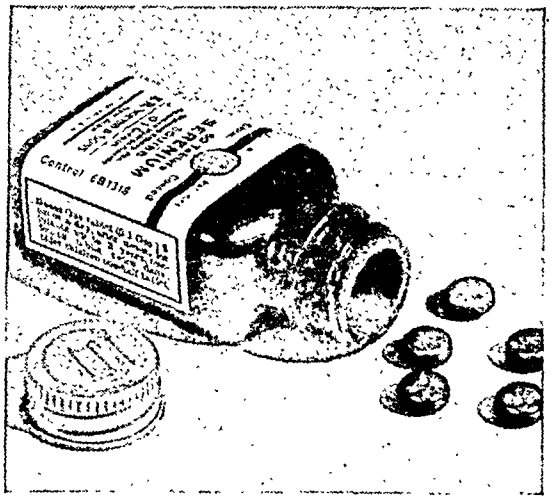
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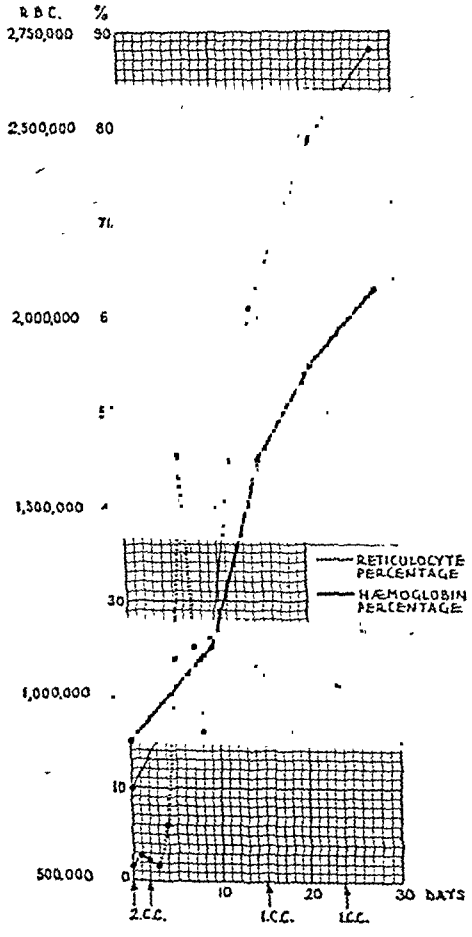
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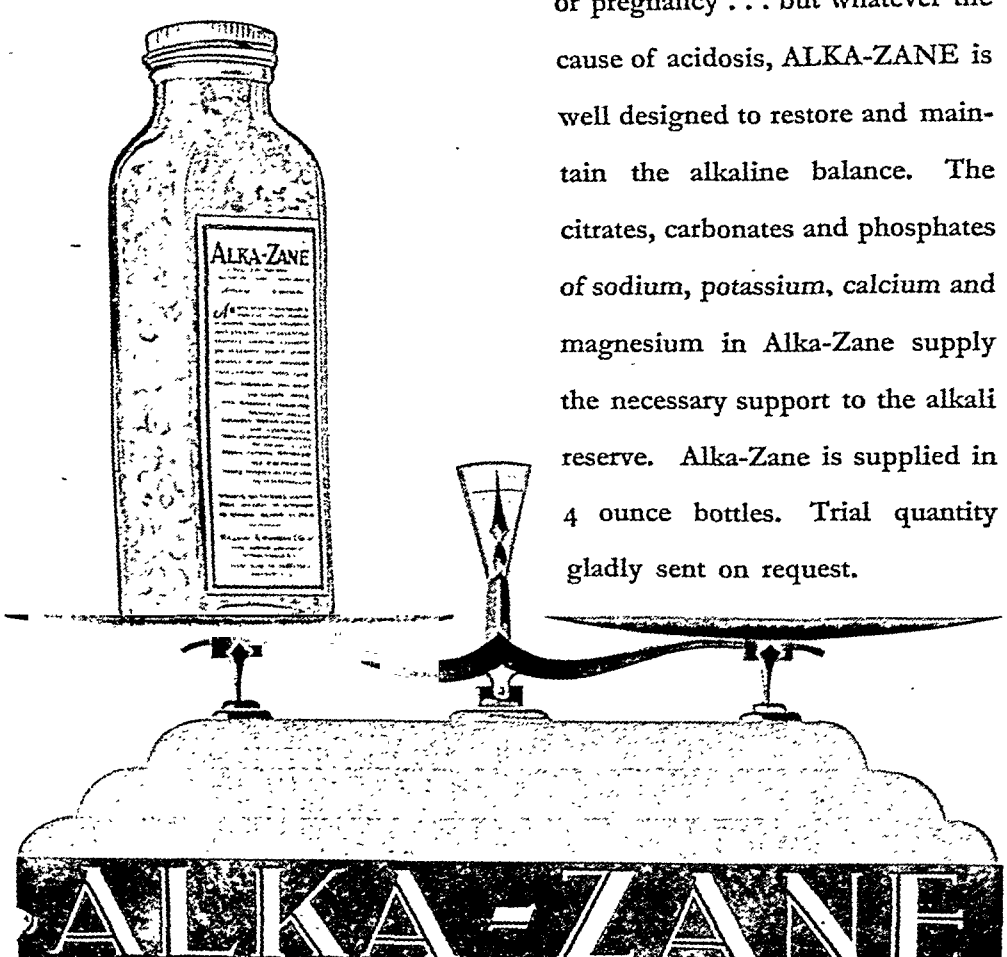
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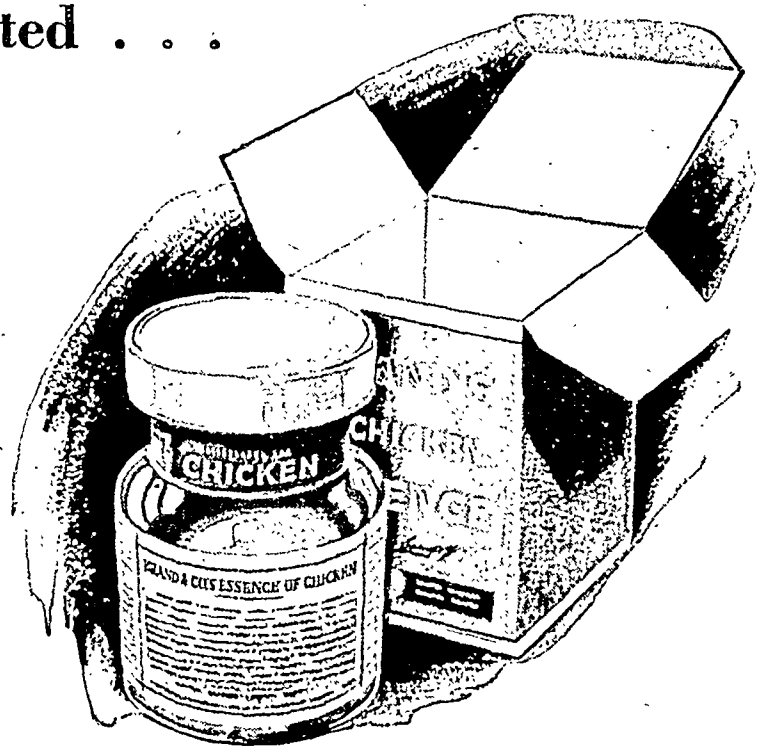


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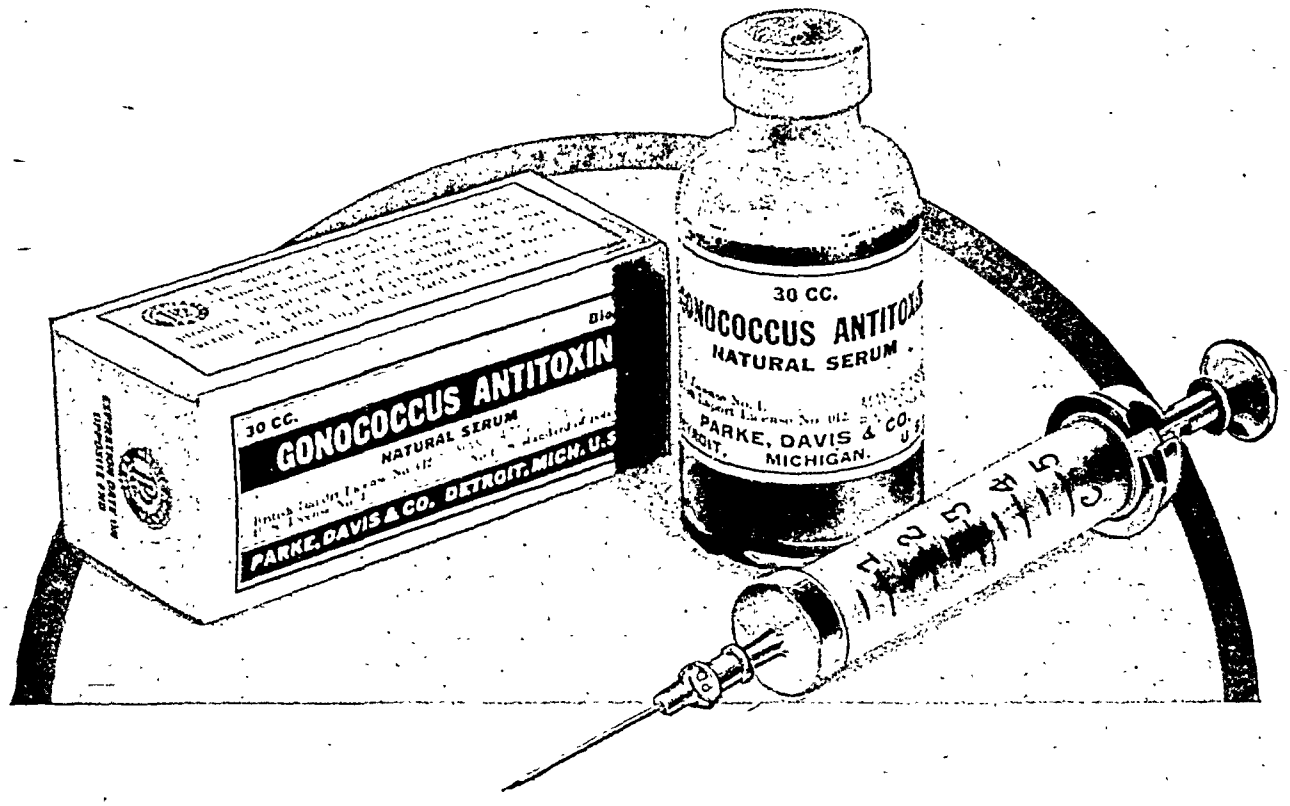
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* "The Treatment of Gonorrhœa with a Specific Antitoxin," T. Anwyl-Davies, 1937. *Brit. Med. J.*, 1, 321.

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BRITISH MEDICAL JOURNAL

LONDON SATURDAY AUGUST 21 1937

MODERN TREATMENT AND RESULTS OF TREATMENT OF FRACTURES OF THE NECK OF THE FEMUR*

BY

ERNEST W. HEY GROVES, M.S., F.R.C.S.

Emeritus Professor of Surgery, Bristol University

As it is only two years since I opened a discussion on this subject at the Melbourne meeting of the Association I propose to make this paper a very short one, setting out what seem to me to be the chief advances that have been made and formulating the questions which we ought to-day to be able to answer about methods and results.

The Smith-Petersen Nail

This device has been a wonderful example of the triumph of practice over theory. It was introduced at a time when the whole trend of surgical opinion was set strongly against "plating" of any kind which involves burying large foreign bodies in the tissues. I well remember when Smith-Petersen introduced his device before a joint meeting of the British and American Orthopaedic Associations in 1929, and how shocked many of us felt at the deliberate reversion to the steel-plate method of fixing fractures. And yet now, less than ten years after, it may be fairly said that the Smith-Petersen nail has completely dominated the situation, not only in America and England but also in Germany, France, Belgium, Austria, and Italy. The rapid adoption of this method has been due to the very quick immediate restoration of function which it affords. The patient who we were accustomed to think of as languishing in bed for months is now able to get up within a week. It is no longer necessary to keep him in a large plaster case for weeks or months, and the whole prospect is changed from one of rather gloomy resignation to one of confident optimism. As in the case of all other surgical advances, zeal has outrun discretion, and extravagant claims are made which may lead to disillusionment later.

The great merit of Smith-Petersen's nail is that it affords the maximum of mechanical fixation with the minimum of trauma or destruction of tissue. The three flanges control rotation of the bone fragments, whilst the thinness of the metal blades does little damage to the cancellous tissue of the femoral neck. But it is well to remember that, however perfect in these respects the nail is, it has all the drawbacks of a metal foreign body. Apart from its undoubted virtue in fixing the fragments so that growth, union, and function can occur, it is essentially a check to tissue formation. When the pin is removed after weeks or months it is often found that the site in which it has lain is filled with loose bone debris or mere granulation tissue. In actual practice, even in cases which do well, the nail will have to be removed sooner or later, though this is a very trivial drawback when compared with the rapid immediate recovery which it usually brings about.

The Results

At present I do not think we have enough accurate information as to the ultimate results of the Smith-Petersen nail treatment. So far lists which have been published represent almost entirely only recent results, and I hope very much that subsequent speakers will be able to give us figures about cases at a year or more after the operation. I have seen cases in which the nail has been perfectly applied and the patients have been able to walk out of hospital, and yet in less than twelve months they have extruded the nail and suffered disunion, being left with an ununited fracture. I should very much like to know in what percentage of cases this disappointing result occurs. That it must occur in a certain proportion is obvious. Nailing the fracture will sometimes imprison a fold of capsule between the fragments, and no bony union can cross this fascial barrier. In other cases, even without interposition of capsule, new bone will be very slow in growing from the neck into the head and will be so feeble that it is quite unequal to bearing any strain. For both these reasons it is certain that failure must sometimes occur, and before long we ought to be able to state the probability of this mischance with some accuracy.

In the days when Whitman's method held the field the optimism of its originator at one time led us to think that it was well-nigh infallible. But when the pitiless light of experience was shed upon the facts it became obvious that only 50 or 60 per cent. of the cases gave bony union. Smith-Petersen's nail will probably give a better figure than this, but, for the reasons I have stated above, the percentage of successes must fall considerably short of 100. Probably 75 per cent. will represent the maximum number of ultimate successes. But even if this is the best that the method can achieve we have to remember that it will also have saved a great amount of suffering and invalidism in the rapid immediate recovery of function it has afforded to all of the patients.

Methods of Application

So far I have merely referred to the insertion of the Smith-Petersen nail without distinguishing between the different methods of its application. These may be grouped under three headings—namely,

1. The open operation.
2. Blind insertion over wire guides.
3. Blind insertion with the help of a mechanical director.

* Read in opening a discussion in the Section of Orthopaedics, including Treatment of Fractures, at the Annual Meeting of the British Medical Association, Belfast, 1937.

The Open Operation.—Smith-Petersen's original operation in this country has been modified by Watson Jones. The method was well described and illustrated in the July number of the *British Journal of Surgery* last year. In the case of comparatively young and robust patients this is the method of choice. It gives a good view of the fracture and enables the operator to draw aside the flap of capsule which so often is folded over the fractured neck of the femur. And, further, it allows an accuracy of reduction under the guidance of direct vision which is denied to any method guided only by the *x* rays. The insertion of a stout drill right through the neck and head and on into the acetabulum will hold the fragments in position whilst the nail is being driven into place. But, on the other hand, it is foolish to pretend that the open operation is either easy or free from danger. It must take nearly an hour in performance; there must be some loss of blood, and there must be a wide exposure of the soft parts and a free opening of the cavity of the hip-joint. For all these reasons I hold that it is unjustifiable in old and feeble patients. And it is just these feeble old patients who constitute the real problem in the wards of many hospitals, and particularly in the municipal institutions.

Blind Insertion over Wire Guides.—This method, which is associated with the names of Sven Johansson, Jerusalem, and King, has had a great vogue. We are honoured to-day by the presence of Professor Sven Johansson, and no doubt he will give us a convincing demonstration of its merits. I have watched it being done by various distinguished surgeons, including King, at Melbourne, who two years ago was an enthusiastic advocate of the method. We greatly regret that he is unable to come here to-day to introduce this discussion as he had hoped. Frankly I feel quite unable to do justice to the method, of which I have had so little personal experience. It involves two great drawbacks. First, it is long and tedious and involves keeping the patient for one or two hours under an anaesthetic. Secondly, it is dependent on taking and interpreting many *x*-ray pictures, on which reliance must be placed for guiding the nail into position. These drawbacks, to my mind, make it unsuitable for the feeble old patient whom I have already said is the real problem we have to treat.

Blind Insertion with Mechanical Director.—Instead of being solely dependent on the *x* rays to guide the Smith-Petersen nail into position various mechanical devices have been invented to secure accuracy of insertion. There are a host of these, and I will only speak of one which I have designed, and which has the great advantage of simplicity. It has been used many times by my friends Mr. Kenneth Pridie of Bristol and Mr. William Gissane of St. James Hospital, London, and I hope that they will be able to demonstrate to you its method and results. The fracture having been reduced, a two-pronged guide is placed over the line of the bones so that one prong touches the middle of the head of the femur and the other the base of the femoral neck. This enables a drill to be passed accurately into the bone in the true axis of the neck of the femur. Only a short incision is required; the operation is bloodless; it can be done under gas-oxygen anaesthesia; and if occupies only about ten to fifteen minutes. It is therefore suitable for the feeble old patient, who will suffer neither loss of blood nor shock.

After-treatment

The tendency nowadays is to give very little after-treatment, but to consider that the properly placed nail has cured the patient. Eversion of the leg is prevented by a bar fixed to the sole of the shoe, or by slinging the flexed knee to an overhead cradle. The patient is usually allowed up within one week, and walks with sticks or crutches, bearing no weight on the injured leg for about six weeks. I do not know why the tried and trusty walking calliper has been abandoned, but unfortunately it has. It seems to me that it would be much wiser to adhere to the use of this appliance as being a safeguard against weight-bearing until bony union is assured. The nail should be removed about three months after its insertion. It can do no further good, and its continued presence tends to produce bone atrophy.

Late Cases

Probably the number of cases of definite non-union will become much smaller as the practice of early and accurate nailing is more followed. But unfortunately there will always remain a certain number of these, and their condition, except in those who are bed-ridden, is so deplorable that it certainly requires attention. There are three possible operations by which pain and lameness may be diminished.

Bifurcation Osteotomy.—This is usually the method of choice. It is very simple and easy, involving no shock or haemorrhage. The femur is divided at the level of the small trochanter, and the shaft is pushed inwards so that its upper end shall impinge against the lower margin of the acetabulum. The leg is put up in moderate abduction and fixed in a plaster case. The objects achieved by the operation are two: first and foremost, the Y-shaped upper end of the femur will serve to support the weight of the body from the lower margin of the acetabulum, whilst the leg is brought more directly under the centre of gravity of the body; secondly, abduction of the leg is substituted for adduction, and therefore the shortening of the leg will be reduced.

Schanz's Cuneiform Osteotomy.—This is a more accurate method of reconstructing the line of the upper end of the femur. Two long stout pins are driven into the femur through a lateral incision. The upper pin goes through the great trochanter into the neck. The lower pin goes through the shaft of the femur several inches lower down. The two pins are inserted at a divergent angle, which represents the angle of reduction. A wedge with its base lateral is then cut out from the femur between the two pins. The femur is abducted until the wedge-shaped gap is closed. The projecting ends of the pins are incorporated in the plaster cast. The merit of this operation is that the upper trochanteric part of the femur is adducted by its transfixing pin. The reconstructed upper end of the femur is Γ-shaped (like an inverted L) and will actually support the separated head of the bone so that the weight of the body will force the two original fractured surfaces together. Böhler has recorded cases in which this has eventually led to bony union. The method is more difficult than the simple bifurcation osteotomy.

Whitman's Reconstruction Operation.—In this procedure the head of the femur is removed from the acetabulum. The neck is thrust into the hip-socket and the great trochanter is transplanted lower down on to the femoral shaft. The success of this operation will depend largely on the solidity of the damaged neck of the femur. If this is fairly sound it may be relied on to form a good substitute for the lost head. But this operation is not to be done in the case of feeble old patients, for whom the simple bifurcation osteotomy is the method of choice.

Conclusions

1. The proper use of a Smith-Petersen nail is the best ethod of treating intracapsular fractures of the neck of femur. Its simplicity and accuracy represent a great vance over older methods.

2. The Smith-Petersen nail is only the provision of an icient internal splint. Its great merit is that it allows the tient to get up within a few days.

3. The Smith-Petersen nail will neither ensure nor enurage new bone formation, and therefore there must ways be failures after its use.

4. The nail can only succeed if it is accurately inserted ter the fracture has been perfectly reduced.

5. The open operation is the method of choice in oung and vigorous patients.

6. For feeble old patients the blind method, using a iechanical guide for inserting the nail, should be used. his is easy and is free from danger.

7. In ununited cases a bifurcation osteotomy is usually ie method of choice.

OPERATIVE TREATMENT AND RESULTS IN FRACTURE OF NECK OF FEMUR*

BY

PROFESSOR SVEN JOHANSSON

Gothenburg

Hardly any form of fracture has attracted such interest and been the subject of so much discussion as fracture of the femoral neck, especially during the last few decades. The pessimistic feeling regarding its treatment has now given way to a more hopeful attitude. Authors differ, however, on this subject. As late as 1935 the well-known American surgeon, Kellog Speed, called this fracture "the unsolved fracture." With the greatest surprise, then, we hear that one of the leading surgeons of Germany, Professor Sauerbruch of Berlin, last year proposed removal of the head of the femur as a standard method in patients over 35 years, a method which I thought had been abandoned all over the world a long time ago.

The bad results have been thought to be due to the peculiar anatomical conditions in this form of fracture and to the high average age of the patients. The experience of the last few years, however, seems to me to have produced abundant evidence that this view must be abandoned. With the proper technique, consisting in exact reposition and good fixation, not too quickly removed, fractures of the femoral neck can be healed as easily as others. Everything, or nearly everything, depends on the technique. That the demands can be met and good results be attained with conservative treatment has been shown by Whitman, Lorenz, and Löfberg among others.

The Conservative Method

It is, however, not so easy to get a clear idea of the results to be attained by conservative treatment. The different statistics are scarcely comparable, for the reason, among others, that the cases have been selected for treatment particularly with regard to age. Concerning the end-results most of the statistics leave much to be desired. I think, however, that the American surgeon Gill comes very close to the truth when he says:

"Making due allowance for the faults of statistical tables, and granting that some surgeons, because of their greater expertness in manipulation and putting on plaster, may get better results than others, it is still evident that the use of the Whitman method has given vastly better results than the older methods of treatment, and that good end-results may be expected on a general average in 50 to 65 per cent. of cases."

In a critical review of various statistics of conservative treatment Gill estimates the primary mortality at not less than 20 to 25 per cent. In my own ward all cases were treated conservatively up to the year 1932. During the ten-year period 1922–31 the number of cases amounted to 390 and the mortality was 19 per cent. Concerning the end-results I can only say that they were worse rather than better than the average.

I have no experience of my own regarding the operative treatment entailing exposure of the fracture site, and for this reason will not discuss that method.

Extra-articular Osteosynthesis

In the method of treatment evolved by myself—extra-articular osteosynthesis, first published in the *Zentralblatt für Chirurgie* in 1932—three fundamental points demand attention: first, non-operative reposition by extension in the position of abduction with inward rotation following; secondly, fixation—without exposure of the fracture site—by the use of Smith-Petersen's rustless nail; thirdly, artificial impaction according to the method of Cotton. The following are the details of the treatment.

The reposition is done in bed with wire traction through the tibial tuberosity. In general, one week is enough to reduce the dislocation in the frontal plane. It is important that this primary wire traction take place with retention of the outward rotation, otherwise there is always the risk that the head will rotate. At the start I performed the reposition on an extension table as soon as possible after the accident; in most cases a satisfactory reposition was attained in this way, but not in all. Of my first 100 cases, in which as a rule the reposition was made on the extension table—redislocation took place in 16 per cent., necessitating a second operation; in the later seventy-nine cases, in which previous extension in bed was the rule, the corresponding figure was only 4 per cent. The advantage derived from the period of waiting is that the patient can be specially observed in regard to heart and lungs. Cases which are bad risks can be improved or eventually excluded. The only manœuvre of reposition which is needed on the extension table is inward rotation (about 25 degrees), of course with maintained extension. An abduction of about 45 degrees is enough.

Experience has shown that the reposition made in bed is not endangered by the removal of the patient to the extension table. Local anaesthesia and a few drops of ether while inserting the nail are enough if the patient has been given morphine beforehand. If spinal anaesthesia is used there is always the risk of an undesired over-extension. The reposition is controlled with *x*-ray pictures taken in two positions at right-angled planes; the position of the guiding wire and the nail is controlled in the same way. To simplify the insertion of the nail a thin stiff wire is first drilled into the centre of the femoral neck. After radiographs in two planes have shown the position of the wire to be satisfactory, the nail, which is bored through, is threaded on the wire. The wire is then withdrawn, and with a few blows on the femur-shaft below the trochanter the desired artificial impaction is effected. The most important point is to judge the direction accurately when introducing the wire. This is done in the following simple way.

* Read in opening a discussion in the Section of Orthopaedics, including Treatment of Fractures, at the Annual Meeting of the British Medical Association, Belfast, 1937.

About two centimetres below and parallel to Poupart's ligament are placed two rows of lead shot, each row consisting of three pieces. In this way the determination of the central point of the head in the frontal plane is greatly facilitated, it being possible to fix it within a millimetre or so. The point, when ascertained, is marked with a short hypodermic needle. In order accurately to locate the actual point of entrance for the guiding wire a sharp-pointed steel pin is inserted percutaneously just below the greater trochanter and radiographs are taken. The optimum point of entrance for the guiding wire, in both the frontal and the sagittal plane, is now easily calculable.

The required length of nail is ascertained in the following manner. The guide-wire is inserted for a distance of 9 cm., or, if the femoral neck is very short, 8 cm., and a skiagram readily shows whether the nail should be longer or shorter than the wire. Allowance must be made for the slight enlargement of the picture produced by the distance between the *x*-ray tube and the film. I once had the unfortunate experience of seeing a nail broken: the patient in question was unusually heavy. This kind of accident can be avoided, however, by using a nail with wings one millimetre broader than usual.

The position of the nail in the femoral neck is not a matter of indifference, since the forces of displacement that are compensated for by means of the nail are in a large degree dependent upon the situation of the fracture line. This fact was convincingly demonstrated as a mechanical problem by Pauwels in his work on fractures of the neck of the femur, published last year.

Owing to individual variability the axis of the femoral neck does not always assume a horizontal position upon 25 degrees inward rotation of the knee-joint, but by my method this does not much matter as the alignment apparatus I use permits a very satisfactory adjustment of the angle to the horizontal plane.

In the majority of cases I consider the axial location of the nail to be the best, for the simple reason that there is less risk of getting outside the femoral neck and head. Only in the cases in which the fracture line is almost vertical—uncommon cases in my experience—should one try to put the nail in the uppermost part of the neck.

After the operation the patient is placed in bed in a position of slight flexion at hip- and knee-joints, and remains there as a rule for at least one month. During this time treatment consists of mobilization of the limb, muscle massage, and stimulation by faradic currents. In order to avoid pulmonary congestion very old patients are allowed to *sit* out of bed at an earlier date, but any weight-bearing is absolutely prohibited. Thereafter one proceeds to walking exercises in a walking-chair. This continues for about a month, after which time the walking-chair is replaced by crutches—two at first and one later on. In uncomplicated cases, after about three months the ability to walk is usually quite good, and even full weight-bearing is painless. Observation by repeated radiographs is to be recommended as a safeguard against unpleasant surprises.

Should the position of the nail immediately after the operation or later prove unsatisfactory and redislocation occur one should not hesitate to reoperate. I have done so in nineteen of my 179 cases—that is, in about 10 per cent. In ten of these nineteen cases bony union took place. Redislocation has as a rule resulted from the use of the wrong technique; in some cases the nail had slipped on account of too early weight-bearing, in others the cause is not known. In twenty-six cases out of 179 the nail was extracted after it was certain that bony union had ensued (generally not before six months). The reason was in most instances that the nail had been displaced outwards and caused pain and aching.

A very important point is secondary necrosis of the femoral head. Here one has to differentiate between the healed cases and those not healed (pseudarthrosis). That the head in the latter cases should necrose is not surprising; in the former—that is, the healed cases—necrosis is, according to my experience, not very frequent. I have only seen it happen three times; in one case with very slight alteration and no clinical symptoms. On one occasion I performed arthrotomy and removed the necrotic part, which resembled typical osteochondritis dissecans. Even in cases treated conservatively one now and then observes necrosis. This is probably due to primary lesions of the vessels and not to the operation as such.

Partial necrosis of the head is more frequent in young than in elderly patients. In one of my cases, that of a boy 13 years old with a medial fracture, it occurred after the fracture had healed—a spontaneous epiphyseolysis.

Results

My own statistics now comprise 179 cases, most of them medial fractures. The classification has been according to Anschütz's scheme. The results are shown in the following table:

Medial Fractures

Age	Total Cases	Deaths	Cases Operated on	Complications				
				Non-union	Osteo-Arthritis of Hip	Aseptic Necrosis of the Femoral Head	Separation of Upper Femoral Epiphysis	Cases the Fate of which is Uncertain
Under 60	53	1	52	0	1	1	1	1
Over 60 ..	112 (66)	18 (15)	94 (51)	8 (5)	1 (1)	1		6 (6)
Totals ..	165 (66)	19 (15)	146 (51)	8 (5)	2 (1)	2	1	7 (6)

Intertrochanteric (Basal) Fractures

Age	Total Cases	Deaths	Non-union
Under 60	3	0	0
Over 60	11 (7)	0	0
Totals	14 (7)	0	0

The mortality was 10.6 per cent. Bony union followed in 95 per cent. of all cases alive, and in 94 per cent. of all medial fractures alive.
The figures in parentheses represent the number of patients in that group over the age of 70.

In one case only can the cause of death be attributed to the operation. This was a case of fat embolism. In nine cases the cause of death was found after full investigation not to be due to either the fracture or the operation. Fifteen patients out of the nineteen who died were more than 70 years old.

Time does not allow of an account of other statistics and comments on them. In passing I will only mention that, among others, Böhler and Felsenreich in Vienna, who used the method I have described, a short time ago published relatively large statistics showing the same favourable results.

Conclusions

My conclusions are as follows: By proper reposition and fixation bony union and fully satisfactory functional

results may be obtained in the majority of cases, even in medial fractures and in very old patients.

It is possible to obtain the fixation necessary for good union by means of the method of extra-articular osteosynthesis just described. This method is capable of wide application, because it is not necessary to put the patient in plaster-of-Paris afterwards—a fact which reduces the risk of mortality. The after-treatment is thus very much simplified.

The conservative treatment, as well as operative treatment with exposure of the fracture, should therefore be replaced by extra-articular osteosynthesis as the standard method.

PHYSICAL DISORDER IN 164 CONSECUTIVE ADMISSIONS TO A MENTAL HOSPITAL

THE INCIDENCE AND SIGNIFICANCE

BY

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The existence of certain types of mental disorder which are caused by organic disease is too well known to need emphasis. Physical illness consequent upon mental disorder is equally well known. The extremely large number of physical disorders present in a series of consecutive admissions to the above hospital has indicated the need for an analysis in some detail of the types encountered, and a correlation, if any, between the mental and physical symptoms. This mental hospital serves a wide and thickly populated area, one which has suffered greatly owing to the industrial depression during the past few years. Hence a large number of the cases under consideration were admitted from what have been truly termed "distressed areas." This fact may be of significance as contributing, in the opinion of the author, to an abnormally high incidence of physical disorder in mental admissions.

Nature of Physical Disorders Encountered

Table I classifies in general terms the numbers of those admitted who have been or are suffering from medical, surgical, or gynaecological conditions. It also includes a miscellaneous group which will be described later, and a special group of cases termed "acetonuria" which are considered to be indirectly due to mental illness. From the table it is seen that of the 164 patients admitted 137 were found to suffer from some pathological lesion, but in this figure are included eight cases of senility (patients of 70 years of age or over) and seventeen of general paralysis of the insane. If excluding these, therefore, from the 164 admissions, 112 were considered to be physically unfit, a percentage of 68.

TABLE I

Total admissions	164
Medical conditions	61
Surgical conditions	20
Gynaecological conditions	8
Miscellaneous group	9
Senile cases	8
General paralysis of insane	17
Acetonuric group	14

These cases may also be classified under three distinct headings, dependent upon the connexion with the mental symptoms exhibited by the patient:

1. Patients whose mental symptoms are apparently the direct result of physical disorder—for example, arteriosclerotic dementia.

2. Cases in which the mental and the physical illness vary *pari passu* with one another. Thus, two females were admitted suffering from benign hypertension, and under treatment both physical and mental symptoms improved simultaneously. These cases will be described later in greater detail.

3. Patients with both physical and mental disorders which possess no apparent connexion with one another, and must be regarded as two distinct entities. These are well exemplified by cases with surgical conditions which could not be correlated with the psychoses of these particular patients. In the interests of clarity and detailed analysis it is of advantage to discuss these cases after classification according to the various systems affected.

Circulatory System

Of the total admissions twenty-nine were found to be suffering from some form of cardiovascular change, as shown in the following table:

TABLE II

	No. of Cases
Hypertension:	
(*a*) Benign	5
(*b*) Malignant	10
Valvular disease of the heart	9
Chronic myocardial disease	5

The cases of benign hypertension are of interest, being good examples of physical and mental disorder varying *pari passu*. Thus on examination three females were found to have an average systolic blood pressure of 190–200 mm. Hg in the absence of any renal lesions. The average age of these patients was 50 years, and consequently the condition might well be termed a "menopausal hypertension." Each patient exhibited similar mental symptoms—namely, nervous and emotional instability, being easily fatigued, readily upset by small everyday worries, and showing a tendency to hypochondriasis. Rest and the administration of bromide and theominal resulted in a simultaneous amelioration of both the physical and the mental symptoms in two of the three cases, with subsequent discharge from the hospital.

The patients with malignant hypertension constitute a fairly definite group in which the mental symptoms in most cases can be attributed to the physical disorder—namely, generalized arteriosclerosis accompanied by renal changes. Three of these were suffering from residual hemiplegia on admission. In six, whose ages varied between 56 and 65 years, the mental state was in the main one of confusion and restlessness, and although no cerebral accident had occurred before admission two died of cerebral haemorrhage during residence. The last case was that of a young male schizophrenic aged 30 years, who had a previous history of acute nephritis and whose physical state on admission was typically that of malignant renal arteriosclerosis. It is, however, realized that this group, which one is apt to class as arteriosclerotic dementia, may not be quite so clear-cut as one might infer, owing to the common incidence of arterial disease in mental patients even at comparatively early ages.

The nine cases of valvular disease of the heart included in this series exhibited no obvious relation to the type of psychosis present. Three of these patients were suffering from mitral stenosis, one of whom incidentally has since developed signs and symptoms of subacute infective endocarditis; three from mitral regurgitation; and three from aortic regurgitation. Again, in the five cases with physical

symptoms and signs sufficient to warrant a diagnosis of chronic myocardial degeneration no obvious correlation between the mental and the physical state could be discerned.

Respiratory, Alimentary, and Urinary Systems

Table III summarizes the various physical conditions met with in these groups.

TABLE III

		No. of Cases
Respiratory diseases	Lobar pneumonia	2
	Pulmonary tuberculosis	2
	Asthma	1
	Emphysema with chronic bronchitis	5
Alimentary diseases	Carcinoma of the stomach	2
	Visceroptosis	2
	Anorexia nervosa	1
Urinary diseases	Renal calculus	1
	Carcinoma of bladder	1

In none of the cases displaying signs and symptoms of pathological changes in the above was there a direct relation between the physical and the mental illnesses, with the possible exception of a case of lobar pneumonia and one of anorexia nervosa. In the former the early pneumonic condition present on the patient's admission was undoubtedly due to exposure, resultant upon his wandering about a mountain-side on a cold wet night in a confused state of mind. In the latter case of anorexia nervosa the patient was a female who, in spite of persistent efforts with oesophageal and rectal feeding, became progressively emaciated and died. During life she exhibited other hysterical phenomena, and was very emotional and depressed. A post-mortem examination revealed no organic cause for her persistent vomiting.

Haemopoietic System

The blood picture in the psychoses has stimulated a certain amount of interest. In the present series, however, the relation between the blood and mental conditions can only be indirect. Thus, of six cases, four suffered from severe secondary anaemia, one from simple achlorhydric anaemia, and one from acute lymphatic leukaemia. The four patients subject to secondary anaemia were all advanced schizophrenics, and it is suggested that the anaemia was consequent upon their extreme apathy and indifference to their physical existence.

Disorders of Metabolism

Nine of the total number of cases admitted were found to be suffering from some definite form of endocrine dysfunction. In view of the recent interest in the relation of the internal secretions to mental disorder (Langdon-Brown, 1936) these cases will bear close analysis. Table IV classifies the types met with.

TABLE IV

		No. of Cases
Thyrotoxicosis	Without exophthalmos	2
	With exophthalmos	1
Myxoedema		1
Diabetes		5

Symptoms of thyrotoxicosis occurred in three female subjects whose ages were 42, 36, and 35 years respectively, early exophthalmos being evident in the last-mentioned case. The clinical picture in each was typical, there being nervousness, thyroid enlargement, a warm skin, fine tremors, palpitation, tachycardia, loss of weight, irritability, and disturbed sleep. The mental picture was also common to all, outstanding features being depression, agitation, and emotional instability, with vague fears of incompetence. Here it is interesting to note that all three cases were of the voluntary class. Treatment with rest and Lugol's solution resulted in a marked simultaneous amelioration of both physical and mental symptoms. Improvement continued to such an extent that when they were discharged, at their own request, they were considered to be recovered. The author regards this relief of mental symptoms by the treatment of an apparent underlying physical disorder as of great significance, and worthy of further investigation in relation to mental disorder.

The case of myxoedema was that of a female aged 58 years who on examination was found to be of sallow complexion, lacking in energy, and slow of speech and cerebration; there was also loss of hair, dryness of skin, and a slow pulse rate. In addition her psychosis was of a chronic delusional type. There was a marked response to treatment with thyroid extract, and she is now fairly bright, energetic, and industrious, but the symptoms of the psychosis remain unaffected. It is thought, in this case, that apart from the mental retardation the physical disorder was unrelated to the mental disturbance.

Diabetes has long been recognized as being due to an impaired pancreatic function, characterized by glycosuria, hyperglycaemia, and a disturbance of carbohydrate, fat, and protein metabolism. Glycosuria and a sustained hyperglycaemia after the administration of glucose occur in certain states of emotional tension. Thus Derrien and Piéron (1923) report a marked increase of blood sugar in officers suffering from psychic disorders as a result of emotional shock, while Drury and Farran-Ridge (1925) state that the renal threshold for sugar is variable among psychotics. The latter two authors, Mann (1925), and others have demonstrated a sustained marked hyperglycaemia in these states, a fact which McCowan and Quastel (1931) have utilized to measure degrees of emotional tension objectively. These series of observations indicate some relation between emotional tension and diabetes, and it is not surprising to find that the five diabetics encountered in this series all showed various degrees of emotional instability. Treatment of the physical condition by means of diet, supplemented when indicated by suitable doses of insulin, resulted in a lowering of the emotional tension in three cases; one case remains unchanged, while the other patient died of myocardial degeneration. From the limited data at my disposal it seems reasonable to assume that mental symptoms may be associated with some chemical influence of the nature of a hormone or internal secretion, and that certain diseases of the endocrine organs may give rise to mental as well as physical upset.

Surgical Conditions

The varied forms of what one might term surgical cases are well shown by Table V.

TABLE V

	No. of Cases
Septic parotitis	1
Facial paralysis	1
Cut throats	3
Carcinoma of breast	1
Rodent ulcer	1
Inguinal hernia	2
Ventral hernia (post-operative)	1
Lumbar hernia (post-operative)	1
Dupuytren's contracture	2
Scoliosis of spine	3
Severe kyphosis of spine	1
Club foot	1
Fractured transverse processes of lumbar vertebrae	1
Acute intestinal obstruction	1

In six cases only can the physical and mental states be associated: (1) The acute septic parotitis occurred in a case of toxic-exhaustive insanity, the infection obviously being an ascending one from a dry foul condition of the mouth. (2) The case of facial paralysis occurred in a male who had attempted suicide by gunshot wound of the head. (3, 4, 5) Three cases of self-inflicted wounds of the throat were the result of acute melancholia. (6) The sixth case where one might correlate the mental and physical states was one in which a male sustained an injury to his back, *x*-ray examination revealing fractured transverse processes of the lumbar vertebrae. In this case the injury appeared to be a contributory cause to the man's state of depression.

Gynaecological Conditions

Routine examination of the pelvic organs was not carried out, except in cases exhibiting definite symptoms making such examination necessary. Thus it may be that a large number of minor gynaecological conditions have been overlooked, but nevertheless eight cases were admitted justifying the above heading, as indicated in Table VI.

TABLE VI

	No. of Cases
Puerperal fever	2
Mastitis	1
Menorrhagia	1
Severe leucorrhoea	2
Uterine prolapse	2

The two suffering from puerperal fever were obviously cases of puerperal insanity. The case of mastitis also occurred during the puerperium, but the patient's symptoms were more suggestive of the katatonic type of schizophrenia, the mastitis arising as a result of non-ability to suckle the child owing to the mental state. There did not appear to be any relation between the psychosis and pelvic disturbances in the remaining five cases.

Miscellaneous Group

Under this heading are grouped the following conditions:

TABLE VII

	No. of Cases
Severe acne vulgaris	2
Universal psoriasis	1
Mercurialism	1
Rheumatoid arthritis	1
Deaf-mutes	2
Post-encephalitic Parkinsonism	2

The cases of severe acne vulgaris occurred in epileptics who had been taking large doses of bromide prior to admission. The association appears obvious, and is further borne out by the fact that several other epileptics showed milder degrees of acne, also due in part to uncontrolled bromide therapy.

One case of universal psoriasis seems worth including in the series of physical disorders, although many other cases exhibited milder degrees of the same skin affection.

An interesting case of mercurialism occurred in a young male congenital syphilitic who, before admission, had been receiving mercurial inunction over a prolonged period. There was well-marked salivation, stomatitis, metallic smell, and offensive breath.

Rheumatoid arthritis was seen in one male suffering from severe agitated melancholia. Movement of joints was both painful and difficult, yet his extreme agitation made movement imperative—a triumph of mind over body!

The physical state of deaf-mutism was encountered in two male patients. In each the defect was congenital in origin. Both had been inmates of deaf-and-dumb institutions, where they had learnt trades and become useful members of the community. On discharge from such an institution one developed paranoid ideas, while the other became a shut-in personality leading an aimless and indifferent existence. It seems feasible to associate their physical affliction with their respective reaction types.

The physical and mental manifestations in the chronic form of encephalitis lethargica were clearly seen in two cases of Parkinsonism. Both were males, their ages 23 and 30 years, with a previous history of "sleeping sickness" at an early age.

Acetonuric Group

The occurrence of acetonuria, apart from that found associated with diabetes, in any recent admission to a mental hospital is of great interest. Fourteen out of the 164 patients whose cases are discussed here showed greater or lesser degrees of acetonuria on admission. A careful survey showed that all were in a debilitated state, with varying degrees of cachexia, exhaustion, cyanosis, furred and dry tongues, and foul stools. Their history before admission showed that they had invariably been "refusing food," were "extremely restless and agitated," or had been in a "stuporous confused state," taking but little nourishment. The inference is that all these patients were on admission suffering from a "semi-starvation state" resulting in an acidosis. Such a statement is fully corroborated by the fact that the acetonuria in all cases cleared within three to ten days following admission and treatment, the patients being more composed, taking their own nourishment or being artificially fed; the feeds contained appropriate quantities of glucose according to the severity of the case. Whilst the general symptoms resulting in the ketosis were similar, the psychosis producing the symptoms varied as illustrated in Table VIII.

TABLE VIII

Type of Psychosis	No. of Cases
Toxic-exhaustive insanity	3
Acute mania	2
Epileptic insanity	2
Agitated melancholia	1
Chronic melancholia	1
Chronic mania	1
Katatonic stupor	1
Benign stupor	1
Katatonic excitement	1
Senile dementia	1

These comments concerning the general incidence of ketosis in a variety of psychoses are of interest in view of the findings of Shaw (1920) and Thomas (1922), whose observations were limited to psychoses of the toxic and confused type. Such observations also emphasize the necessity for including an adequate supply of carbohydrate in the diet of patients who require artificial feeding, and as a general rule it has been found that the addition of about 3 oz. of glucose daily to the feed will counteract any danger of an acidosis.

Although seventeen cases of general paralysis of the insane and eight senile cases were admitted in this series, these are so essentially normal types of patient that it has not been deemed of sufficient interest to discuss them further or even to include them under the heading of abnormal physical states.

The diagnoses of the cases reviewed have when necessary been confirmed by the consulting staff of the hospital, by laboratory methods, by *x*-ray examinations, by operative findings, and, in a few, by necropsy.

Discussion

In this paper there is no desire to emphasize a "far-fetched" relationship between mental and physical disorders. The extraordinarily high incidence of physical illness among a series of recent admissions to this hospital, however, as indicated beforehand, has made necessary some analysis of the two types of illness. The facts here reported indicate that, in general, the physical and mental disorders are two separate entities, which require treatment as such. Thus if the cases here reported are reclassified as suggested in the early paragraphs, then the significance of any relation, or absence of it, between the two types of illness becomes very obvious. Such a classification is broadly given in Tables IX and X.

TABLE IX.—(*a*) *Cases in which there appears to be a Direct Relation between Mental and Physical States*

	No. of Cases
Anorexia nervosa	1
Puerperal fever	2
Arteriosclerotic dementia	9
Senile dementia	8
General paralysis of the insane	17
Post-encephalitic Parkinsonism	2
	39

Excluding those cases of general paralysis and senility, this total is much reduced—namely, fourteen.

TABLE X.—(*b*) *Cases in which there is an Apparent Association between Mental and Physical States*

	No. of Cases
Benign hypertension	2
Secondary anaemia	4
Thyrotoxicosis	3
Diabetes	3
Surgical cases	6
Mastitis	1
Acetonuria	14
Deaf-mutism	2
	35

In the remaining cases (ninety) there is no apparent connexion between the physical and the mental disease, which therefore must be considered as separate and distinct entities.

The factors responsible for the extremely large number of physical disorders encountered are not obvious. The types met with are too varied to formulate any general aetiological hypothesis to account for the high incidence. Few, if any, of the conditions met with could be explained on the grounds of previous family history: no reason can be given on epidemiological grounds. A partial explanation is that a number of the physical disorders are resultant upon mental conditions: thus patients, because they are mentally ill, neglect their physical well-being, with a consequent lowering of resistance. Another factor that does suggest itself as contributing greatly is the economic conditions of the areas from which these patients were drawn. There are insufficient data upon which to formulate a definite theory, but the fact that most of the males admitted to this hospital must be classed as permanently unemployed does suggest the possibility of malnutrition, with its consequent lowering of physical reserves with which to combat the physical strains imposed upon them as a result of their mental disorder. Evidence of malnutrition is afforded when it can be stated that the average weight on admission of the males in this series was nine and a half pounds below that of the average man. It was not possible to obtain the weights of all the females examined, but an analysis of fifty-one cases showed an under-weight of four and a quarter pounds. Average weights were calculated according to age and height, and compared with figures compiled by the Institute of Actuaries.

In a case presenting any mental abnormality the first essential is a thorough physical examination in order to discover the causal factors and if possible eliminate them. Too often it is assumed that the physical condition of a mental patient is good; thus the examination is far too brief and cursory. Hence it becomes apparent that the incidence of physical illness among the patients is a problem which every mental hospital must solve independently of and distinct from its main function, and one which it must, in respect of both resident and consultant staffs, equip itself to meet.

The value of a well-equipped laboratory dealing with the problems of bacteriology, pathology, and biochemistry is emphasized. The need for a "treatment centre," involving radiological service, operating theatre, dental department, equipment for heliotherapy, hydrotherapy, and electrotherapy, and a staff trained to deal with general as well as mental work, is well appreciated.

There is, indeed, an obvious need for a miniature general hospital, with all its numerous departments, within the organization of each mental hospital, and consequently a real necessity for a resident house-physician whose sole function would be the care of the bodily ailments of the patients. It is only when such a burden is removed from the shoulders of the resident mental medical officers that the problems of mental disorders, uncomplicated by other factors, can be fruitfully investigated.

I wish to acknowledge the keen interest taken in all the various aspects of this work by the medical superintendent, Dr. D. R. Owen, and in addition thank him for permission to report on the cases admitted to this hospital.

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The fourth International Paediatric Congress will be held in Rome on September 27, 28, 29, and 30, under the presidency of Professor Spolverini. A discussion on neuropsychic diseases in paediatrics from the clinical and social points of view will be opened by Professor Jundell (Stockholm), Professor Glanzmann (Berne), and Dr. Allen of Philadelphia; Dr. Dingwall Fordyce of Liverpool will also take part. Mineral and water metabolism during early infancy and its relationship to artificial feeding will be discussed by Professor Noah Morris (Glasgow), Professor McQuarrie (Minneapolis), Dr. Spermasky (Moscow), and Dr. Czapo (Budapest). Problems of infantile tuberculosis will be considered in relation to (*a*) the modern study of the ultra-virus, (*b*) contagiousness on the part of the infant, and (*c*) prophylaxis and therapy. Professor Dufourt (Lyons), Professor Cohen (Brussels), and Professor Valtis (Athens) will introduce the first section, Professor Wallgren (Gothenburg), Dr. Kissel (Moscow), and Dr. Capon (Liverpool) the second, and Professor Noeggerath (Freiburg), Dr. Chester Stewart (Minneapolis), and Dr. Armand-Delille (Paris) the third. Visits to the paediatric institutions in the neighbourhood and to the monuments of Ancient Rome, and a tour of Naples, Capri, and Pompeii, extending over three days and following immediately on the conclusion of the congress, have been arranged. Further information may be obtained from Dr. Leonard Findlay (Secretary of the British Committee) and details regarding railway facilities and hotel reservations from C.I.T., 75, Regent Street, London, or other travel agencies.

RUPTURE OF THE PREGNANT UTERUS FROM INDIRECT INJURY

BY

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As very few cases of rupture of the uterus from indirect injury, when advanced in pregnancy, have been recorded, it was thought worth while to report the following case.

Case Record

A Hindu primigravida aged 17 was admitted on February 20, 1937, to the Lady Hardinge Hospital, New Delhi, from a distant village. She was at full term, but had not come into labour, and the relatives were doubtful if the foetus was still alive, as the abdomen had been getting smaller since the patient had had a fall of some 12 feet from a first-floor veranda ten days previously. In other ways she was considered to have entirely recovered from the accident. The full history was not obtained till some days later; it was then said that she had lost her balance over a low parapet and fallen on her right side, being stunned for four or five minutes. She was picked up, and for the next few days stayed in bed. She complained of pain, mostly over the right loin and hip, and vomited several times, but this passed off gradually, and by the end of about five days she was able to get up and take food as usual. The bowels acted normally and she never complained of undue abdominal distension. She was seen by a doctor once, but he apparently found nothing very serious, and as the girl was recovering the relatives did not trouble to call him again. Foetal movements were thought to have been felt for three or four days after the accident, but the patient was not very sure. A blood-stained discharge was noticed four days before admission, and this had continued to a slight extent. Before this pregnancy menstruation had been regular and of the 3-4 30 day type.

CONDITION ON ADMISSION

The patient was a rather thin, slight girl with sallow complexion, and was fairly well developed for her age. Her mental condition was rather dull and she answered questions unwillingly. There was only slight anaemia. She moved about the bed easily and did not complain of any pain. The tongue was moderately coated; temperature 98.4° F., pulse 88, respirations 20. There were signs of bronchitis in both lungs, especially at the bases, but no complaint of cough was made.

The abdomen was enlarged with what appeared to be a full-term pregnancy in the left occipito-anterior position, with the head just over the brim, but no foetal movements could be detected and no heart sound was heard. No uterine contractions were felt. There was no abnormal distension or tenderness in any part of the abdomen.

On vaginal examination the os was seen to be closed and the cervix not taken up, and the presenting head could be palpated high up in the brim. The pelvis appeared quite normal in size. There was a little blood-stained discharge.

PROGRESS OF THE CASE

As there was no suspicion of ruptured uterus at that time, medical induction of labour with castor oil, quinine, and enema was tried. Two days later there were no pains and only a slight show, so she was re-examined, and as the cervix was still not taken up and a piece of membrane was felt protruding from it a laminaria tent was introduced and the vagina packed with gauze soaked in acriflavine and glycerin. The temperature was now normal and the pulse rate not above 90. The next day the pack and tent were removed and a douche given, and as the head bones of the macerated foetus could be just felt above the internal os three tents were introduced into the cervical canal and another vaginal pack inserted. The patient's general condition was unaltered and she still had no pains, but the pulse rate had risen to 98. The following morning—that is, the 24th—she was decidedly worse, though it was reported that she had had a fairly good night. For the first time there was some fullness and resistance at the sides and upper part of the abdomen, and she seemed anxious and nervous, though she would not acknowledge that she had any pain. The foetus was apparently in the same position. The pulse had risen from 116 at 6 a.m. to 148 at 10 a.m., and was very poor in volume; the temperature was 101°. The vaginal pack and tents were removed and, after douching, a finger was easily introduced through the cervix, but now the lower uterine segment was found empty except for the extreme edge of the placenta. Laparotomy was decided on, as evidently the foetus had been at least partially displaced from the uterus by the tents. On opening the abdomen by a median subumbilical incision the first thing encountered was the very macerated foetus lying free among the intestines, with the placenta low down on the left in front; the edge was still attached just inside the uterus, which was small, had a large gaping transverse tear right across the fundus, and had retracted and involuted in the shape of a cup. There was a little brownish free fluid in the peritoneal cavity but no sign of recent bleeding or general peritonitis; a small amount of lymph was present, however, round the pelvis, and the anterior part of the uterus was adherent to the bladder. As the patient's condition under the anaesthetic was very poor, the foetus and placenta were removed and the tear hastily stitched up with catgut and the wound closed after providing for drainage at the lower end. She was too ill to undergo hysterectomy.

After the operation her condition gave a good deal of anxiety as she developed pleurisy, followed by pneumonia, first at the base of the left lung and then in the corresponding position on the right side, and the signs persisted, though she complained very little of her chest. At first there was no abdominal distension and the wound seemed to be healing normally, but at the end of a week the edges began to fall apart, and later the whole wound gaped widely, as if the patient's powers of healing were at a minimum. She then began to show signs of partial intestinal obstruction, with vomiting on and off, but only a little distension. She seemed too ill to withstand another abdominal operation, especially as it was doubtful if the stitches would take. Another factor which had to be considered was that her relatives were ignorant peasants who would probably not only have refused to permit the operation if it had been suggested, but might have removed her promptly from the hospital and left her without medical aid and any hope of recovery. She was kept on rectal salines, which were retained well, and was given very little by the mouth except glucose water and fruit juice. A faecal fistula burst at the lower end of the wound on the eighteenth day after operation, and in two or three days she began to improve. The fistula healed spontaneously after eight days; her appetite then returned and she started to gain weight. The lungs were a long time clearing up, and did not become normal for quite another month. The abdominal wound also took a very long time to heal, but by May 11 the granulating area was only the size of a pea and the patient was discharged a few days later. By that time her general condition was good; her mental condition was quite bright, and she looked years younger than on admission.

The last vaginal examination was made on May 4, when the uterus was felt to be in good position and fairly normal in size and shape; the cervix was small and closed and the fornices were clear, but there appeared to be some adhesions between the fundus and the lower end of the abdominal wound.

Comments

On looking up the literature on uterine rupture one finds that from time to time cases due to direct injury, apart from labour and attempts at criminal abortion, have been recorded as well as a fair number of cases of so-called "spontaneous rupture," excluding those due to the giving

way of Caesarean and other scars. One can, however, find very few cases following severe indirect injury, although in some of the spontaneous cases a history of slight trauma or strain was recorded. DeLee (1933) states that only under the most violent indirect injury will a healthy uterus tear. According to the review by Kane (1923) the predisposing cause in multigravidae, apart from a clear history of previous uterine trauma or disease, appears to be thinning or hyaline degeneration of the uterine wall left from previous pregnancies, but in primigravidae some other reason must be looked for. It is suggested that some degree of infantilism may be present in certain cases that have no gross abnormality such as a poorly developed uterine cornu; but that is not very likely, as most patients in this class are sterile and menstruate scantily if at all regularly. In 1926 Riddell collected twenty reported cases of rupture during pregnancy; and among these no fewer than nine patients had had previous uterine disease and six had been subjected to instrumental intervention at some distant date, and only three were primigravidae. One-third of the total cases had terminated before the sixth month. In the present case there was no predisposing cause, as the patient had been free of uterine disease, and though she was rather young she had menstruated regularly for at least one or two years before conception, so it was unlikely her uterus was underdeveloped. In certain of the reported cases, such as that of Reeder and Moore (1935), the primary injury seemed to have been sufficient to cause a haematoma in the uterine muscle, and the onset of labour pains shortly afterwards completed the rupture and brought on acute symptoms of internal haemorrhage with shock. In this case, however, there was no history of labour pains, and so it must be concluded that the fall itself was the cause of the complete tear.

The classical clinical signs and symptoms of rupture of the uterus—that is, haemorrhage, external or internal, shock, and those of peritonitis following the death of the child—were conspicuous by their absence, though the patient had vomited, and had experienced enough discomfort to keep her in bed for a few days. In some of the published cases—for example, those of DeLee (1904), Green-Armytage (1913), and Gordon Ley (1920)—haemorrhage was very great, and in that of Green-Armytage led to death before there was even time for laparotomy. By the time the present patient came to hospital she had had only a small amount of toxaemia, and not until the tents had caused slight displacement of the head from where it had been resting on the widely open uterus did more acute symptoms arise. By itself the macerated foetus lying among the intestines was not sufficient to produce any general peritoneal irritation. There was also no evidence that she had had any marked internal haemorrhage, although the site of the tear, transversely across the fundus from one corner to the other, was almost exactly that shown in the sketch of Green-Armytage's specimen.

When treatment was considered there was the choice of either doing subtotal hysterectomy, which would have been preferable if the patient had been older, or of repairing the tear, keeping in mind, of course, the possibility of further pregnancy and the likelihood of the scar giving way again in the later months. In Gordon Ley's case of repair the patient did become pregnant again within a short time, and was successfully delivered normally at full term without any fresh uterine damage; but the risk is considerable, especially if the patient lives far from adequate medical aid. In the present case the uterine scar was not likely to be very satisfactory, as there was not time to trim the edges and stitch the tear in the usual layers owing to the patient's very poor condition on the table. She was only 17, and had not long been married, and though sterilization might have been performed her life would then have been miserable, owing to the social customs in her part of the country. She will therefore need very close attention should any sign of pregnancy again occur.

Difficulty in Diagnosis

The most difficult point in these cases is the diagnosis before operation. If there is much external bleeding without signs of peritoneal reaction accidental haemorrhage or placenta praevia is suggested, or if it occurs in the earlier months of pregnancy and the signs are mainly those of intra-abdominal haemorrhage, then a ruptured ectopic gestation or rupture of a poorly developed uterine horn may be the cause. Only in those cases in which the foetus can be felt without difficulty or moved under the abdominal wall is diagnosis easy. In this case, when the patient showed no signs of coming into labour after medical induction, and when no contractions of the uterine wall over the foetus could be made out clearly, the diagnosis of ruptured uterus was considered, but was thought most unlikely as she was a primigravida with tight abdominal walls, and the position of the foetus had remained as in an ordinary left occipito-anterior presentation, and she had seemed so well for the first three days in hospital. It was, however, the fact that the head of the foetus could be palpated easily through the fornices and, when the cervix was sufficiently dilated, through the os also, that had made one think such a diagnosis quite impossible.

Summary

1. A case of complete rupture of the uterus from indirect injury in a primigravida of 17 is reported.

2. Recovery occurred though operation was not performed until fourteen days after the injury.

3. Many of the classical signs and symptoms were absent.

4. Certain points in the aetiology, symptoms and signs, treatment, and diagnosis are considered.

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C. J. W. Bisdom (*Maandschr. Kindergeneesk.*, May, 1937, p. 332) records two cases of alcohol and nicotine intoxication in infants. The first was a male infant, aged 8 days, the first child of a mother, aged 17, who had drunk a whole bottle of port (250 grammes) in the course of twenty-four hours. The symptoms consisted in a state of deep sleep from which the child could not be wakened for twenty-four hours, after which he became normal again. Alcohol was found to be present both in the mother's and infant's blood. The second case was a breast-fed infant, aged 6 weeks, the child of very nervous parents. The mother had been in the habit of smoking twenty cigarettes a day. The child's symptoms were restlessness, vomiting, diarrhoea, rapid pulse, and circulatory disturbances. Nicotine was found in the mother's milk. Symptomatic treatment was applied and the infant recovered.

EPIDEMIC OF PARATYPHOID B FEVER IN LIVERPOOL AND DISTRICT

BY

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On January 4, 1937, was notified the first of a series of cases of paratyphoid B fever in an outbreak which aggregated 132 primary cases before it was ended, of which 107 cases were in Liverpool, sixteen in the adjoining town of Bootle, seven in the rural districts surrounding Liverpool and Bootle, and two in North Wales. The quick succession of notifications—there were seventeen in the first week and thirty-three in the second week—and the widespread distribution in the city led to an immediate examination of samples of water from both Vyrnwy and Rivington supplies. The results were entirely negative, as indeed had been the results of the frequent routine bacteriological water examinations during the previous two months.

As the cases were notified they were charted on a graph according to their date of onset and entered on a map in accordance with the site of residence of the patients. Two features of the outbreak were quickly discerned—namely, that the majority of the cases had their date of onset at the end of December and beginning of January, and that the south end of Liverpool was escaping completely. One case notified from the south of Liverpool which appeared to be an exception proved to be one of pneumonia.

The history given by the majority of the patients showed that they obtained their milk and/or bread and/or butter, and sometimes other foodstuffs, from the same firm, hereinafter called firm A. Inquiries revealed that firm A traded through many retail shops over an area corresponding with that covered by the outbreak, and that the south end of Liverpool was supplied by an independent branch of the same firm, obtaining its food supplies from different sources. Further inquiry revealed that although some of the patients had eaten butter made by firm A, most of the butter they had purchased was of Empire or foreign origin, and had been delivered to each retail shop in the kegs in which it had been imported, there to be opened and sold in quantities to meet customers' requirements. Attention was therefore concentrated on milk and bread.

Firm A prepares pasteurized and sterilized milk, and sells approximately 8,500 gallons of the former and 1,000 gallons of the latter daily, approximately one-fifth of the milk consumed daily in Liverpool and Bootle. Out of 123 patients from whom a food history was obtained seventy-five consumed milk from this source. The pasteurizing plant is one of the latest design, and is under the regular supervision of the staff of the Health Department because this firm is one approved for the supply of milk to school children under the Milk Marketing Board's scheme. The processing and bottling arrangements are such that the milk is not touched by hand subsequent to pasteurization. It appeared, therefore, to be unlikely that the outbreak was attributable to this particular milk supply. Confirmatory support for this view was, first, that the children affected were not those who were attending the schools supplied by firm A except in a few instances, and, secondly, that the outbreak ought to have been a much greater one if it had been due to the infection of milk which was so high a proportion of the total milk consumed in the city. For these reasons attention was concentrated on the bread baked by this firm. Perhaps it is needless to add that in spite of this conclusion exhaustive inquiries were made into the recent health of the dairy employees, and that steps of a general nature were taken, such as additional care of the hands of the staff and so on.

Source of the Infection

The bakery is a very large one and is exceedingly well conducted. Out of 123 patients from whom a food history was obtained seventy-six (62 per cent.) regularly consumed bread from this source. The output is approximately a quarter of a million loaves a week. As this output is but a small fraction of the total number of loaves produced in Liverpool, the very high proportion of patients who ate this bread is significant. Both separated milk and water are used in baking, and although it was thought to be unlikely that anything added to the loaf before baking was the cause of the epidemic, inquiries were made into the sources of both. The water was city water stored in a tank. An examination revealed nothing of significance. The separated milk was efficiently pasteurized before use and was consequently above suspicion.

Observations were made during the night while the staff were carrying out their various duties, and it was noted that twenty employees were engaged in handling loaves after they had cooled, or were touching trays, etc., with which cold loaves would subsequently be brought into contact. It was decided to examine the blood of each of these twenty employees. The blood of five of them revealed the presence of agglutinins. Two had been inoculated with T.A.B. in the Army and in the Naval Reserve respectively, and their blood revealed the agglutinins usually found after inoculation. The blood of two others was positive to *Bact. typhosum* (H) 1 in 20. Lastly a male employee (G. E. T., aged 20), who had not been inoculated and who gave no history of illness like typhoid, either recent or remote, yielded a blood which gave a positive agglutination 1 in 20 to *Bact. paratyphosum* B (H), but was negative 1 in 20 to *Bact. typhosum* (H) and (O), and *Bact. paratyphosum* B (O), *Bact. paratyphosum* A (H), and the Salmonella group. This man was admitted to hospital under observation on February 9. He proved to be a carrier of *Bact. paratyphosum* B, the organism being recovered from both the faeces and the urine on the following occasions:

February	9	F−	U−
„	10	F−	U−
„	11 (*a*)	F−	U− (*b*) F− U−
„	12 (*a*)	F−	U− (*b*) F− U−
„	17	F−	U−
„	18	F−	U−
„	19	F−	U−
„	20	F−	U−
„	22	F−	U−
„	23	F−	U−
„	24	F−	U−
March	1	F−	U−
„	8	F−	U−
„	15	F−	U−
„	18	F−	U−
„	22	F−	U−

(*a*) and (*b*) refer to separate samples on the same day.

The patient was discharged from hospital on March 27.

This carrier had been employed by the firm for two and a half years, for eighteen months of which time he had been handling bread after baking. Except for four days' absence with tonsillitis two years ago there was no illness which prevented him from working. He had had measles when a child, and the only other illness he could remember

was an operation on his elbow in May, 1933. Inquiries at the hospital where the operation was performed revealed that he was admitted for the investigation of a bone condition which was puzzling, looking neither like malignant disease nor ordinary osteomyelitis. The operation revealed a chronic osteitis of unknown origin accompanied by pus in which no organisms were found. In the opinion of the surgeon the condition was not incompatible with the belief that the abscess was of typhoid or paratyphoid origin.

The carrier had lived all his life with his father and mother. He is the eldest of six children, of whom the youngest is three years old. No member of the family gives any history of having suffered from typhoid fever or any typhoid-like illness.

Chart of Cases

The following chart shows the daily notification of 123 cases in Liverpool and Bootle in which the diagnosis was subsequently verified, the dates of onset of the 132 cases which occurred altogether, and a graphic representation of the dates of infection on the assumption that the average incubation period was twelve days. There appears to be a consensus of opinion that the average incubation period of paratyphoid fever is shorter than that of typhoid, though the variations in the incubation period of the former may be greater than those in the latter. For our present purpose the assumption of an average incubation period of twelve days is not unreasonable.

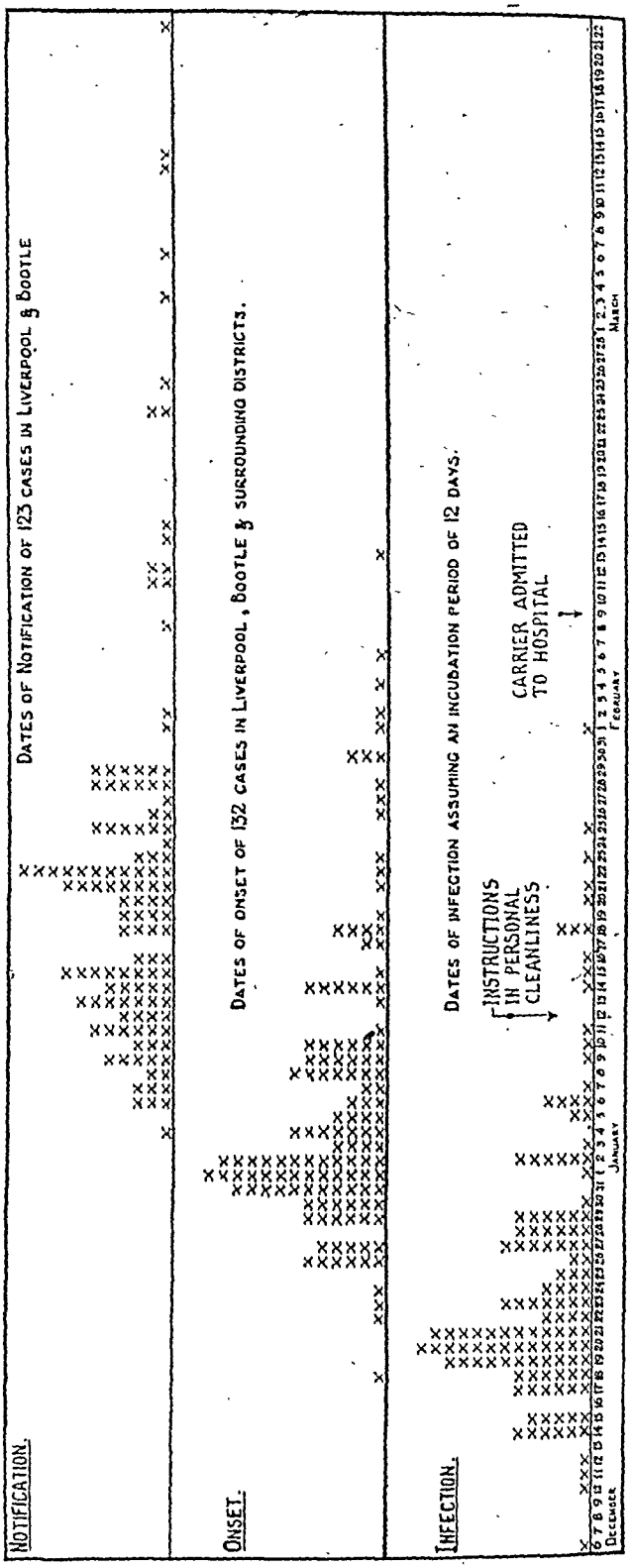
It will be observed that there were no cases with a date of infection subsequent to the admission of the carrier to hospital. At the same time it is noteworthy that the epidemic was waning for a month before his admission. There were 118 cases infected prior to January 8, and only fourteen between that date and February 9, when the carrier was admitted to hospital. This downward trend of the cases after January 8 may be accounted for partly by the increased precautions which were taken by the bakery staff in washing their hands after visiting the lavatory. It was on January 12 that special instructions were given to the staffs of both the dairy and the bakery in regard to this matter. If this carrier was in fact the cause of this outbreak, contaminating the surface of loaves with infection on his hands, it appears to be necessary to assume that the degree of contamination diminished with improvements in personal cleanliness; it may also be necessary to assume that the excretion of organisms in the urine and faeces was intermittent and variable in amount, an assumption not unreasonable in view of the intermittency of excretion during his sojourn in hospital. Unfortunately no attempt was made to estimate the number of the organisms he was excreting. There is a record, however, that a faecal specimen on February 11 yielded no organisms on direct plating, but that they were found after enrichment. The number of organisms in this specimen must therefore have been small.

Another feature of the chart is that 111 cases had been infected (assuming an incubation period of twelve days) before the first notification was received (January 4), leaving only twenty-one cases to be infected subsequently. The infection had reached the great majority of the patients before its existence was suspected.

The age and sex distribution of the cases is as follows:

Age ..	Under 1	1+	5+	10+	20+	30+	40+	50+	70+	Totals	
Males..	2	8	18	17	11	4	5	1	1	67	132
Females	1	6	10	20	11	6	6	5	0	65	

The even distribution between males and females, not only in the totals but also at different ages, suggests infected food which is consumed by all, irrespective of age and sex. Bread as the infected food is not incompatible with this. Of the three children under 1 year who were regarded as cases, two were doubtful. The one in which the diagnosis was confirmed by finding the causal organism was a patient whose parents had given it crusts to chew from bread derived from firm A.



Value of Faecal Cultures in Diagnosis

In a paper to be published shortly by Professor H. D. Wright, the city bacteriologist, and one of us (V. G.), detailed reference is made to the value in diagnosis of faecal cultures at different stages of the disease. Out of 124 cases in respect of which there was information on this point, 83 per cent. of the faecal specimens submitted for examination during the first week of illness were

positive. The corresponding figures for the second, third, and fourth weeks of illness were that 94.2 per cent., 92 per cent., and 87.5 per cent. respectively of patients had positive stools. In the case of patients in their fifth week of illness all the faecal specimens were positive. The corresponding figures for the sixth and seventh weeks were 75 per cent. and 77.7 per cent. respectively. The isolation of the causal organism from the stools is of great value in diagnosis even so early in the illness as the first week, and even so late as the seventh week there is a good chance of isolating the *Bact. paratyphosum* B from the first specimen of faeces submitted. Another interesting feature to which attention is called in the paper alluded to is the rate of disappearance of *Bact. paratyphosum* B from the faeces. Fifty per cent. of the patients presented positive faeces in the seventh week of illness and 20 per cent. were still excreting the organism in the ninth week.

An attempt was made to determine the survival of *Bact. paratyphosum* B on bread crusts. Three experiments were done with the strain isolated from the carrier. A slice half a centimetre thick was cut off the end of a fresh paper-wrapped loaf. This was cut into small rectangular pieces 1/2 × 1 cm., which were placed in dry sterile Petri dishes with the crust uppermost. Each crust surface was smeared with a loopful of a saline suspension containing a known number of organisms from an agar culture. The fluid disappeared into the substance of the crust remarkably quickly. The Petri dishes containing the inoculated crusts well separated from one another were stored in a dark cupboard at room temperature. At various intervals after inoculation a piece was removed from the dish and dropped into a tube of tetrathionate broth, any growth subsequently being fully identified serologically. With an inoculum of four million organisms *Bact. paratyphosum* B was recovered from the crust on the seventeenth day but not on the twenty-second or twenty-third day. When only 120 organisms were employed recovery was possible on the sixth day but not on the seventh or twelfth day. In another experiment with six million organisms from a broth culture the crusts still yielded cultures on the thirty-third day, by which time the material under examination was exhausted. It was not possible to be satisfied that any actual multiplication of the organisms occurred in the crust. It is evident that they can remain alive for a considerable time.

Tests to determine the similarity of organisms from patients in the epidemic were undertaken. M. Kristensen and K. Bojlén (1929) have proposed to differentiate five groups of *Bact. paratyphosum B* according to the rate of fermentation of rhamnose, the fermentation of inosite, and behaviour in the Bitter test (1926), which is also dependent on rhamnose fermentation. These tests were made on ninety-five strains from forty-eight cases (including the carrier). All strains fell into the same group, Kristensen and Bojlén's group R_1I_1, the features of which are that inosite is readily fermented, rhamnose slowly, and the Bitter test is negative. Eight other strains from four cases not associated with the epidemic fell into the same group.

Course of the Illness

Eighty-seven cases were treated in the Fazakerley Fever Hospital, and the following observations are from notes supplied by Dr. A. E. Hodgson, the medical superintendent. With a few exceptions the course of illness was uneventful and free from severe symptoms. Forty-one patients (47 per cent.) exhibited a rash and two had intestinal haemorrhage. There was no example of perforation of the intestine. It was noteworthy that in children the onset was abrupt, with abdominal symptoms simulating an "acute abdomen." In three cases the carrier state persisted for a long time. In one case (J. P., female, aged 57 years) the date of onset was December 26, 1936, and organisms were isolated from the faeces so late as June 19, 1937. This patient was still in hospital on June 21. The second case (H. W., female, aged 38 years), with date of onset January 3, 1937, was a carrier until May 26. The third case (H. N., female, aged 42 years), with date of onset January 9, developed cholecystitis. The gall-bladder was drained and *Bact. paratyphosum* B was isolated (June 5) from the pus.

The part played in diagnosis by bacteriological examination was a prominent one. Out of the 123 cases occurring in Liverpool and Bootle the causal organism was recovered from 111 patients, these specimens being examined in the city laboratory in 109 instances. Of the other twelve cases the diagnosis was confirmed by serological examination in nine instances. In three cases only was the diagnosis made on clinical grounds alone.

There were eleven deaths among the 123 cases in Liverpool and Bootle, a fatality rate of 9 per cent.

Summary

1. An outbreak of paratyphoid B fever occurred in Liverpool and Bootle at the end of 1936 and beginning of 1937, with 123 cases and eleven deaths. An additional nine cases in rural districts were also considered to be connected with this outbreak.

2. The circumstances of the rise and decline of the epidemic were not incompatible with the belief that it was due to the infection of loaves of bread handled by a carrier of *Bact. paratyphosum* B who was discovered in a bakery from which was derived the bread consumed by 62 per cent. of the patients.

3. The isolation of the causal organism from the stools of patients proved to be a great aid to diagnosis so early in the illness as the first week. Even as late as the seventh week there is a good chance of isolating the organism.

4. Fifty per cent. of the patients presented positive stools in the seventh week of illness, and 20 per cent. were still excreting the organism in the ninth week.

5. Ninety-five strains of *Bact. paratyphosum* B isolated from forty-eight patients all fell within Kristensen and Bojlén's group R_1I_1.

6. The survival of *Bact. paratyphosum* B on bread crusts was established. A heavy inoculum (6 million organisms) survived at least thirty-three days, an inoculum of 4 million organisms survived seventeen days, and a light dosage of 120 organisms was recovered on the sixth day.

7. With few exceptions patients made uneventful recoveries. Forty-seven per cent. exhibited a rash. In children the onset was abrupt with abdominal symptoms simulating an "acute abdomen." Three cases, all adult females, persisted as carriers for five months or more.

Acknowledgements are due to the city bacteriologist (Professor H. D. Wright) for the bacteriological information contained in this report: to Dr. Hodgson, the medical superintendent of the Fazakerley Isolation Hospital, for clinical details; and to the medical officers of health of Bootle, Waterloo and Seaforth, Whiston, West Lancashire Rural District, Great Crosby, Litherland, Huyton, and the Caernarvonshire Combined Sanitary Districts for information relating to cases which occurred in their districts.

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G. W. Ronaldson (*Brit. J. Child. Dis.*, April–June, 1937, p. 99) records two personal cases of morbilli bullosi, one of which was a girl, aged 4, and the other a female infant, aged 10 months, who died. He classifies the reported cases of bullous measles as follows: (1) pemphigus with a morbilliform eruption; (2) true bullous measles—that is, cases of measles with anomalous elements; and (3) the association of measles and pemphigus.

Clinical and Scientific Proceedings

AETIOLOGY AND TREATMENT OF DUODENAL ULCERATION

At a meeting of the Fife Branch of the British Medical Association Mr. J. J. ROBB gave an address on "The Aetiology and Treatment of Duodenal Ulceration."

Discussing the historical aspect of treatment of this condition Mr. Robb said we had passed from a position of comparative satisfaction, based on successful cases without due regard to the number of failures, to a more critical attitude, owing to the persistence of failures and lack of definite knowledge as to the cause of ulceration. When he began research into this subject he found that the study of failures gave little help, and that it was only by making an accurate study of the normal that some understanding of the abnormal was ultimately reached. His investigation of gastro-intestinal function was made by *x* rays, fluorescent screen, and barium meals. Radiographs were only useful where they showed an actual abnormality of organic nature.

Although the stomach was an extremely sensitive and powerful organ, responding to the mental state of the patient, to satisfaction and dissatisfaction, by changing its position, rising or falling, it was quite clear that a resting normal did exist. With the patient erect the normal stomach swept downwards from the cardia until the greater curvature just touched a line joining the iliac crests. From there it rose steeply to a fixed position at the pylorus. This was the normal or sthenic stomach, and permanent departures from this position were abnormal, either above—hypersthenic—or below—hyposthenic.

The lecturer then reviewed normal gastro-intestinal function, showing that hypersecretion was exaggerated normal, whereas hyposecretion was abnormal and the result of failing function. The nerve supply to the stomach and intestines, he continued, was by two groups, both autonomic: (1) the intrinsic group consisting of the plexuses of Meissner and Auerbach; and (2) the extrinsic group formed by the vagi, the coeliac, and the presacral plexuses. The intrinsic group controlled all normal bowel function, and, apart from the region of the pyloric sphincter, were motor throughout. The extrinsic group, apart from the vagi, exercised control over intrinsic function, either locally or throughout the whole tract, evidence of this group's activity being shown by dilatation of bowel and hypertonicity of sphincter. The exact function of the vagi was uncertain, but the abdominal sympathetic system and the vagi did not function in sympathy with each other. Stomach function appeared to continue in oblivion to changed function in intestinal areas.

Aetiology

Cases exhibiting the well-known symptoms constituting the duodenal syndrome might or might not show actual ulceration. Nevertheless, clinically and therapeutically they were inseparable, and should be placed in one group with ulcer as an additional sign. Examination of these cases by investigation of bowel function by barium screening showed a definite distortion, although the actual appearance of this distortion might be masked by the mental state of the patient at the time or even by the presence of the barium changing the visceral state. Patience on the part of the investigator and the complete confidence of the patient were required. In the early case departure from the normal showed itself by overactivity and hypertonicity of the stomach indicated by the raising of that organ far above its normal active level. In the more advanced case this overactivated stomach began to tire and dilate; it sagged down, and might ultimately lie low in the pelvis. Maximum irritability and overactivity occurred at from one-half to one and a half hours after ingestion of food, depending on the nature of the food ingested, the power of the stomach musculature, and the degree of hypertonicity in the pyloric sphincter.

The lack of opening response at the pylorus showed that the normal chemico-physical basis for the stomach evacuation reflex had vanished and other reflexes had taken control of the pylorus. This fact was not appreciated by the stomach, which intensified its efforts to evacuate its contents, and with a hypertrophied muscle these efforts were remarkably successful, a forced evacuation of contents taking place through a tense pyloric sphincter at a rate above normal. These contents, ill digested and saturated with an overabundance of free acid, were driven through the central and weakest part of a hypertonic and fixed sphincter and impinged forcibly on one area of duodenum, an area, therefore, which showed, sooner or later, a chronic traumatic inflammation with its sequelae of congestion, fibrosis, central anaemia and degeneration, and the formation of ulcer. Further signs of sympathetic agitation appeared along the bowel—duodenal stasis, delay at duodenal-jejunal flexure and at the ileo-caecal valve. In the early case the colon was spastic, later flaccid, dilated, and dropped.

Abdominal Sympathetic Activation

These departures from the normal functioning of stomach and bowel, showing the origin of a duodenal ulcer, were evidence of a syndrome of sympathetic activation. Sympathetic activity was always protective and sought to obtain immobilization and rest. Therefore the purpose of this sympathetic interference or syndrome was to slow down bowel movement and transport. The stomach only remained oblivious to this demand for rest as it held the key to tissue life and must function to deliver sustenance to the regions of digestion and absorption. This effort on the part of the stomach and counter-effort by the abdominal sympathetic resulted in the maintenance of a fine balance between the danger to life from some lesion and the danger of insufficient nutrition. We had now ceased to regard the ulcer as a primary disease or the stomach as being at fault. The real disease lay in the activated abdominal sympathetic system, and the next step was to find out the cause of this activation.

Bearing in mind, Mr. Robb continued, that the ultimate function of the autonomic system was the preservation of life, we could understand the action of the abdominal sympathetic endeavouring to protect the body against some dangerous lesion. This action may be excited centrally or through peritoneal irritation. Here we regarded the peritoneum and serous linings generally as forming, in addition to other purposes, a third element in the system of defence against disease by awakening the appropriate sympathetic system, thus bringing about attempted tissue immobilization leading to disturbed function.

The causes were classified as primary and secondary: the primary group, where the cause was central or psychological; the secondary group, including all tissue lesions which might affect the peritoneum. It was important that all secondary causes should be excluded before the primary group was considered. This primary group included all psychological disturbances leading to repression or dissatisfaction or psychophysical conflict in relation to environment or employment. The discovery of the cause did not mean cure, as established ways of life could not be changed radically. Nevertheless, a holiday or isolation in a nursing home might effect a complete, if temporary, cure without other treatment.

The secondary group were divided into intra- and extra-abdominal. The commonest intra-abdominal cause was chronic appendicitis. Other causes were tuberculous adenitis, peritoneal and omental bands, and, in the female, chronic inflammatory states in the pelvic organs. Chronic cholecystitis only acted as a cause when the inflammatory process involved the peritoneal covering. Chronic diverticulitis of the colon was probably a cause in one case. Extra-abdominal causes included any lesion producing a chronic toxaemia or bacteriaemia.

Treatment

Treatment might be symptomatic or direct. Symptomatic treatment was easier and was the method which so far had received most attention, but the end-results were not satisfactory. Direct treatment was more difficult for doctor and patient, but the result was definitely better. If this interpretation of the aetiology was correct, Mr. Robb continued, then we had to think of duodenal ulcer as a late symptom in the disease. Therefore, if we could begin treatment early, when there was probably only a little dyspepsia and constipation, a duodenal ulcer would not appear. The logical sequence of treatment would appear to be first to remove the cause of the sympathetic upset within the abdomen, and, secondly, to correct disordered bowel function. As the abdominal sympathetics were in health quiescent but once activated became in time abnormally active, removal of the cause did not always cure, and in late cases especially further measures were required to produce normal quiescence.

In doing this the stomach could be disregarded. The chief difficulty was the pyloric spasm and the spasm of the junctional sphincters, and, secondly, imperfect motor function of the intestines due to sympathetic interference. The sympathetic stimuli must be allayed or cut out either by atropine, over a period of six months to two years, or by bromide. Atropine, owing to the production of symptoms of poisoning and the discomfort caused by eye symptoms, was inferior for this purpose to bromide, which, in small doses—5 grains thrice daily—was found by screen tests to produce the necessary results provided a low chloride diet was taken at the same time. With this small dose there was no risk of bromide poisoning. The next step was gently to encourage the bowel to get back to its natural rhythm. The use of strong purgatives was avoided, as overactivated peristalsis reawakened the sympathetic syndrome in spite of bromide action. The reaction of each individual case had to be carefully studied. Medicine and re-education were both required, and the most effective drug for this purpose was mag. carb. pond., 20 grains thrice daily. Finally, to aid in stabilizing the sympathetic system, the lecturer gave calcium lactate or carbonate in doses of 6 to 8 grains daily. As regards diet, any foods which had a violent forward peristaltic action should be avoided, and, if ulcer is present, nothing should be given that was hard or tough to traumatize and prevent healing. Therefore, red meats or any very highly flavoured dish should be avoided. Hunger should also be avoided, so that feeding should be at frequent intervals.

Scope of Surgical Treatment

The scope of surgery in treatment, briefly, included those cases in which definite hypofunction had been established and in which medical measures, therefore, could not alone bring the stomach back to normal. Its purpose was to make the course of digestion fit in with the abnormal conditions produced by hypofunction. A gastrojejunostomy provided an efficient drain from the lowest part of the stomach, and was the best procedure. Where stomach muscle failure was early and pyloric function was unimpaired but a large and active duodenal ulcer was present, direct anastomosis of the stomach to the second part of the duodenum seemed most satisfactory. Where stomach and duodenum both showed signs of muscle failure, gastrojejunostomy and duodenojejunostomy were each required.

The only justification for surgical treatment was muscle failure. Success following operative treatment might be deceptive, as shock of operation alone might allay sympathetic activity from two months to two years. Therefore, medical treatment, as already indicated, should always be continued after operation. No therapy could successfully deal with cases of duodenal ulceration unless it took into account the reason why the ulceration was there, and the fineness of the mechanism that regulated all gastro-intestinal movement and function.

Clinical Memoranda

Typing of C. Diphtheriae in Connexion with the Clinical Course of Diphtheria Infection*

During 1934 and 1935 the type of bacillus present in ninety-one patients and ten carriers was investigated. The accompanying table shows the relation of the various types to the severity of the disease. The "gravis" type was not predominantly found in severe cases, whereas the percentage of "mitis" was high.

Period	Clinical Course	Total No. of Cases	Gravis	Intermedius	Mitis	Atypical
1934 and 1935	Lethal	10	1	2	6	1
	Very malignant	12	1	7	4	—
	Medium malignancy	26	2	9	15	—
	Mild	43	1	10	30	2
	Carriers	10	1	—	9	—

Budakoff, Golinevitch, Undrevitch, and Jer-Osipora (1936) could not find any constant relation between the severity of infection and the type of strain present, though they did note that the "gravis" type occurred more often in fatal cases of illness.

In the special observation of twenty patients treated with serum we gained the impression that the majority of those who showed no improvement after the administration of antitoxin yielded the "mitis" type. Among the whole of the strains we studied twelve (one "gravis," three "intermediate," and eight "mitis") were avirulent when tested on guinea-pigs according to the Eagleton and Baxter method.

We do not consider our results at variance with those described by Anderson and other authors, for a final conclusion can be reached only after investigation on very large numbers of cases of diphtheria observed during different epidemic phases of diphtheria epidemics. Our work indicated that at a period when little diphtheria occurred, and most of it mild, the "mitis" type of bacillus was most often met with, whereas during a serious epidemic the "gravis" and "intermediate" types became more frequent.

SUMMARY

1. Cultures from ninety-one patients and ten carriers yielded 63 per cent. "mitis," 28 per cent. "intermediate," and 6 per cent. "gravis"; 3 per cent. of the strains were atypical.

2. We could not find any close relation between the severity of the attack and any special type of bacillus.

3. Twelve strains avirulent for guinea-pigs were isolated.

4. In non-epidemic periods the "mitis" type is found most frequently.

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REFERENCE

Budakoff, Golinevitch, Undrevitch, and Jer-Osipora (1936). *The Problems of Epidemiology and Immunology* (Russian), 2, 5.

* An abstract of a paper submitted by the authors.

Spontaneous Pneumothorax Occurring with the Onset of Labour and Resulting in Sudden Death

The following case seems to be of sufficient interest to merit being placed on record.

CASE HISTORY

Mrs. B., aged 30, primipara, was admitted to the Leeds Maternity Hospital on January 15, 1937, for investigation following a severe attack of abdominal pain. The history was one of very good health until a febrile illness in December, 1936, since when she had complained of cough, malaise, loss of weight, and intermittent attacks of left-sided abdominal pain. Her general condition was poor, and there was slight instability of the temperature and pulse. Physical examination, together with a skiagram of the chest, revealed bilateral apical tuberculosis with an extensive effusion at the left base. She was about twenty-four weeks pregnant.

The patient was transferred to Killingbeck Sanatorium on February 17, where she remained until term. From the time of admission she improved rapidly and steadily. The cough soon disappeared, and never at any time did she have sputum. After a month of sanatorium treatment she was allowed out of bed, increasing her time to a maximum of four hours daily. On this latter grade her temperature and pulse kept within normal limits Pregnancy was normal in every way, except that the foetal head remained above the pelvic brim until term. This was attributed to an occipito-posterior position as there was no disproportion. At term it was thought advisable to induce labour, and she was accordingly returned to the Leeds Maternity Hospital on May 4, 1937. On the day of transfer her general condition was very good indeed. Physical examination revealed an impaired note with a few crepitations at each apex, and dullness with diminished air entry at the left base.

A medical induction was given on May 4, and the head became fixed though labour did not commence. The induction was repeated on May 6, and the patient started to have slight pains at 7.30 a.m. on May 7. She was then extremely well. Half an hour later she suddenly collapsed, having marked cyanosis and dyspnoea, and died within two minutes, before medical assistance arrived.

A post-mortem examination was made on the morning of death. The right lung was completely collapsed, and on inflation of the trachea air escaped from a perforation, about a quarter of an inch in diameter, on the surface of the middle lobe. Further examination showed that the perforation was over the site of a small subpleural abscess. Apart from healed tubercles at the apex and some calcified nodules in the middle zone, the remainder of the lung was normal. There was partial collapse of the left lung due to a thick adherent pleura which had obliterated the pleural cavity. Both upper and lower lobes contained healed and active tubercles. Apart from engorgement of the right side of the heart all the other organs were normal. The cervix was taken up but not yet dilated.

SUMMARY

A case is described of a patient who came under observation for pulmonary tuberculosis midway through pregnancy. At term she was very well, with little evidence of active disease.

Half an hour after labour commenced she had a spontaneous pneumothorax on the less affected side, and died within the unusually rapid time of two minutes.

We are much indebted to Dr. W Santon Gilmour, medical superintendent of Killingbeck Sanatorium, Leeds, and to Mr. D. W. Currie, honorary obstetrical surgeon to the Leeds Maternity Hospital, for permission to publish this case, and for their help and advice.

W. HOWIE TOD, M.D., B.Sc.
JOHN F. WARIN, M.D., D.P.H.
Leeds.

Reviews

CHRONIC FLUORINE POISONING

Fluorine Intoxication. A Clinical-Hygienic Study. By Kaj Roholm. (Pp. 364; 96 figures. 20s. net.) Copenhagen: Arnold Busch. London: H. K. Lewis and Co., Ltd. 1937.

In a short review it is impossible to do adequate justice to this important, interesting, and able piece of research. The author is a Danish physician who has been attached to the Factory Inspectorate in Denmark for the purposes of this work. The book opens with a comprehensive review of the part played by fluorine in biology. Intoxication in man, in plants, and in animals, the occurrence of fluorine in animate and inanimate nature, the effects of fluorine upon protoplasm and enzymes, the effects of acute, subacute, and chronic fluorine intoxication, are some of the most important parts of the first section. There follow descriptions of the technique adopted in the author's investigation, of his study of spontaneous cryolite poisoning, and of his own experimental investigations on rats, pigs, calves, and dogs. The book concludes with an able discussion of the whole problem of fluorine intoxication and with a presentation of his own conclusions.

The whole book appears to be so important that every effort should be made to bring it to the notice not only of industrial and general branches of the medical profession, but also of radiologists, public health officers, dentists, veterinary surgeons, and agriculturists. In the present review it is proposed to confine attention to a brief account of Dr. Roholm's conclusions concerning chronic intoxication with fluorine. In passing we may offer a word of praise to the author for his remarkable command of the English language, and to the printers for the excellence both of the type and of the illustrations. The reproductions of the *x* rays are particularly successful.

Chronic fluorine intoxication was first recognized by Flemming, Moller, and Gudjonnson among the workers in a cryolite factory in Copenhagen in the year 1932. Cryolite is sodium aluminium fluoride ($AlF_3.3NaF$), a rare mineral mined only in South Greenland. Its industrial use, which is widespread, depends upon the ease with which it causes a flux when heated. Cryolite is used in the smelting of minerals (especially aluminium) and in the manufacture of enamel and glass. The crude ore is mined in Greenland and shipped only to Copenhagen and Philadelphia. Chronic fluorosis occurs among those who mine, and, especially among those who handle, the ore in its crude state. If the risk of chronic fluoride poisoning were confined to those who handle cryolite and those who are exposed to its fumes, English hygienists would need to take little interest in the subject of chronic fluorosis. But other earth-containing fluorides are used in industry and commerce. The most important of these are fluorspar and fluoride-containing clays. Whenever these natural products are subjected to a high temperature fluorine or fluoride-containing gases are discharged into the air unless special precautions are taken. These substances may prejudicially affect plants, animals, and men. Furthermore, since compounds containing fluorine are used for such purposes as the preservation of food, the killing of insects, and the etching of glass and the cleaning of china ware, there are real grounds for concern lest unrecognized cases of chronic fluorine poisoning may be occurring in this country.

Dr. Roholm mentions the following industries in which exposure to fluorine-containing gases may occur. (It is to be noted that the brunt of the exposure may fall not upon the workers but rather upon those who live near to the factories in which the processes are carried out.) The manufacture of superphosphate makes use of fluorine-containing materials on a large scale. Dr. Roholm raises the question whether the presence of fluorine in superphosphates may not sometimes have a detrimental effect upon the plant life which they are intended to nourish. In the steel and metal-smelting industries fluorspar (CaF_2) is used extensively as a flux; in this case silica tetrafluoride is discharged into the air. Some of the clays used in brick-making contain fluorides, which may be discharged in the kiln smoke. Certain zinc ores contain fluorides, as also do some of the materials used in glass, enamel, and certain chemical industries. It will be realized, therefore, that the potential risk is a real one in this country. If we have in fact escaped from the effects of fluorine poisoning it is probably due to the circumstance that it is, in general, unusual for our industries to be crowded into small and compact districts. It is possible, however, that cases are occurring which have not been diagnosed.

In a search for the evidence of chronic fluorosis the following main points should be given special attention. Dr. Roholm considers (p. 297) that attention may be directed in the first instance to the plant life around the factory. The affected plants are small and show grey or brown spots on their leaves or edges; the leaves fall early and the plants may have deformed fruits. The animal life of the area should then be studied. The symptoms in animals are described with a wealth of detail on pages 38 to 45 and pages 60 to 102. It will be enough to remark here that the symptoms and signs of fluoride poisoning in animals and in man appear to be remarkably similar. In human beings various manifestations of fluoride poisoning may occur. The types of morbid change which are observed depend upon the length of the period of absorption, the age of the patient, and the channel by which absorption takes place.

Dr. Roholm states that chronic fluorine intoxication presents itself in the form of three clinical units: the tooth anomaly, the osteosclerosis, and the osteomalacic condition accompanied by general symptoms. (1) In man the tooth disease is known as "mottled teeth . . . the dental clinical appearance of which appears to be characteristic"—chalky opaque pigmented enamel, and, in more severe degrees, low resistance of enamel and abnormalities of size and shape. The general health is not affected. (2) The osteosclerotic form of the disease is described for the first time in this monograph. Changes which can be studied radiologically are observed in the pelvis and lumbar region and show "uniform density of bone tissue," and especially "calcification in the ligaments"—no destruction of bone occurs and the general health of the patient is little affected. (3) The "osteomalacic" form of fluoride poisoning is similar to fluoride poisoning which has been observed again and again in many countries amongst herbivora. The bones are "reduced in strength," and exostoses, bone atrophy, and defective calcification occur. In typical cases these changes are accompanied by a progressive cachexia.

While it cannot be said that the author's work has finally established the claim of "fluoride poisoning" to be the sole cause of these interesting types of illness, he has presented enough evidence of a very substantial kind to justify further inquiry, and in particular to justify a careful search being made in this country for possible cases of chronic fluoride poisoning.

MENTAL DEFICIENCY

A Text-Book of Mental Deficiency (Amentia). By A. F. Tredgold, M.D., F.R.C.P., F.R.S.E. Sixth edition. (Pp. 556; 34 plates. 25s.). London: Baillière, Tindall and Cox. 1937.

That Dr. Tredgold's textbook should now be in its sixth edition is not to be wondered at. Its virtues, even its idiosyncrasies, have long been known: each successive edition enhances the former and modifies the latter. In its latest revised form it has become more than ever indispensable for all medical officers or practitioners who are concerned with the diagnosis and certification of defectives under the various Acts of Parliament, as well as of great value even to those specialists who undertake the care or supervision of such patients. Each year the literature of the subject grows. From its medical, biological, and sociological aspects alike it is voluminous. So far as is necessary for the purposes of Dr. Tredgold's book, its author has incorporated the main results of published research and authoritative opinion. It is well to note the particular directions in which this has led to a more than minor or general revision. There are extensive alterations in the chapters on causation, psychology, pathology, secondary amentia, and sociology, and considerable additions to these on the nature of mental deficiency, clinical examination (including mental tests), the law and legal procedure, while there is a helpful new section on the chronological development of the human mind.

In the fullness of its content, in logical and orderly arrangement, and in some features of its general outlook, the work has been definitely improved; and though in places it is not without a tendency to dogmatism on matters of some doubt or acute controversy, this is a feature which is not without excuse in a volume among the primary purposes of which is its use as a textbook for students and practitioners. Its main biological heresy can be either approved or discounted by readers of competent knowledge. It is necessary, indeed, to read the chapter on sociology with extreme care. This is not without a tendency to argue from bad or extreme cases, and to accept at their face value some statistical investigations which either were of a too restricted character or the conclusions from which cannot survive the critical scrutiny of the expert. Though the author's suggestions in the realm of eugenics deserve respect and must always be taken into full consideration, some of his generalizations are a little too facile, and are by no means incontrovertible.

DERMATOLOGY IN CHILDHOOD

Skin Diseases in Children. By George M. Mackee, M.D., and Anthony C. Cipollaro, M.D. (Pp. 345; 153 figures. 24s. net.) London: H. Milford, Oxford University Press. 1937.

Not many dermatologists have produced volumes specially devoted to the subject of skin diseases in children, probably because much the same diseases affect the skin at every decade of life. In fact, the older the patient grows the greater variety of skin affections he appears to be liable to, and dermatologists attached to children's hospitals have been known to complain of the monotony of their clinics. The only dermatoses which are really peculiar to infancy and childhood are congenital affections, of which the various kinds of naevi are the most numerous. Until the volume before us, by Dr. Mackee and Dr. Cipollaro, we do not recollect any other English treatise specially devoted to this section of dermatology since Adamson's very useful little book, which appeared about thirty years ago. The authors of this volume do not share the view of dermato-

logy in childhood above expressed. They are inclined to emphasize the distinctions between the dermatoses of childhood and adult life. At all events they have produced an interesting volume illustrated with good photographs of all the commonest and most important affections of the skin, but there is nothing in it which would not be included in any ordinary textbook of skin diseases. In their preface, which surpasses even the majority of American prefaces as a collection of high-minded and conscientious platitudes, the authors lay much stress upon the highly important question of treatment. The therapeutic directions given in the volume are sound, but they remain commonplace. Perhaps the most useful paragraph consists of the directions for making Pusey's calamine emulsion, which forms a very elegant creamy-pink application for treating mild cases of eczematous dermatitis. Under the heading "Dermatophytosis" the authors describe no fewer than eight varieties of eruption which they consider due to some form of fungus. Many dermatologists would refuse to accept them all as such, but nowadays there is a great tendency to consider every eruption affecting the hands and feet as being caused by fungoid infection. The present authors merely follow the prevailing fashion.

ARMY MEDICAL ADMINISTRATION

Organization, Strategy and Tactics of the Army Medical Services in War. By Lieut.-Colonel T. B. Nicholls, M.B., Ch.B., R.A.M.C. With a foreword by Lieut.-General Sir James A. Hartigan, K.C.B., C.M.G., D.S.O., Director-General, Army Medical Services. (Pp. 372. 10s. 6d.) London: Ballière, Tindall and Cox. 1937.

It is nearly twenty years since the great war ended, and most of the medical men who were serving then have reached an age which prevents their again taking an active part in the field should a national emergency arise. We cannot, therefore, rely on their wide experience gained in France, the Dardanelles, and in Mesopotamia being available, by personal service, and the younger generation of doctors, should they be called upon to serve, will have to depend for their knowledge on what they can learn from books, tactical exercises, and such instruction as is offered them. Lieut.-Colonel T. B. Nicholls, R.A.M.C., presents us with a mass of information on almost every aspect of the subject.

Part I deals with general organization and administration, included in which is an appreciation of the medical situation with a description of the method of calculating the number of casualties and the time and transport required to evacuate them from the battlefield. Perusal of these formulae will indicate the magnitude of the accommodation problems which beset the administrative medical officer. Part II, the largest section, describes the constitution and organization of medical units in the field, in each case giving details of siting, construction, capacity, personnel, medical equipment, transport organization, and duties. Strategy and tactics is the heading to Part III. Here the positioning and movement of medical units are discussed with particular reference to varying phases in a campaign and to special topographical situations. The last part is devoted to administrative exercises in which different medical problems are set and in some cases answered.

The book is a complete summary of all the information that it was possible to obtain from war-time records and from the personal experience of the author, who is to be congratulated on the excellent results he has obtained. He has undertaken and completed a task that more than one officer before him, owing to its magnitude, considered but had not the courage to attempt. All books, however good, are open to criticism, and this one is no exception. It is felt that the methods described are not in all cases up to date or sufficiently elastic to meet modern requirements. For example, no mention is made of air transport of wounded, gas and decontamination centres are given scant notice, while arrangements for disinfestation at medical units are entirely omitted, whereas the chapter on ambulance trains is, in our opinion, comparatively and unduly long. We suggest that a chapter on transport of casualties in desert and mountain warfare would have been a useful and instructive addition. As it stands the book deals almost entirely with such medical arrangements as existed in France during the great war and ignores those peculiar to other theatres. There is a dearth of diagrams: for example, the lay-out of a main dressing station, a C.C.S., a gas centre, or the general scheme of evacuation from the firing line to the base. A map, however rough, would have been of greater help in following the tactical movements of the mobile medical units in one of the staff exercises. These are minor points and detract little from the general worth of the publication.

Every R.A.M.C. officer, Regular or Territorial, will find Colonel Nicholls's book an encyclopaedia of knowledge and information concerning the medical services in war, and should be grateful to him for having presented the subject in such a clear and comprehensive manner. At the same time it can never replace the official manuals, and should be looked upon more as an addition to than a substitute for these.

ROSE AND CARLESS

Rose and Carless Manual of Surgery. Edited by Cecil P. G. Wakeley, D.Sc., F.R.C.S., and John B. Hunter, M.C., M.Ch., F.R.C.S. Fifteenth edition. (2 volumes, pp. 1,618; 948 figures, 18 coloured plates. 30s.) London: Baillière, Tindall and Cox. 1937.

The fifteenth edition of "Rose and Carless" appears in two volumes and is dedicated to Lord Lister with the wording used in the original edition of 1898; while above the dedication is a photograph of the bust of Lister which rests in the Royal College of Surgeons of England. In a preface mention is made of the fact that for some unexplained reason the dedication to Lord Lister was omitted from the last two editions. Since the appearance of the last edition (reviewed in these columns on February 10, 1934) the death of Albert Carless has deprived the work of the last of its original authors.

The new edition shows evidence of much revision; new chapters on surgical shock and the sympathetic nervous system have been added, while the breaking up of the text into two volumes is undoubtedly an advantage, as a single volume work in the same style would be unwieldy. The first eight chapters, which deal with surgical pathology and bacteriology and are contributed by Dr. Carnegie Dickson, have been practically rewritten, and much new matter is incorporated. Mr. V. E. Negus has revised the section on oto-rhino-laryngology and Mr. Bishop Harman that on ophthalmology, Sir Frank Connor that on tropical surgery and Mr. Eardley Holland and Dr. C. Hadfield those on the surgery of the female genital organs and on anaesthesia respectively. Mr. John Hunter has rewritten and enlarged the chapter on thoracic surgery. Illustrations are many and good, but the semi-diagrammatic figure 651 might be modified to accord with modern embryological views and the thyroglossal tract shown passing ventral to the hyoid bone. In the interests of space, Fig. 533, showing the trans-sphenoidal exposure of pituitary tumours, might disappear from future editions, as being only of historical interest to-day.

We regret the absence of any reference to the Billroth I type of operation for gastric resection, for this physiological type of procedure has so much to recommend it and is being more widely practised to-day.

This edition of a well-known textbook shows considerable improvement over its predecessors, and in our opinion is the best that has appeared since the last edition by the original authors. We have no hesitation in continuing to recommend this work to students and practitioners.

Notes on Books

Sir THOMAS LEWIS'S masterly survey entitled *Diseases of the Heart* was noticed soon after its appearance in a leading article in these columns on May 6, 1933. We now welcome a second edition (Macmillan and Co., 12s. 6d.). For this the text has been thoroughly revised by the author, and all recent and relevant advances in our knowledge of affections of the heart which it is judged will prove of value to the practitioner have been incorporated.

Disorders of the Blood, by Dr. LIONEL E. H. WHITBY and Dr. C. J. C. BRITTON, was reviewed in these columns on its first appearance in 1935, and the authors were praised for their judgement and skill in compressing a vast subject into small space without deforming it. A second edition has now appeared (J. and A. Churchill, 21s.). During the past two years several notable advances have been made in the science of haematology, and these are reflected in the thirty-five extra pages and seven new illustrations, as well as in some 400 changes in the bibliographies. This edition stresses the value of grouping the anaemias in terms of cell size and haemoglobin concentration, a classification which the authors prefer to one based on the colour index.

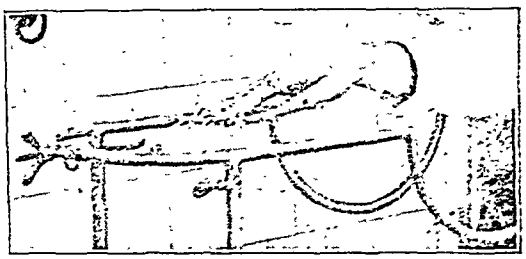
In the latter part of 1934 we drew attention to the work of KARL DIEHL and O. F. v. VERSCHUER, who, by studying the tuberculous changes in uniovular and binovular twins, were able to demonstrate that a "specific" hereditary predisposition plays a part in the development of tuberculosis. The same authors have now published a second volume, *Der Erbeinfluss bei der Tuberkulose* (Jena, Gustav Fischer), giving the results of their investigations in greater detail. Moreover, the work now covers 239 pairs of twins (previously they totalled only 127), in 205 of whom tuberculous lesions could be discovered in at least one of the twins; and in addition it has been possible to follow up the original twins for a longer period. The authors maintain that this more extensive investigation confirms in all respects the conclusions in their first monograph.

Dr. JACQUES AUDIAT'S monograph *L'Action des Rayons Ultra-Violet et des Rayons X sur les Nerfs Périphériques* (Masson et Cie, 25 fr.) is a contribution to a subject on which, up to the present, very little research has been done. Although much work has been accomplished in investigating the effects of chemical agents on the function of nerves, study of the influence of physical agents has been limited. The opinion generally held is that *x* rays have little, if any, effect on the function of nerve tissue. As for ultra-violet rays, their penetration is known to be feeble, and that they could affect the peripheral nerves has been thought improbable. By a number of delicately controlled experiments on the isolated sciatic nerves of frogs Dr. Audiat demonstrates that under given conditions (among which variations in temperature are a modifying factor) ultra-violet rays and *x* rays diminish the excitability of the nerve until it is totally suspended. The author contends that the reactions set up in the nerve by irradiation continue after it has ceased, and he has been able to detect chemical alterations in the nerve tissue by spectrum analysis. The effects of ultra-violet and *x*-ray irradiation on the physiological activity of isolated nerve were identical in most respects. The book is an interesting account of meticulously performed experiments which in their present stage are of greater interest to the laboratory worker than the clinician.

Preparations and Appliances

EXTENSION IN CARPAL EXCISIONS

Mr. T. B. MOUAT (Hon. Surgeon, Royal Infirmary, Sheffield) writes: It is now recognized that some form of traction extension is essential in the reduction of a dislocated carpal bone, but it is not so generally appreciated that extension in a Böhler's forearm screw traction frame is equally helpful in operations for excision of a disintegrated carpal semilunar or scaphoid. After the frame has been placed in position, and either local or general anaesthesia induced, extension is applied to the fingers by large plaited cane finger-stalls, which are supplied by Messrs. Down Bros. The fixed extension opens



up the carpal joints, and converts a difficult operation into a comparatively easy one. Before the use of extension I found it was very difficult indeed to remove in one piece a lunate bone softened and deformed by Kienböck's disease, because the bone broke up and peripheral fragments adherent to the ligaments had to be tediously dissected out or removed with a curved dental elevator. With extension it becomes easy to recognize the interspaces and cleanly to excise the diseased bone after division of its ligamentous attachments. There is less discomfort after operation because trauma is reduced to a minimum and the functional result is improved.

WESTERN ELECTRIC 6A AUDIOMETER

The Western Electric Company have recently produced a new instrument known as the 6A audiometer, which seems to be a distinct improvement upon their former models. It is a heterodyne instrument, and has a continuous variable frequency enabling testing to take place at any frequency within a range of about 100 to 10,000 cycles per second—it is practically a pure tone instrument. Bone conduction may be tested both with and without masking. The masking method, which is an improvement, consists of applying the masking tone by air to the ear not being tested. This masking tone is of the same frequency as the tone applied to the ear under test and diminishes in intensity with that of the testing tone. This enables each ear to be tested accurately by bone conduction. Incorporated in the instrument is a microphone, which enables the operator to talk to the patient under test. This acts as a hearing aid, but it is unlikely that it would be necessary to make use of it on many occasions; it is not calibrated and obviously would not be suitable for all types of deafness. The additional cost for the microphone is about £10, and it is doubtful whether this is worth while. The instrument may be obtained without the microphone. While it is possible to obtain a more accurate record of the patient's hearing loss with this instrument, rather more intelligence is required on the part of the patient than is necessary in using the 2B audiometer. The cost of the instrument is 70 guineas, with extras, apart from the microphone, amounting to about another £10.

REGIONAL DISTRIBUTION OF CANCER IN THE OXFORD AREA

BY

G. B. LEYTON, B.A.,

AND

H. G. LEYTON, M.D.

In the course of an analysis of cancer patients who had attended the Ratcliffe Infirmary, Oxford, during the past six years it became obvious that certain streets in the city and some villages in the country around were sending more cases than others. With the view of checking these findings tables of the total deaths were compiled from the registrar's returns covering the whole area, and we are indebted to the medical officers of health for the city and the adjoining districts for permission to use the returns.

General Features

In order to get a true picture of the distribution of deaths it was necessary to place cases in adjoining streets and villages in their relative geographical order, since the division of cases into registration districts breaks the continuity of the grouping. Villages have been classed as adjacent to one of the towns if within three miles.

Points brought out by this rearrangement are:

1. That streets in Oxford adjoining one another get exacerbations in the number of their cancer cases at the same period, and if the cases are marked on a map of the city they show definite grouping.

2. That villages in certain parts of the country around show a similar tendency.

3. That during these exacerbations one or two younger cases often occur.

OXFORD CITY

	1932	Age	1933	Age	1934	Age	1935	Age	1936	Age
DISTRICT I										
Street 1.. ..	C. lung	58	C. stomach	57	C. cervix	47	C. prostate	84	C. prostate	64
" 2.. ..	C. colon	71			C. rectum	73	C. colon	78	C. stomach	64
" 3.. ..	C. uterus	58					" "	53	C. pancreas	78
" 4.. ..	Sarc. uterus	48					C. cervix	74	C. breast	60
" 5.. ..	C. liver	75					C. colon	53	" "	54
" 6.. ..	Sarc. arm	62					C. rectum	34	" "	77
" 7.. ..			C. colon	67	C. lung	68				52
DISTRICT II										
Street 1..										
" 2.. ..	C. bronchus	69								
" 3.. ..	Cerebral tumour	21	C. stomach	61	C. colon	37		87		
" 4.. ..					C. larynx	61	Melanotic sarc.	75	C. colon	78
DISTRICT III					C. colon	75	C. stomach	70	Rodent ulcer	76
Street 1.. ..			C. colon	34	C. testis	53	C. glands	46		
" 2.. ..			C. jaw	58	C. colon	65	C. breast			
" 3.. ..			C. larynx	58	C. breast	74				
" 4.. ..			C. uterus	60						
" 5.. ..			C. liver	73	C. stomach	66			C. stomach	60
" 6.. ..			C. jaw	71	C. breast	53			C. breast	50
" 7.. ..			C. oesoph.	72	C. bladder	77			C. larynx	56
" 8.. ..			C. bladder	72						
" 9.. ..			C. colon	78						
" 10.. ..					C. stomach	54				
" 11.. ..	C. breast	45			C. bladder	58				
" 12.. ..	" C. palate	59			C. oesoph.	87				
" 13.. ..		53			" "	64				
" 14.. ..					C. stomach	54			C. colon	65
DISTRICT IV					C. colon	64				
Street 1.. ..	C. rectum	82	C. uterus	63	C. oesoph.	65				
" 2.. ..			C. rectum	65						
			C. stomach	65	Sarcoma	7			C. breast	78
DISTRICT V			C. colon	87	C. stomach	59	C. rectum	59	C. colon	81
Street 1.. ..	C. liver	74	C. breast	58					C. oesoph.	86
" 2.. ..	C. breast	45								
" 3..				54						
" 4.. ..	Carcinomatosis	63			C. stomach		Hypernephroma	64		
" 5.. ..	Epith. fauces	65					C. pancreas	61	C. stomach	63
" 6..			C. breast		" "	64			C. pelvis	72
" 7.. ..				77	C. oesoph.	73	C. rectum	61	Cerebral tumour	42
" 8.. ..	C. colon				C. uterus	77			C. prostate	67
" 9.. ..		69	C. colon		Cerebral tumour	65	C. ovary	67	Hypernephroma	43
				66	" "	9	C. colon	64	C. rectum	82
DISTRICT VI			C. stomach	65		57			C. colon	83
Street 1.. ..			" "						" "	77
" 2..										
" 3.. ..			C. colon	67	C. oesoph.	67	C. uterus	48		
" 4.. ..			C. breast	54	" "	65	" C. colon	47		
				53			C. duodenum	83		
" 5..			C. tongue	80	C. bladder			60	C. stomach	57
" 6.. ..			C. colon	64		76				
" 7.. ..			C. liver	67	C. stomach	65				
" 8.. ..			C. stomach	54	C. rectum	54				
			C. bronchus	73						
			C. stomach	44						
			C. lung							

4. That two or more cases of cancer of the same organ tend to occur at the same time. For instance, in one village there were two cases of cancer of the stomach, two of cancer of the tongue, and two of cancer of the prostate at the same time; and in the market towns this feature is even more pronounced than in the village groups. Cancer of the stomach appears to be very prevalent in these smaller towns, and the cases entered in the death certificates as cancer of the liver may probably be added to these, as primary disease of that organ in cancer is not common.

It is realized of course that in any of the periodic groups shown cases occur which have no relation to any exacerbation; but, judging from the hospital notes, cases of cancer of the alimentary tract in this area most often appear in the death returns within three years, so that the incidence in these cases can be roughly estimated to have taken place three years previously.

While the occurrence of an excessive number of deaths from cancer in any one area is within the realms of chance, it seems necessary to find some other explanation for the widespread nature of this phenomenon over a large district. There are villages not included in these tables where there have not been any cases of cancer, and this is more noticeable in one particular part of a county area. It would be interesting to know whether the above grouping takes place in other parts of the country.

MARKET TOWN I (Population 3,246)

	1931	Age	1932	Age	1933	Age	1934	Age	1935	Age	1936	Age
	C. glands of neck	41	C. liver	63	C. caecum	72	C. *antrum*	64	C. *breast*	67	C. *vulva*	75
	C. stomach	51	C. breast	69	C. bladder	69	C. tongue	72	C. oesoph.	71	C. breast	66
	" "	75			C. prostate	69	C. stomach	61	C. stomach	65	" "	37
	C. liver	46			C. uterus	70	" "	79	C. liver	63	C. stomach	73
	C. gall-bladder	76			Sarcoma	86	" "	77	" "	75	" "	62
	" " "	60					C. rectum	60	C. colon	70	" "	76
	C. colon	65					" "	65		80	C. colon	67
	" "	67					C. prostate	75	C. rectum	71	C. rectum	67
	Hypernephroma	66										
	C. thyroid	64										
	C. breast	61										
	C. uterus	64										
	C. ovary	39										
	Sarcoma	39										
Villages adjacent (within 3 miles)												
1. (Pop. included in Town)	C. stomach	60										
	Cerebral tumour	51										
2. (Pop. 488) ..	C. ovary	43			C. stomach	69	C. stomach	70				
3. (Pop. 646) ..	C. breast	63			C. colon	65	C. oesoph.	67			C. colon	73
	C. tonsil	85					C. cervix	65			C. pancreas	29
							C. breast	77				
4. (Pop. 419) ..	C. rectum	72	C. larynx	26			C. rectum	70				
5. (Pop. 227) ..	" "	56					C. mediastinum	69				
Villages *in same Registration Area over 3 miles from the Town but adjacent in order*												
1. (Pop. 246) ..					C. stomach	58						
					C. glands of neck	75						
2. (Pop. 256) ..	C. prostate	69					C. stomach	75				
3. (Pop. 402) ..	C. breast	77					C. rectum	66				
			Epith. mouth	46			C. stomach	75	C. lung	53	C. liver	54
							" "	53			C. rectum	51
4. (Pop. 622) ..	C. lung	47	C. stomach	66	C. tongue	64	C. rectum	66				
							C. prostate	67			Cerebral tumour	63
5. (Pop. 197) ..	C. oesoph.	54	C. tongue	69	C. prostate	88	C. stomach	87				
			C. colon	71	C. colon	76	Cerebral tumour	45	Epith. lip	76		
6. (Pop. 231) ..			C. larynx	57	C. tongue	65	Epith. hand	87				
					Sarc. knee	64						
7. (Pop. 1,179) ..	C. rectum	71	C. colon	73	C. stomach	78	Cerebral tumour	45	C. breast	50		
			C. liver	71	C. rectum	55	C. pancreas	62	C. tongue	70		
8. (Pop. 366) ..					" "	69	C. rectum	79				
9. (Pop. 303) ..			C. sigmoid	71			Sarc. kidney	2				
				36								

MARKET TOWN II (Population 7,995)

1931	Age	1932	Age	1933	Age	1934	Age	1935	Age	1936	Age
C. oesoph.	60	C. oesoph.	60	C. stomach	54	C. stomach	75	C. stomach	76	C. stomach	69
" "	56	C. stomach	75	C. pancreas	75	" "	72		53	C. pylorus	63
" "	55	" "	58	C. colon	65	" "	52	C. liver	70	" "	83
C. stomach	74	C. gall-bladder	58	C. tongue	82	C. pancreas	86	" "	78	C. oesoph.	65
" "	65	C. pancreas	91	C. throat	58	" "	82	" "	75	C. cloon	71
" "	57	C. colon	59	C. larynx	56	C. colon	69	" "	68	C. rectum	75
" "	67	" "	70	C. glands of neck	75	C. bladder	53	C. colon	62	C. sigmoid	23
C. liver	59	C. rectum	55			C. cervix uteri	62			C. thorax	65
" "	71		76				59	" "	59	C. kidney	76
C. colon	71	C. eye	55			C. uterus	66	" "	65	C. breast	45
" "	70	C. breast	77			" "	51	" "	63	" "	80
C. rectum	77					C. prostate	67	C. caecum	61	C. prostate	61
" "	73					C. breast	53	C. lung	43	Sarc. ilium	26
C. pancreas	71							Epith. tongue	81		
C. mouth	64							C. prostate	61		
Carcinomatosis	70							Sarcoma	67		
C. lip	57										
C. uterus	55										
C. prostate	79										
C. rectum	44										

MARKET TOWN II—*continued*

Villages (in same area but not within 3 miles of the Town)

	1931	Age	1932	Age	1933	Age	1934	Age	1935	Age	1936	Age
WEST												
1. (Pop. 685)	C. breast	84	C. breast	42	C. pylorus	74	C. kidney	41	C. colon	54		
2. (Pop. 113)	C. colon				C. cervix	46	C. rectum	62				
3. (Pop. 114)					C. pylorus	51	C. breast	49	Lymphosar-coma	50		
4. (Pop. 506)												
SOUTH			C. breast	83								
5. (Pop. 856)			Sarc. lung	49	C. colon	68						
	C. tongue	67	C. stomach	40	C. stomach	70						
	C. colon	66	Hyperne-phroma	59	C. rectum	61	C. lung	62	C. stomach	64	C. sigmoid	61
6. (Pop. 846)					Epith. lip	62	C. breast	80	C. sigmoid	59		
7. (Pop. 727)					C. ovary	48	C. stomach	73	Chorion epi-thelioma	47		
8. A new village (pop. unknown)			C. oesoph.	52	C. breast	60	C. prostate	75				
					C. uterus	72	C. rectum	66	C. uterus	82	C. colon	67
					C. oesoph.	73	C. stomach	72	C. liver	77	" "	79
					C. stomach	62	C. cervix	60	C. stomach	61	" "	71
							C. max. antrum	73	C. glands of neck	51		
							C. bronchus	44	C. rectum	66		
							C. rectum	72				
							Rodent ulcer	77				

MARKET TOWN III (Population 2,164)

	1931	Age	1932	Age	1933	Age	1934	Age	1935	Age	1936	Age
	C. gall-bladder	66			C. stomach	53	C. stomach	28	C. stomach	63	C. oesoph.	76
	C. uterus	55					" "	32	C. oesoph.	77	C. colon	75
							" "	42	C. antrum	57	C. cervix	70
							C. pancreas	63			C. lung	53
							C. colon	52				
							C. rectum	69				
							" "	68				
							" "	65				
							Sarc. lung	76				
							Lymphosarcoma	27				
								14				

Villages (in same area but more than 3 miles distant, ex. S.1)

NORTH														
1. (Pop. 833) ..				C. ovary	55								C. ovary	43
2. (Pop. 522) ..	C. oesoph.	62	" "	48	C. stomach	68	C. rectum	72					C. breast	79
WEST					C. colon	67	C. liver	69						
1. (Pop. 824) ..					C. vulva	70							C. stomach	67
	C. gall-bladder	78			Sarc. femur	72								
SOUTH	C. colon	54	C. glands of neck	55										
1. (Pop. 209) ..					C. rectum	84								
2. (Pop. 2070) ..	C. larynx	62			C. stomach	82								
	C. stomach	70	C. rectum	60										
			C. uvula	71	C. oesoph.	67								
EAST			C. breast	71	C. liver	58								
1. (Pop. 275) ..	C. breast	80			C. tonsil	66	" "	52	Cerebral tumour	56	Sarc. rib	21		
2. (Pop. 206) ..	C. pancreas	75	C. pancreas	80			C. cervix	31	Cerebral tumour	14				
			C. larynx	76	C. colon	63	C. breast	48						
									C. medias-tinum	70	C. rectum	71		
											C. colon	81		

MARKET TOWN IV (Population 2,840)

	1931	Age	1932	Age	1933	Age	1934	Age	1935	Age	1936	Age
	C. rectum	56	C. lung	52	C. rectum	59	C. rectum	59	C. oesoph.	78		
	Sarc. testis	67	C. liver	55	Epith. lip	69	"	73	C. stomach	52	C. prostate	66
			Epith. mouth	61	Myelocytic leu-kaemia	31	C. colon	55	" "	70	C. colon	87
							C. stomach	69	" "	65		
							C. tongue	62	C. pancreas	67		
							C. uterus	69	Hypernephroma	46		
									C. larynx	65		
									C. prostate	56		
									C. pituitary	72		

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BLACKWATER FEVER

Few problems in tropical medicine are more puzzling, and one may well say more urgent, than that of the causation of blackwater fever, the disease more than any other feared by the European in many parts of the Tropics. Uncomplicated malaria may itself be fatal, dysentery may be a serious cause of sickness and invalidism, typhoid is always a possible contingency, but none of these, and indeed scarcely any other disease that comes to mind, except cholera in the old days in India, has that fatal and dramatic suddenness and fear-inspiring character that blackwater fever has always had to those living in countries where this disease is at all prevalent. The causes of blackwater fever still remain almost as mysterious now as they were thirty years or more ago, when Manson described it in his famous textbook. Long before this, however, the French in West Africa had written largely about the disease. Other nations followed as medical science in their colonies advanced. Koch startled the world by his pronouncement that blackwater fever was the result of quinine poisoning.

Controversy, hypothesis, and a minimum of actual facts or proof have always characterized the writings on this subject, and probably all the advance that has been made now for many years as to knowledge of its essential nature can be summed up by saying that opinion has now become almost unanimous that it is definitely a sequela of long-continued malaria. One might perhaps go further and say that it is also generally recognized to be the result of some change induced in the subject by repeated malaria by which he has been brought very much into the position of the paroxysmal haemoglobinuric—that is, liable to a crisis of intravascular haemolysis when certain exciting causes are brought to bear. But in this case it is clearly not cold that precipitates the attack, and though probably here quinine plays the part of the most usual exciting cause, yet absolute proof or disproof of this is still lacking. We do know that quinine acts in this way in certain quinine-susceptible cases. For this the evidence is overwhelming, but whether the drug is also responsible for precipitating the attack in the usual type of case it is extraordinarily difficult to say, or at least to prove. As to the nature of the changes which bring about the susceptibility, even conjecture fails to give any reasonably helpful theory. Recently some new discoveries regarding changes in the blood in blackwater fever have tended to refocus interest on the vexed question of its causation, and a somewhat remarkable work by Professor J. W. W. Stephens has come at a time perhaps when it is likely to be most needed and useful. This work is a monograph on blackwater fever, and according to the subtitle is "A Historical Survey and Summary of Observations over a Century."[1] Collected in this substantial volume are given "in the original" the numerous facts that during this time have been recorded and the conjectures put forward about this disease. We say, in the original, because this is literally true, the author's method being the unusual one of quoting the cited author's own words so far as possible in appropriate passages. This is supplemented in many cases by a tabular condensation of the cited authors' data bearing on the question under discussion. Consequently, until one has realized what the method is and experienced some of its advantages, perusal of the book is a little alarming. Once, however, the system is grasped the reader will find with great ease, for example, under "urine" every relevant observation made in the literature. As the pages are turned over he can follow, if he wishes, at a glance the evolution of knowledge regarding each feature described. History, geographical distribution, the findings regarding aetiology, relation to malaria and quinine, the blood, the urine, the symptomatology (there are far more symptoms described than one might have thought), treatment, and so on are given seriatim and followed by a number of appendices giving additional details.

The question of the part played by quinine has deeply concerned Professor Stephens. Clearly it is an extremely important matter to know whether or not administration of this drug forms an essential or even a usual precipitating cause. It seemed possible, if records of the disease could be traced to the days before quinine was in use and any relation could be observed between the introduction of quinine treatment and the record of blackwater fever cases, that the issue might be thus decided. Hence there is not only much of interest in the information given by the author regarding the introduction and use of quinine, but also a critical line of research has been followed. Another point is the question of how far back in the literature can undoubted cases of blackwater fever be recognized. Certain references to "black urine" and the cases described with "black urine" by Hippocrates

[1] *Blackwater Fever.* By J. W. W. Stephens, M.D., F.R.S. Liverpool: University Press. London: Hodder and Stoughton. (15s.)

have been taken as indicating records of the disease. But the actual words of Hippocrates and other writers given in the book show how slender is the evidence in this respect. Recently the researches, more especially of Fairley and Bromfield, have added greatly to our knowledge of the biochemistry of blackwater fever. Foy's researches in Greece indicate that country as a field where perhaps the conditions for studying the disease are far more favourable than they have ever been for the investigator in the Tropics.

Blackwater fever, especially in tropical Africa, though its incidence may have diminished in some classes, still remains a most serious bar to colonization by the settler, not only for those of the white race but for Indians, Chinese, "Syrians," and other immigrant races who suffer equally or to an even greater extent. The seriousness of blackwater fever as a colonial problem will, in fact, be no doubt universally granted. Professor Stephens's book should at this stage be both a stimulus to renewed and a guide to past research. In the frontispiece has been reproduced a fine photograph of the great pioneer author in this field, Médecin Général Bérengar Féraud. There is a foreword by Sir Rickard Christophers, whose name is familiar in association with that of the author in many joint contributions on malaria. At the end of the volume is a very complete bibliography.

THE SOCIAL SERVICES

Sir William Beveridge in his recent farewell address as director of the London School of Economics made a plea for the more scientific study of social subjects, and for a recognition of the true place and status of sociology among the sciences. He emphasized that the prime needs were the more extensive observation of facts as the basis of theories rather than argument from philosophic positions, and a real detachment from partisan action rather than judgement on controversial issues. P.E.P. (Political and Economic Planning) is an organization of the greatest value in the desired direction. Its periodical pamphlets are almost invariably adequate, accurate, clear, and unbiased. On the same date as that of Sir William Beveridge's address it published a *Report on the British Social Services*,[1] characterized by all these qualities and containing proposals for the future organization, control, and development of those services. The report gives a general view of the scope and administration of contemporary public social services, demonstrates their growth and magnitude, shows how they relate to one another, and reviews their main underlying principles. Unfortunately in some respects the health services, though properly considered in their relation to the whole, are somewhat less fully dealt with than the rest; but this feature of the report is to be remedied in the early future by the publication of a special report on those services, of the same order of size as the present report, dealing with many relevant matters which have been omitted or summarily treated at the moment. This will be awaited with great interest.

The public social services in this country have developed piecemeal and in somewhat haphazard fashion. There is consequently much confusion and overlapping. Nevertheless two important trends may be noted as having characterized this development: first, the evolution of publicly administered and financed services out of purely voluntary services; and, second, the preference for a number of specific services based on common needs rather than for a comprehensive relief service based on destitution. Further, four motives, distinguishable but changing in relative importance from time to time, are to be found operative in the growth of these services: the charitable motive to mitigate distress; the social motive to establish minimum standards of health education and well-being in the common interest; the democratic motive to reduce inequalities as far as may be; the self-help motive to encourage thrift and foresight. It must be assumed that these several trends and motives will continue to operate, and that any plans for the reorganization and extension of the services must take account of them. In such outlook and planning impersonal environmental services may be left out of consideration, but all those public services which have as their object the enhancement of the personal welfare of individual citizens may well be brought under review with the aim of co-ordinating or unifying them, of remedying their present imperfections, and of filling up any gaps that are left in their operation. Such is the general purpose of the P.E.P. report.

These services may be classified in various ways. In this report they are divided into the constructive community services, the social insurance services, and the social assistance services. The first of these classes includes the education services, the public medical services, the mental health services, the employment services, and the welfare of the blind. The second includes national health insurance, unemployment insurance, contributory pensions, and workmen's compensation. The third includes public assistance, unemployment assistance, and non-contributory old age pensions. Even this enumeration, by itself, discloses inconsistencies of principle and of practice, the bringing

[1] P.E.P., 16, Queen Anne's Gate, S.W.7. (Price 10s. 6d. cloth-bound, 7s. 6d. paper-bound covers; postage 6d. extra.)

together of matters that might well be separated, and the division of services which might well be brought together or amalgamated. While it may be a very convenient classification for the purposes of description, for the purpose of increased efficiency and improved administration it is clearly very imperfect. There are, for example, health and medical services in each of the three divisions, there are services directly connected with unemployment in at least two of them, and the machinery of pensions and of old-age provision is likewise sectionalized. Clearly the need for some degree of unification is already demonstrated, and certain fundamental questions of broad principle are at once raised. To name only two of these, we may well ask: To which of all these provisions is the contributory method best applied? To what extent is it possible and desirable to make the family rather than the individual the unit of consideration?

It is impossible to answer these and other similar questions decisively at the present moment, but, unless confusion is to be worse confounded and uneconomic working to be perpetuated, they require an early, considered, and impartial determination. The P.E.P. report, on the whole, regards the contributory method as valuable and states that it is popular, though it suggests that a flat rate of contribution is not the fairest and should be reconsidered. It looks, too, with greater favour than is common upon some expedient in the nature of family allowances. The repercussions of the social services upon political, economic, and industrial affairs are recognized. There can, indeed, be no attempt to isolate these matters. They should, however, be governed by conscious purpose rather than by unconscious tendency, and there should emerge "a broad strategy of social service development which can take the place of piecemeal improvisations." To this end the report suggests the establishment of "a Social Services Statutory Committee along the lines of the Unemployment Insurance Statutory Committee," with wide and defined functions. This is a valuable suggestion provided that the public social services are first classified on sound lines. Following the lines of policy and thought laid down by the British Medical Association in its consideration of the medical and health services, it would seem most desirable to preserve the large Departments of Education (including the provision of milk and meals while the children are actually assembled in the school), and of Health (unifying all the medical services under the purview of one central department and of a single authority in each local region), and to separate from these all services in the nature of cash payments and material assistance which could be united in one department to which the suggested statutory committee would stand in appropriate relation.

In connexion with any proposals for reorganization, it is important to note two conclusions of the report in relation to the national health insurance service. They are: first, "The administration of the scheme by approved societies is unnecessarily complicated and probably uneconomic. There should be a careful re-examination of the advantages and disadvantages of the present arrangements, and of the case for either eliminating the approved societies or reorganizing them on a regional basis"; and, second, "The local insurance committees perform no functions which could not be more appropriately performed by the local public health authorities, which are usually responsible for all other public medical services in their areas."

RISKS OF EXPLOSION IN ANAESTHESIA

It is unfortunate that many of the anaesthetic agents in use at the present time are inflammable and are therefore liable to explode under certain conditions. While anaesthetic explosions in this country are relatively infrequent they are very alarming for everybody concerned when they do occur. Coste and Chaplin[1] of the London County Council recently carried out some investigations to discover what conditions render these vapours explosive. They found that a mixture of ethyl chloride and air is inflammable when the proportion of ethyl chloride in the mixture lies between 5 and 20 per cent., and in the case of ether vapour and air a concentration of 2 to 8 per cent. can be ignited. If ether vapour is mixed with nitrous oxide the risk of explosion is doubled, as any concentration of ether between 1.5 and 16 per cent. is inflammable; much the same is true of oxygen and ether. It was also found that the vapour produced by bubbling oxygen, with or without nitrous oxide, through ether in a Boyle's machine or Shipway's apparatus produced a very inflammable mixture; even if the gases were passed through the chloroform bottle as well it was still possible to explode the mixed vapours. On the other hand, the risks of explosion in the course of open ether anaesthesia were found to be very slight. Samples of air taken at a distance of two inches from the patient's mouth contained too small a percentage of ether to ignite, even after the anaesthetic had been in progress for one hour and ten ounces of ether had been used. Both ethylene and acetylene have proved explosive when mixed with oxygen for the purposes of anaesthesia, and cyclopropane, too, is a potential source of danger. This is, of course, only one side of the problem. Of even more importance to the anaesthetist is the source of the spark which may explode the anaesthetic mixture. A red-hot cautery or a diathermy electrode is an obvious danger, especially when used in or near the mouth. Less obvious are the risks attached to the use of electric light bulbs on oesophagoscopes or bronchoscopes. If these bulbs are loose or if the in-

[1] *Brit. J. Anaesth.*, 1937, 14, 115.

sulation is faulty a spark may arise, and at least two explosions appear to have been caused in this way. A hot dental needle has also been responsible for an explosion, though the temperature of the metal was below that required to produce red heat. Lastly, there are the sparks produced by static electricity. An anaesthetic explosion due to a discharge of static electricity formed the subject of a paper read by Dr. R. Ironside before the Section of Anaesthetics of the Royal Society of Medicine in March, 1935,[2] and some eighteen months ago the Minister of Health issued a memorandum[3] on the possibility of explosions in operating theatres, with particular reference to static electrical charging, which was considered at length in these columns.[4] In America several writers had already drawn attention to the possibility of the frictional electrification of equipment used in operating theatres.[5] Considerable static voltages were produced there, and regarded as creating a serious risk of anaesthetic explosion, merely by the movement of blankets over metal operating tables.[6] In this country the Medical Research Council, prompted by an Anaesthetics Committee set up jointly with the Royal Society of Medicine, in December, 1935, requested, through the medium of the Department of Scientific and Industrial Research, the assistance of the National Physical Laboratory in investigating the whole question of static electrification as it affected operating theatres.[7] A full account of the completed work is to be given by Dr. E. H. Rayner early in 1938, but meanwhile it is possible to adopt at least two methods for minimizing the risks involved. The rubber wheels of trolleys, etc., often provide insulation sufficient to allow dangerous charges to accumulate. As has been pointed out before, one method of preventing this accumulation is by earthing the metallic parts of the equipment by a light chain trailing on the theatre floor, which, though highly resistant, has usually sufficient conductivity to dissipate any static electrification which the equipment may acquire. Another method which promises to be most valuable, we are informed by the National Physical Laboratory, is the use of electrically conducting rubber for tyres, tubing, breathing bags, etc. Samples of rubber equipment of satisfactory conductivity have been made, and the application of such conducting rubber to anaesthetic and surgical equipment should go far to eliminate the dangers of anaesthetic explosions due to static electrification.

[2] *British Medical Journal*, 1935, 1, 551.
[3] Memo. 191 Med. H.M. Stationery Office. (1d.)
[4] *British Medical Journal*, 1936, 1, 74.
[5] *Anesth. and Analges.*, 1931, 10, 281.
[6] *New Engl. J. Med.*, 1933, 203, 949.
[7] *British Medical Journal*, 1935, 2, 1128.

THE MODE OF ACTION OF RADIATIONS ON CELLS

The radiotherapy of malignant disease has made remarkable progress on a mainly empirical basis, but it is becoming increasingly evident that the solution of certain important questions—for example, the selective effect of different wave-length radiations, the optimum dosage rate, the time interval between successive doses, and the duration of a course of treatment—depends upon accurate knowledge of the events which intervene between the irradiation of the cell and the biological result. Such fundamental knowledge is the object of intensive research in several centres both in this country and abroad, and a recent report by Dr. C. M. Scott[1] gives a coherent account of the nature of the biological action of x and γ rays, and suggests the ways in which further progress will be most profitably achieved. Dr. Scott points out that most of the disagreement between different investigators has been due to the absence of a quantitative outlook. The physical measurement of a dose of radiation is difficult, so that physical inaccuracies, combined with the inevitable inaccuracies of biological measurements, account for many disputes over matters of fact. In his own work Dr. Scott has used two types of tissue—the isolated frog's heart and the eggs of *Calliphora erythrocephala*—and by adequate controls and accurate measurements he has been able to show that the primary action of x and γ rays is entirely independent of the metabolic processes of the living cell. Thus the process by which x and γ rays injure living cells is unrelated to the respiratory system of the cell, to its glycolytic function, to its enzyme systems, to its nitrogen metabolism, to the viscosity of its protoplasm, or to its hydrogen-ion concentration. It therefore appears that the action of radiation is primarily exerted on the nucleus of the cell, and thereby on the cell processes which control growth. The conclusion is important, because much has been made of the apparent resemblance between the injuries due to irradiation and those due to other causes, such as temperature changes, oxygen lack, etc. Such agents tend to injure protoplasm generally: doses of radiation of the order of 100,000 r will produce such general non-specific effects, but doses of the order of 1,000 r—that is, of the therapeutic order—have only a specific effect by selectively injuring the nuclei of dividing cells. The action is a graded one, ranging from a completely reversible inhibition of growth to an inhibition that results in the death of the cell. The difference between the sensitivity of dividing cells and that of non-dividing cells is often enormous, and no such difference has been established for any type of injury except that produced by x and γ rays. The demonstration that the action of radiation is specifically upon the cell nucleus and that it is unrelated to other kinds of cell injury, and that, furthermore, it is of a graded character, leads to the conclusion that the "quantum hit" theory is quite untenable. This theory supposes that the survival curves of a number of cells exposed to radiation show the relation between the dose of radiation and the percentage number of cells that have received by chance a sufficient number of quantum hits to produce death. This is the theory adopted by most physicists to explain the varying radiosensitivity of cells. The alternative theory—that the survival curves express the distribution of the variation of the resistance of the individual cells irradiated—is that preferred by most biologists, and may now be said to be established. What is more, variations in radiosensitivity of different types of cells and of tissues at different stages of development are of far greater significance than the variations during the mitotic cycle of any particular type

[1] *Some Quantitative Aspects of the Biological Action of X and γ Rays.* By C. M. Scott. Med. Res. Counc. Spec. Rep., No. 223. H. M. Stationery Office. (1s. 6d.)

of cell. Dr. Scott emphasizes that radiations do not directly stimulate normal activities of the cell. Their primary effect is always an injury. Small doses of irradiation produce genetic effects or analogous changes in somatic cells, larger doses inhibit growth, and still larger doses result in so severe an injury that death of the cell results. As regards the time-intensity factor, he concludes that the biological effect of a given quantity of radiation is less when administered over a long time than when the same quantity is given in a short time, but that as the time is further shortened there comes a point beyond which the time-intensity factor ceases to influence the biological result. The time-intensity factor can be most simply explained in terms of the recovery processes of cells, so that further progress in the technique of radiotherapy depends upon greater knowledge of such processes. Dr. Scott also finds that the influence of the wave-length of a radiation is relatively small, producing biological actions that vary over less than a fivefold range. The general tenor of this report is a great encouragement to the radiotherapist in that a biological approach to the problems of the clinical use of radiations is shown to be of more importance than the physical; at the same time future progress depends upon careful measurement, both physical and biological, whenever any tissue is irradiated.

SPLANCHNIC PAIN

In a recent paper Leriche[1] describes the occurrence of pain on dividing the splanchnic nerves in two patients operated on under spinal anaesthesia extending from the first lumbar segment. Under perfect parietal anaesthesia the splanchnic nerves were exposed below the diaphragm through an incision under the twelfth rib. An attempt to divide with scissors the left greater splanchnic in a vigorous man suffering from thrombo-angiitis was followed immediately by complaint of severe pain in the region of the heart; this lasted until the central end of the partly cut nerve was infiltrated with novocain, when it disappeared at once; section of the lesser splanchnic was not felt. In a second patient suffering from hypertension partial division of the right splanchnic provoked a cry of pain, localized in the right lung. Again infiltration of the central end of the nerve arrested the pain. Leriche supposes first that the appearance in these patients of pain referred to the heart and lung must be attributed to events taking place in these organs. He suggests, therefore, that in man stimulation of the central end of the splanchnic nerve produces reflex vasoconstriction in the heart and lungs, and that such vasoconstriction gives rise to pain; some such reflex, he supposes, may be responsible for the well-known influence of meals on the occurrence of angina pectoris. The facts which Leriche brings forward are not as yet controversial, but it is quite unnecessary to invoke reflex vasoconstriction to explain them; there is no evidence that vasoconstriction in the lung produces pain, and, as Wayne and Graybiel[2] have pointed out, the influence of meals on angina pectoris is probably due not to a reflex from the stomach but to increased cardiac output. It is certain that pain can be evoked from the abdominal viscera under certain circumstances, such as distension, and it is known that such pain is often referred to a part of the body surface not overlying the offending viscus. It is probable that the nerve impulses responsible for visceral pain travel with the sympathetic nerves, including the splanchnic, and it may be suggested that the pain in Leriche's cases was a direct appreciation by the sensorium of the afferent impulses set up in these nerves by mechanical stimulation. Reference of pain to heart and right lung suggests that the afferent fibres in the left nerve came chiefly from the stomach, and in the right nerve from the region of the liver, or diaphragm.

[1] *Presse méd.*, 1937, 45, 971.
[2] *Clin. Sci.*, 1933–4, 1, 287.

LORD NUFFIELD HONORARY FREEMAN OF THE SOCIETY OF APOTHECARIES

Lord Nuffield's great and generous services to medicine received further recognition this week when on August 17 the honorary freedom of the Society of Apothecaries was bestowed upon him at a full meeting of the Court of Assistants. Introducing to the Court "our distinguished visitor, whom you are about to admit to the honorary freedom of this ancient society of craftsmen," Dr. E. W. Ainley Walker said that Lord Nuffield was especially known to the medical profession by the splendour of his munificent benefactions to medicine and by the magnificence of his noble deeds. In every department of sound and sane humanitarian effort his name held a foremost place. The extent of his generous gifts and immense endowments was almost unprecedented. The greater part of these had been devoted to the alleviation of suffering and the improvement of the health and well-being of the less favoured of his fellow countrymen. The Master of the Society of Apothecaries, Dr. A. P. Gibbons, then presented to Lord Nuffield the certificate of freedom in a casket of cedar wood cased in royal blue morocco leather, bearing the Society's coat of arms in gold. The ceremony was followed by a Court dinner. It is customary at Court dinners that there should be no speeches, but on this special occasion the Master said he would break the custom. In proposing the toast "Our New Honorary Freeman," he said in a brief and gracious speech that Lord Nuffield had conferred enormous benefits on medicine and humanity in general, and had honoured them by accepting the freedom of the Society. In reply, Lord Nuffield said that he would like them to feel how deeply he appreciated the honour bestowed upon him. He would in the future try to continue to do what he had done in the past, and to help medicine and surgery and the teaching that brought about the results that were being achieved to-day. He would do what little he could to alleviate human suffering. Those who had the advantage of good health should help those who were less fortunate.

We print at p. 394 a letter from Sir Frank Colyer asking for gifts of old types of instruments for the extraction of teeth, especially the early nineteenth century types. It will be much appreciated if any reader possessing these will forward them to the Royal College of Surgeons, where they are wanted for the odontological section of the museum.

ANAESTHESIA IN GENERAL PRACTICE

This is one of a series of articles, contributed by invitation

BASAL ANAESTHESIA FOR SHORT OPERATIONS

BY

J. H. T. CHALLIS, M.R.C.S., L.R.C.P.

As this article is intended essentially for those general practitioners desiring to administer basal anaesthetics four main principles have been kept constantly in view. All practical technique will be dealt with in detail so far as possible. Dosage has been selected with the idea of playing for safety. Expensive apparatus and elaborate technique have been avoided. Only those drugs which have been duly tried and found by constant use to be satisfactory to anaesthetists will be described.

Evipan and Pentothal Sodium

Basal anaesthetics of note for short operations can be limited to evipan and pentothal sodium. The first is produced by Bayer's Products Ltd., London, and the second by Abbots Laboratories, Ltd. They are both administered by the intravenous method, and have many properties in common. The advantages of these basal anaesthetics other than as a premedication can be summed up as follows. They provide a most pleasant form of inducing anaesthesia. There is some elimination of post-operative vomiting. By their use irritating inhalants are avoided. There is quick recovery of consciousness.

Patients who are going to be given a basal anaesthetic should be in a nursing institution and under the direct care of the nursing staff for at least twelve hours following anaesthesia. In a great number of cases this is impossible, but every care should be taken that the patients are properly looked after, as in a few isolated instances mental symptoms have occurred after an apparently perfect return to consciousness even as late as some eight or ten hours following administration of the drugs.

Pre-operative Preparation

Though it is not absolutely essential premedication by omnopon 1/3 grain and scopolamine 1/150 grain at least one hour before the induction of anaesthesia is of value, doses naturally being diminished in the case of young people or the old and feeble.

Although many prolonged operations have been performed under these basal anaesthetics it is not considered advisable, except for those with considerable experience, to employ them for surgical procedures lasting more than from ten to fifteen minutes. As the time of anaesthesia is limited it is desirable that all pre-operative preparations should be carried out before the induction, probably the most important of these being the placing of the patient, if possible, in the necessary position for a particular operation. Once the needle has been introduced into the vein gross movements of the patient, such as turning him into the left lateral position, tend to displace the needle and necessitate reintroduction. In the lithotomy position the patient can be placed well down the table, though the actual elevation of the legs need not be attempted until anaesthesia has been obtained.

It is as well to mention that these barbiturates cause a fall of blood pressure, and it is therefore not advisable to administer them other than in the recumbent position; although it must be admitted that this is constantly done with apparently little ill effect, as in dental operations.

Preparation of Evipan and Pentothal Sodium

Evipan is supplied in a glass ampoule holding one gramme of white powder, and with it another ampoule of 10 c.cm. of sterile water. The two are thoroughly mixed some ten minutes before use, and are then drawn up into an ordinary 10 c.cm. Record syringe with an eccentric nozzle, thus making a 10 per cent. solution. Pentothal sodium is also put up in ampoules containing either 0.5 gramme or 1 gramme, and is yellow in colour: 10 or 20 c.cm. ampoules of sterile water are purchased separately. The water and pentothal sodium are mixed together so as to prepare either a 5 per cent. or a 10 per cent. solution. Neither of these preparations should be used if it has been mixed for more than two hours.

Syringes and needles employed for intravenous work can be sterilized either by being kept in spirit or by boiling. The latter tends to be expensive as so many syringes crack. Whichever method is adopted it is well to wash all the parts thoroughly in distilled water before using. The skin should be cleaned with spirit or iodine before introducing the needle. For actually mixing the preparations an old spinal needle is of great advantage, as it is sufficiently long to go to the bottom of the ampoule, thus thoroughly mixing the contents without spilling them, and leaving the intravenous needle ready for use in perfect condition.

Method and Technique of Administration

Before deciding to administer either of these basal anaesthetics it is as well to examine the patient and to ascertain if he or she has suitable veins for an intravenous injection. There is no greater disappointment to the patient or the anaesthetist than failure of this type of anaesthesia if it has once been promised. Any vein that appears to give easy entry will do, with the exception of a varicosed one, in which the drug is likely to stagnate, thus producing slow anaesthesia, possibly thrombosis, or damage to the vein.

The vein selected (usually the median basilic in the antecubital fossa is most convenient), manual pressure is applied or a constricting band is placed above the site chosen and sufficient pressure exerted to engorge the vein but not to impede the arterial pulse. This is best done by an assistant constricting the arm above and steadying the patient's wrist below. Any tourniquet that cannot be immediately and smoothly released tends to change the position of the intravenous needle and jerk through or out of the venous wall. A sharp needle with a short bevel, about 1½ inches long, size No. 17, is most suitable. Blood is aspirated into the syringe to ascertain whether the needle is in position; when it is, it is most important that the manual pressure or constricting band should be completely released, otherwise it is possible for a large dose of the injection suddenly to be liberated into the blood stream.

Two to three c.cm. are injected in about fifteen seconds, during which time the patient is encouraged to talk or asked to count. Unconsciousness occurs in about fifteen to thirty seconds. A safety pause in the administration is very advisable at this point to ensure that the patient's

condition is within the normal limits of safety. The time taken to inject the next 3 or 4 c.cm. should be approximately thirty seconds, when another safety pause is essential, after which, if it is deemed necessary, the remainder of the syringeful can be injected.

The main points to watch during the whole time of administration are that (1) the patient has a perfect airway and the jaw is well supported; (2) depression of respiration is not allowed to progress too far; (3) the pulse rate should not rise. Should it be thought necessary to prolong the anaesthesia the syringe can at this stage be refilled in preparation for further injections. If anaesthesia is being used for operations in the mouth it is essential that a prop or gag should be introduced before the onset of anaesthesia, as spasm of the jaw may make the operation difficult if not impossible.

The signs of the onset of anaesthesia are slurring speech and depressed respiration; nystagmus; sometimes sighing or yawning; pupils small and turned down, later becoming central; early loss of corneal reflex. During the induction stage tremors or movements may occur with evipan, but rarely with pentothal sodium.

Indications and Contraindications

Basal intravenous anaesthesia may be used as a premedication to put patients completely to sleep in their beds; for short surgical procedures such as dental extractions, insertion of radium, dilatation and curettage, eye operations, painful dressings, etc; to counteract ether convulsions; for childbirth, especially in mental patients—when 2 c.cm. of 10 per cent. pentothal sodium should be given at the onset of strong pains, 2 c.cm. more after one minute, and then 1 c.cm. as required.

The following are contraindications to basal intravenous anaesthesia.

1. Patients who have any respiratory obstruction or dyspnoea. Operations on the air passages.

2. Liver diseases or any impairment of its function. Kidney disease is not considered a contraindication, but should this be advanced it would be well to avoid this type of anaesthetic.

3. In children, in whom small air passages make it difficult to maintain a perfect airway. It is also difficult to give intravenous injections to a child.

4. Hypotension, hypertension, and myocarditis are poor anaesthetic risks generally.

5. Toxic patients, who take a long while to eliminate the drug.

Comparison of Evipan and Pentothal Sodium

Those about to embark on intravenous anaesthesia would be advised to start with evipan, for the following reasons. Should the drug be injected into the tissues outside the vein no local reaction will occur with evipan, although there will be a failure of anaesthesia; with 10 per cent. pentothal sodium acute local inflammation and even ulceration may take place, especially if not recognized and treated immediately with hot packs for five or six hours. Even with a 5 per cent. solution local reaction may occur and should be carefully treated. Respiratory depression is less marked with evipan. The depth of anaesthesia is usually not so great with evipan. Some patients complain of a smell or taste of sulphur after anaesthesia with pentothal.

The advantages of pentothal sodium are as follows. The induction is smoother and there is less likelihood of twitching and jactitation, which do occasionally occur with evipan, especially if it is mixed immediately before use. The fall of blood pressure is less marked. The depth of anaesthesia is more profound. Therefore, if a 10 per cent. solution is used its rate of injection should be much slower than as described in a previous paragraph, and a third or even fourth safety pause introduced during the injection of the 10 c.cm. Premedication is not essential, but, if given, much smaller doses of pentothal are required. Post-operative vomiting when pentothal has been administered alone is practically unknown.

Antidotes

The main complications are respiratory depression or respiratory embarrassment caused by lack of a perfect airway. The obvious remedy is to maintain so far as possible a perfect airway and to administer respiratory stimulants. By far the most efficient is carbon dioxide, 5 per cent. or 7½ per cent. in oxygen, administered under slight pressure in a closed bag. Lobeline 3/20 grain may be injected subcutaneously, or, in bad cases, intravenously. Coramine, 5 c.cm. hypodermically or 3 c.cm. intravenously, is of the greatest value in cases of collapse.

In the event of a patient becoming restless and more or less uncontrollable following this type of anaesthesia the intravenous injection of omnopon 1/3 grain will be found immediately to have the desired quietening effect.

The annual congress of the Chartered Society of Massage and Medical Gymnastics will be held at the London School of Economics, Houghton Street, Aldwych, W.C., from Monday, September 20, to Friday, September 24. The meetings are open to all medical practitioners, and lectures will be given as follows: September 20, 10.30 a.m., Professor G. R. Girdlestone, "Treatment of Scoliosis in an Orthopaedic Hospital"; 12 noon, Miss Maud Forrester-Brown, M.S., M.D., "The Place of Physiotherapy in the Treatment of Injuries"; 2.30 p.m., Mr. K. O. Parsons, "Treatment by Manipulation." September 21, 10 a.m., Mr. A. Lawrence Abel, "Surgery of the Sympathetic Nervous System"; 11.30 a.m., Mr. J. G. Yates Bell and Dr. F. S. Cooksey, "Faradism and Pelvic Floor Exercises for Urinary Incontinence"; 2.30 p.m., Dr. A. T. Todd, "A System of Treatment for Chronic Rheumatism"; 8.30 p.m., Dr. Noel Harris, "Hysteria." September 22, 10 a.m., Dr. Doris M. Odlum, "Psychological Factors in Physical Disease"; 11.30 a.m., Mr. H. J. Seddon, "The Application of Occupational Therapy to Orthopaedic Conditions"; 2.30 p.m., Dr. W. S. C. Copeman, "Chronic Rheumatism." September 23, 10 a.m., Mr. A. E. Porritt, "Ruptures—Ancient and Modern"; 11.30 a.m., Lady Barrett, "Effect on Maternity of Physical Activities during Adolescence"; 2.30 p.m., Mr. A. Wilfrid Adams, "Orthopaedic and Other Operations under Spinal Anaesthesia"; 6 p.m., Miss E. R. Clarke, "Development of the Movement to Improve the Physical Fitness of the Nation"; 8.30 p.m., Dr. J. Kalmanson, "Indications for Short-wave Therapy." September 24, 10 a.m., Mr. E. R. Desoutter, "Artificial Limbs"; 11.30 a.m., Dr. Clement Nicory, "Importance of the Physical Therapeutist in Preventive Medicine"; 2.30 p.m., Dr. R. L. Kerr, "Remedial Exercises in the Treatment of Abnormalities of Binocular Vision and Asthenopia"; 6 p.m., Miss Ann Driver, "Music and Movement"; 8.30 p.m., Founders' Lecture by Mr. H. A. T. Fairbank, "Some Unusual Causes of Backache." The annual general meeting will be held on September 20, at 5.30 p.m., and will be followed, at 8 p.m., by a debate and discussion. The annual dinner will be held at the Café Royal, Regent Street, W., on September 22, at 7.30 p.m. Arrangements have been made for visits to be paid to various hospitals and institutions during the congress, and practical classes will be held daily. Applications for tickets and for all information regarding the exhibition and annual dinner should be made to the secretary, Chartered Society of Massage and Medical Gymnastics, Tavistock House North, Tavistock Square, W.C.1.

INTERNATIONAL HEALTH

SURVEY OF THE PERMANENT COMMITTEE

The report of the medical director of the International Health Office of the proceedings at the session of the Permanent Committee in May, 1937, has now been issued.[1] Dr. M. T. Morgan of the Ministry of Health was the delegate of the United Kingdom. It was reported that Turkey, Greece, and Czechoslovakia have further ratified the Convention for Mutual Protection against dengue fever, signed at Athens in 1934. An international arrangement to overcome difficulties connected with the transportation of corpses has been signed by the plenipotentiaries of nine countries. With regard to the Brussels Agreement, 1924, for the treatment of sailors suffering from venereal diseases, the adhesion of Germany was noted, as was the receipt of further replies favourable to the acceptance of the Committee's recommendations on the organization of the treatment to be offered. Communications from several countries and observations made in Great Britain and Australia concerning the deratization of ships confirm the fact that the number of ships with a large rodent population on board has strikingly diminished. Other interesting problems which were discussed arose in connexion with the Mecca Pilgrimage and the danger of the spread of yellow fever by persons using international air lines.

Plague

Papers on this subject included a general survey of plague in French Colonies (West Africa, Madagascar, and Indo-China) in 1935 and 1936. In Indo-China there have been few cases in recent years, but the disease persists in three restricted foci where it assumes a seasonal character, the greater number of cases occurring during the hot weather. Most of the cases are sporadic, and there is no apparent connexion between them and murine plague; the proportion of primary pneumonic plague cases is 10 per cent. In Madagascar plague has been gradually extending, particularly towards the south, ever since its introduction in 1921. In 1935 and 1936 the proportion of pneumonic cases was 28 and 27 per cent. respectively. This form of the disease is present all the year round, but especially in the cold season. The other forms are most common in the hot weather, corresponding with the prevalence of *Xenopsylla cheopis* and the existence of murine epizootics. Although thousands of rats were examined (75,339 in six years) few plague-infected ones were found.

For anti-plague vaccination in French West Africa various killed vaccines are widely used; they do not seem inefficacious, but are not of great service for plague prophylaxis. In Madagascar 710,852 persons out of a million inhabitants in the plague zones have been vaccinated with Girard and Robie's living avirulent virus. The results were unfavourably influenced by the fact that the experiment coincided with a violent outbreak, and the vaccination could not be carried out in all districts before the epidemic reached them. In spite of this the approximate number of 2,000 cases for 1936 compares well with the average of 3,500 for preceding years. In the best vaccinated districts (77 per cent. of the population) the morbidity rate was 0.59 per 1,000, as against 3.6 in the control districts.

Cholera

Work has been done in India, under the direction of the Consultative Committee for Cholera of the Indian Research Fund Association, to determine if possible the true characteristics of cholera vibrios. Agglutinating sera of pure type O were used, obtained by injecting into a rabbit heated dried antigens, furnished by Bruce White and Gardner. The strains employed were the original type Inaba and the type called "variant" of Ogawa, representatives of Group I of the classification of Gardner and Venkatraman. This vibrio possesses the fermentative properties for sugars which characterize Type I of Heiberg: fermentation of mannose and of saccharose, but no fermentation of arabinose. Its reaction to cholera red is positive, and to the Voges-Proskauer reaction modified by the addition of naphthol-A negative. It does not haemolyse goat's blood. The two Japanese strains "Inaba" and "Ogawa" show all these biochemical characters, but from a serological point of view they have a distinct individuality. Thus for diagnosis two sera prepared respectively from these two strains, or more generally a bivalent serum, must be used.

Colonel Taylor's report tends to show that vibrios not agglutinable by Type O serum which have been isolated from clinical cases of cholera are not true pathogens; the true cholera vibrio may have escaped discovery, and the non-agglutinable vibrio which had been isolated may belong to a type which is perhaps present in the intestine of a fraction of the healthy population. Many of the strains which are not agglutinable by O type serum, and which are not isolated from clinical cases of cholera, of show H agglutination. However, some vibrios isolated in the recent researches from clinical cases of cholera, of which some gave and others did not give typical biochemical reactions, showed H agglutination only. It seems, then, that it is not yet possible to use O type sera exclusively for the diagnosis of pathogenic cholera vibrios.

Yellow Fever

Continued researches in South America by the yellow fever services of Brazil and Colombia, in co-operation with the Rockefeller Foundation, have confirmed the existence of the so-called "jungle" yellow fever in rural areas in which there are very few inhabitants and no *Aedes aegypti*. The problem lies in discovering other possible hosts than man and other blood-sucking vectors than the Aedes.

In Great Britain vaccination against yellow fever has been performed with a pantropic virus attenuated by tissue culture without the addition of immune serum. Observations made on sixty-five cases would seem to justify the use of the virus in this manner. Repeated passage through rhesus monkeys does not seem to increase virulence, consequently a return to a virulent form need not be feared, nor does the virus appear likely to become neurotropic. Experimental infection of mosquitos by virus circulating in the blood of humans or monkeys has not yet been effected.

Small-pox

As a result of the extension of vaccination and revaccination against small-pox, this disease has practically disappeared from the U.S.S.R. There were 385 cases in 1936, and none in the first quarter of 1937; 47,461,305 vaccinations or revaccinations were carried out in 1935, and 39,869,718 in 1936. The usefulness of vaccination has been confirmed by experience in the war in Ethiopia. While there were numerous cases of small-pox among the Abyssinians, there was only one case in the Italian Expeditionary Force, all the members of which had been revaccinated. In Italy it is proposed to give vaccination against small-pox and the first injection of diphtheria anatoxin simultaneously; the second injection of anatoxin will be given ten days later; the age prescribed for vaccination will be the second year, a time preferable for diphtheria immunization, which will be made compulsory.

Other Infectious Diseases

In New Zealand an epidemic of poliomyelitis broke out at the beginning of December, 1936; by the end of March, 1937, 341 cases had been notified. In the first three months of the epidemic the percentage of non-paralytic cases was 42.9. It was considered necessary to close all the schools in New Zealand.

[1] Paris: Office International d'Hygiène Publique, 195, Boulevard St. Germain.

In the United States small, violent, and localized epidemics of cerebrospinal meningitis appear about every seven years. The most recent (1935–7) seems to be on the decline. Some are produced by a single type of meningococcus, others by several types; type I-III (type A in France) is the most frequent during the epidemic periods.

Epidemics of encephalitis, similar to the so-called St. Louis encephalitis, which has been prevalent in the United States, occur in Japan more or less every year in certain prefectures. The virus has been transmitted to monkeys by inoculation of the cerebral matter of dead persons, and then to the mouse, which is the most receptive laboratory animal; it is present in the brain of patients from the fourth to the tenth day of illness, and cannot be shown after the tenth day.

The increased incidence of scarlet fever in Rumania in recent years led to a campaign of inoculation by streptococcal anatoxin in 1934. Four injections were given at intervals of two and three weeks; in Bucarest 25,000 children were inoculated. Those that subsequently contracted scarlet fever were compared in two groups, one of 229 inoculated and the other of 776 non-inoculated children. Among the former there were more mild cases, fewer complications, and fewer cases of ulcero-necrotic angina (3.1 instead of 13.8 per cent.) and malignant scarlet fever (0.44 instead of 2.2 per cent.). The total mortality amounted to 0.44 per cent. among inoculated and 7.2 per cent. among non-inoculated children.

Tularemia

Tularemia has made its appearance in Central Europe (Lower Austria, Moravia, and Slovakia) and in Turkey in Europe. The first case in Lower Austria was notified in 1925, and the second in September, 1936, followed by about a hundred cases in the adjoining district on the Moravian frontier. Then the disease appeared in Southern Moravia at the end of October, 1936. Thirty to forty-five days before the first human cases a great mortality was reported among field voles and then among hares. From Moravia the disease spread to the southern part of Slovakia. In all, up to April 15 there were 391 cases in Czechoslovakia, of which 277 occurred in Moravia, 110 in Slovakia, and 4 at Prague (caused by hares coming from infected districts). The forms were glandular and ulcero-glandular, and occasionally typhoidal; there were also oculo-glandular forms, with slight ocular lesions. Contact with hares was proved in 90 per cent. of cases; the others were caused by contact with wild rabbits and mice. The place of entry was sometimes a small skin wound, but in other cases the place of the initial lesion seemed to be the mouth or throat, and the illness began with angina accompanied by extensive oedema.

In Turkey the first cases were discovered in June, 1936, among soldiers in the garrison of Luleburgaz in Thrace, and continued to occur up to the end of September. The forms were generally glandular or oculo-glandular (32 per cent.); none were typhoidal. *Bacterium tularense* was isolated from human cases. The infection would appear to come from wild rabbits. It may have been transmitted by insects in some cases, but investigations which were made on this point—possibly too late—were not conclusive.

D. Ciddio (*Policlinico*, Sez. Chir., May 15, 1937, p. 246) in order to determine the results on the kidney of the removal of the aortico-renal ganglion which forms part of the coeliac plexus, carried out the operation on six dogs under morphine and chloroform anaesthesia. He studied successively the functional changes in the corresponding kidney and also the histological lesions. In the first few days after the operation he found that the kidneys showed a considerable vasodilatation followed by vasoconstriction, and finally at the end of two and a half months a return to the normal condition. He comes to the conclusion that this operation might be indicated in suitable cases.

Local News

ENGLAND AND WALES

London Chest Hospital Pathological Laboratories

The report for 1936 of the Pathological Laboratories of the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park—to be known from now on as the London Chest Hospital—contains the usual summary of post-mortem records and of the routine laboratory examinations carried out for the out-patient department and in the in-patients. They totalled no fewer than 10,307. In addition 1,981 examinations were undertaken for various public bodies, consisting mainly of the examination of milk samples, swabs for diphtheria, and histological examinations. The report also contains reprints of four papers published by the staff of the laboratories. Three articles are by Dr. Gloyne. The first describes the morbid histology of pulmonary abscess cavity walls: in one case the cavity was bronchogenic, in the other associated with an interstitial abscess. In the second paper are given the results of an investigation into the relation of congenital heart disease to pulmonary tuberculosis. The 2,735 necropsy records at the hospital between 1889 and 1935 showed twenty-one cases of defects of the heart "which may be presumed to have been congenital." Six of these had tuberculous pulmonary lesions. But such lesions were not present in the six cases of congenital heart disease that were associated with cyanosis. Dr. Gloyne's third paper gives an account of a case of oat-cell carcinoma of the lung occurring in asbestosis. The last paper is by Dr. Shishkin. She concludes from her investigations that there is no evidence that infection of rabbits with virulent bovine tubercle bacilli has any effect on the *p*H of the blood.

Medical Society of London

The first half of the session 1937–8 of the Medical Society of London will open on Monday, October 11, with the annual general meeting at 8 p.m., followed by Mr. J. E. H. Roberts's presidential address on "Sick Nursing—Past, Present, and Future" at 8.30 p.m. On Monday, October 25, at 8.30 p.m., a discussion on treatment by intravenous infusion will be introduced by Dr. George Graham, Mr. G. Gordon-Taylor, and Dr. H. I. Coombes. A discussion on national physical training will be opened by Sir Joseph Barcroft, F.R.S., Lord Burghley, Dr. Adolphe Abrahams, and Mr. A. E. Porritt, on Monday, November 8, at 8.30 p.m. A clinical meeting will be held on Monday, November 22, at 8 p.m. On Monday, December 13, at 8.30 p.m., Mr. H. W. Rodgers, Dr. G. T. Calthrop, and Dr. S. Cochrane Shanks will introduce a discussion on modern methods of investigating gastric diseases. The Lettsomian Lectures, on a survey of the changes and results of treatment of diabetes in the last fifteen years, will be delivered by Dr. George Graham on February 21 and March 2 and 7, 1938, at 9 p.m. Sir Henry Gauvain will deliver the annual oration on "Planning a Hospital" on Monday, May 9.

Cancer Research in Yorkshire

The annual report for 1936–7 of the Yorkshire Council of the British Empire Cancer Campaign records a benefaction of £25,000, the gift of one of the honorary treasurers, Sir Algernon Firth. The report includes accounts of the progress of cancer research in the Universities of Leeds and Sheffield. In a study of the problem of industrial cancer of the bladder attempts were made to demonstrate the presence of carcinogenic constituents in the urine of workmen employed in the aniline dye industry. Large quantities of urine were extracted and tested for carcino-

genic activity by painting the skin of mice. The results of these tests, however, were completely negative. In the course of experiments on the action of different chemical substances on cancerous growths, with a view to the discovery of some substance specifically destructive to the growth while not unduly toxic to the body, the action of iodine on Rous sarcoma was investigated. The filterable agent was found to be very susceptible to minute quantities of iodine, a dilution of 1 in 5,000 always destroying the power of carcinogenesis when added to a cell-free filtrate. With a concentration of not less than 1 in 750 the filterable agent in sarcomatous cells was killed. The action of iodine thus appeared to be superior to that of potassium permanganate, which had been investigated in the previous year, a concentration of 1 in 200 of this salt being necessary to destroy the filterable active substance. In a further series of experiments, however, the effects of intravenous injection of iodine on fowls bearing Rous sarcomas were disappointing.

SCOTLAND

Mental Hospitals' Pathological Scheme

The annual report for 1936 of the Scottish Mental Hospitals Pathological Board records a marked increase in the amount of material examined. The report refers with regret to the resignation of the Board's pathologist, Dr. J. A. Biggart, who has been appointed to the Chair of Pathology at Queen's University, Belfast. It is stated that Dr. Biggart was responsible both for the organization of the work of the laboratory and for the formation of a valuable collection of photographs, specimens, and slides, in addition to routine examinations and original research. His successor is Dr. A. C. P. Campbell. In order to foster relations between clinical workers and the laboratory the Board has instituted quarterly demonstrations on the pathological aspects of mental disease for the medical officers of contributing hospitals. Although the possibility of some form of itinerant laboratory, or even the eventual provision of several laboratories in the asylums themselves, is envisaged in the future, it is considered that the present laboratory in the Edinburgh Royal Infirmary meets satisfactorily the needs of the moment. Under the existing arrangement it is in close touch with the general pathological laboratories of the University and the Infirmary, and also with other research laboratories, while its contacts with the asylums are not impaired.

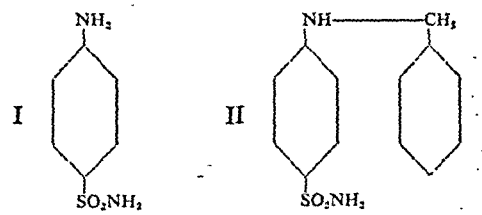
Scottish Health Education Campaign

A conference of representatives of Scottish local authorities was held in Edinburgh on July 29 at which Mr. Scrymgeour Wedderburn, Parliamentary Under-Secretary of State, outlined the proposals for a health education campaign in Scotland during the coming autumn and winter. He explained that the Prime Minister was to inaugurate a National Campaign at a conference to be held in London on September 30, and it was hoped that the Scottish local authorities would be prepared to give their full co-operation. The plan of the campaign to be followed in England was to enlist at the outset the public interest in the health services generally, and thereafter to concentrate month by month on giving publicity to the various individual services. It was proposed, however, that the campaign in Scotland should take rather a different line and aim not only at urging the fuller use of the existing services but also at encouraging the maximum development of those services within the framework of existing legislation. During the autumn months full publicity would be given to the Scottish health services, and for this purpose the Department of Health for Scotland was prepared to provide local authorities with publicity material. Following this initial campaign there would be a preparatory stage during the winter and spring leading up to a further intensive effort in the summer of 1938 associated with the Empire Exhibition in Glasgow. There would be close association with the Physical Training and Keep Fit Movement in Scotland. The campaign would obviously depend very largely for its success upon the efforts of local authorities in carrying out local propaganda work.

Correspondence

Nomenclature of Sulphanilamides

SIR,—In a letter from Dr. Alfred Model (*Journal*, August 7, p. 295) there appears to be some confusion between *p*-aminobenzenesulphonamide and *p*-benzylaminobenzenesulphonamide. The former drug is the amide of sulphanilic acid (I), and the term "sulfanilamide" has been adopted for it by the Council for New and Non-official Remedies of the American Medical Association. It is distributed in this country under several proprietary names, such as prontosil album (Bayer), sulphonamide-P (Burroughs Wellcome and Co. and British Drug Houses), streptocide (Evans Sons Lescher and Webb). The latter drug, *p*-benzylaminobenzenesulphonamide (II), is distributed in this country only by Pharmaceutical Specialities (May and Baker) Ltd., under the proprietary name of proseptasine.



These two substances differ considerably in chemical, physical, and pharmacological properties (Halpern, B. N., and Mayer, R. L., *Presse méd.*, 1937, **45**, 747; Whitby, L. E. H., *Lancet*, 1937, **1**, 1517), and it is therefore of the greatest importance to avoid confusion between them. Further, it is probable that more members of this group will be introduced into medical practice, so that accuracy in nomenclature is essential. For this reason I suggest that we should follow the example of Dr. A. T. Fuller (*Lancet*, 1937, **1**, 194), and of the Americans, and use the term *sulphanilamide* for any brand of *p*-aminobenzenesulphonamide, and the term *benzylsulphanilamide* for any brand of *p*-benzylaminobenzenesulphonamide, since these names are reasonably convenient and are chemically specific.

The case of agranulocytosis recorded by Dr. Model is, I believe, the first to be associated with benzylsulphanilamide; some half-dozen have been associated with sulphanilamide, and at least one (Borst, J. G. G., *Lancet*, 1937, **1**, 1519) with the original (insoluble) red prontosil.—I am, etc.,

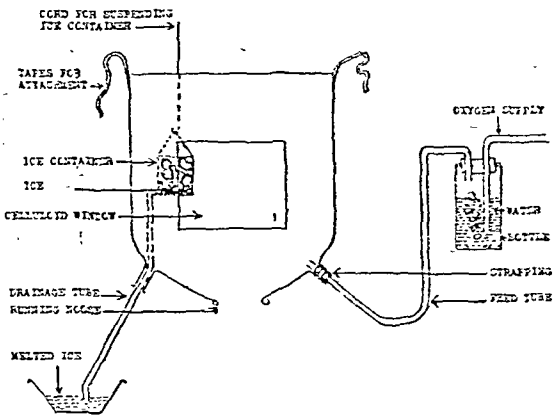
G. DISCOMBE.

St. Bartholomew's Hospital, London, E.C.1.
Aug. 10.

"Home-made" Oxygen Tent

SIR,—It was with great interest that I read in the *Journal* of April 17 (p. 812) a description of the St. George's Hospital oxygen tent. I attach a photograph of an oxygen tent which was constructed by the sailmaker on board and used with great success in H.M.S. *Shropshire* for a case of myocardial degeneration with con-

stive heart failure. The material used was jaconette, lightweight and waterproof material which is almost ansparent. The tent was constructed in the shape of square funnel, the bottom being fitted round the atient's neck by means of a running noose and the p left open and attached to the cot above. A cleared -ray film was stitched to the front as a window. The xygen was led through a rough flowmeter and was not ed. It entered the bottom of the tent and the tube was ecured to the jaconette by means of surgical strapping. n irrigation can full of ice was, however, suspended side the tent with a rubber tube to lead the melted e away.





The whole thing took about an hour to make. Any housewife worth her salt could make a similar one in as short a time. Its therapeutic efficiency was manifest. On April 7, for instance, an impending Stokes-Adams fit was staved off by its use. The patient was extremely cyanosed, with a completely irregular pulse which had slowed from 100 a minute to 40, and was complaining of acute precordial pain. He was very dyspnoeic, respirations being 36 a minute. There was twitching of the muscles of the face and arms. Before the onset of the slow pulse gallop rhythm had been present, with a well-marked mid-diastolic sound, and pulsus alternans had been felt at the wrist. He was placed in the tent at 2.30 on the afternoon of April 7, and half an hour later the cardiac pain had completely disappeared. At 6 p.m. the patient was a good pink colour, with a pulse of 100, strong and regular, and no bruit de galop present. Respirations were 20, and he was sitting in the tent reading a book. He was kept on board twelve days altogether, and for a large part of the time the tent was in use. He was perfectly happy inside it, the atmosphere always kept cool and fresh, and the celluloid window never misted over. He used to study his face with a small mirror and watch the colour gradually change from blue to pink on being put into the tent after a meal. When he was finally landed at Gibraltar oxygen was no longer necessary, and he could actually lie flat on his back without dyspnoea. The tent was light in weight and the material let so much light through that its use was never oppressive. It was found that it was important to keep the ice can replenished.—I am, etc.,

A. J. GLAZEBROOK,
Surgeon Lieutenant, R.N.

H.M.S. *Tedworth*, July 20.

Elongation and Dilatation of the Colon

SIR,—Professor J. R. Learmonth's conclusions on the above condition of the colon in children (*Journal*, July 24, p. 154) support the views I have formed from radiological observations on adults. The digestive tube possesses three main functions—secretion, absorption, and motility. Only the last of these interests the radiologist, with, in addition, a subsidiary function of storage. The search for organic lesions has induced radiologists to devote time to the study of anatomical appearances, and rather to ignore functional activity, because the latter is more difficult to assess.

Muscle, voluntary and involuntary, possesses two properties, tone and contractility. In the digestive tract contractility is recognized by various types of peristaltic action, and it is also well known, though not always appreciated, that peristalsis exhibits wide variations in health. For this reason its significance in pathological processes is difficult to assess, and it is often ignored therefore by the radiologist. Tone, the other property of muscle, is responsible for striking variations in the width and length of the alimentary tube in healthy individuals. More frequently than in the case of peristalsis have these normal variations been misunderstood by the radiologist. Such mistakes were largely responsible for the useless gastropexies and colopexies of former days, and to-day are responsible for the stress laid in some quarters on duodenal ileus, which is really a rare disease, though often simulated by the hypotonic duodenum.

Functional disturbances of the colon are common and occupy much of the physician's time, but the radiological evidence of their origin and even their presence is apparently trivial and very difficult to identify with certainty. All too often physiological variations are confused with some pathological process, because the variations are surprisingly wide in healthy persons. Too often, also, has the radiologist himself relied upon the clinical evidence for help in interpretation, and has converted a physiological variation into a pathological process. The "would-be" faddist physician and surgeon have often found support for some attractive theory from these unreliable *x*-ray reports.

Unlike Sir Arthur Hurst, whom Professor Learmonth quotes, I think a barium enema gives a good estimate of bowel tone rather than of mere distensibility when certain conditions are complied with. It depends on how the enema is administered: let a thinner suspension of barium be used and allowed to flow through a tube without any obstruction in its lumen at a constant pressure until an evacuation is threatened. If the sphincter ani possesses reasonably good tone and the patient's mentality is reasonably normal and there is no acute inflammatory condition within the abdomen, especially in the peritoneum, then the diameter of the colon forms a reasonably sound index of the colonic tone.—I am, etc.,

JOHN R. WYLIE.

London, W.1, Aug. 12.

When to Operate in Appendicitis

SIR,—May I reply to two letters which have appeared in the *Journal* in connexion with operation in acute appendicitis: one was by Mr. R. Rutherford (July 31, p. 244), and the other by Mr. R. S. Lawson (August 7, p. 294).

Mr. Rutherford suggests that the family doctor can carry out expectant treatment in the patient's home. This treatment requires nursing in a high Fowler's position, which necessitates the importation of a special bed, and constant charting of the pulse and temperature, which implies day and night nursing. I agree that in some homes these facilities might be provided, and possibly the usual domestic noises, including the telephone, which are so irritating to a sick person, might be stilled. But even if the patient can be nursed under the best conditions there still remains the 10 per cent. risk that expectant treatment may fail. An operation then becomes an urgent necessity, and either the patient must be transported to a hospital or nursing home when he should be enjoying absolute rest, or he must be subjected to an abdominal operation in an improvised theatre. An abscess can certainly be opened within "four walls and a roof," even if lighting facilities are rather poor, but most surgeons would prefer a recognized theatre in which to remove a possibly difficult appendix.

Mr. Lawson quotes a case in which a patient ignored "emphatic instructions" to return for appendicectomy after the successful drainage of an abscess. As a reminder to the patient many surgeons arrange for a card to be given him on which is printed the date on which he should return to hospital, with instructions that the card be placed in a prominent position in his home. Responsible relations as well as the patient are frankly warned of the risks of a subsequent attack. If the patient fails to return on the appointed date a further reminder is sent from the hospital. Occasionally the patient may wish to postpone the operation for a short time on account of occupational or domestic conditions, and in some cases a compromise is arranged, but it is very exceptional for warnings and reminders to be completely ignored. I know of no method of divining whether any given patient will fail to return for appendicectomy after successful expectant treatment, but if this argument is considered from the opposite angle surely Mr. Lawson would not submit innumerable tractable patients to an increased risk for the sake of the odd patient who might disobey emphatic instructions.—I am, etc.,

London, W.1, Aug. 10 R. J. MCNEILL LOVE.

Nutrition in Pregnancy

SIR,—I have read with much interest the reports of the papers on nutrition in pregnancy read at the Annual Meeting of the British Medical Association in Belfast and published in the *Journal* of August 7. Especially may I commend Dame Louise McIlroy's excellent paper (p. 258) for its sound, common-sense appreciation of things as they are, and as they should be. Her conclusion is admirable, and applies not only to maternal nutrition but to the wider problem of the nutrition of the whole human race. The significance of the problem of nutrition in its widest aspect has not hitherto been appreciated, and even now it receives far less attention than it merits. Indeed, we have scarce reached the stage of elimination of starvation, far less tackled the question of malnutrition. The evidence is widespread, for unfortunately the rifeness of malnutrition is only exceeded by its far-reaching effects, from vague ill-health to chronic invalidism, from lack of resistance to the common cold to the prevalence of puerperal pyrexia and sepsis. Its burden naturally falls most heavily on the poor, but the rich are by no means immune, for this great social evil, and such it is, springs from three roots. First, economic forces outside the control of the medical profession, but capable of being influenced by the force of enlightened public opinion. Secondly, lack of knowledge both of the rudiments of sound physiological feeding and of the preparation and composition of our food, this ignorance appertaining largely to professional as well as to lay minds. Thirdly, and following from the second cause, a failure to utilize what knowledge we have in the training of both the medical and nursing professions, and a consequent failure in the passing on of our knowledge for general usage.

The remedy is self evident—better education in these matters, first, for the medical student and nurse, secondly, for the lay mind through the professions. The machinery is there already, and may be operated through the Ministry of Health, the child welfare clinics and public health services, the women's institutes, and finally through the medium of the very considerable influence of the ill-used general practitioner. The day must come when the care of the sick as opposed to the care of health becomes only a part of the doctors' work, and not the whole, as it wrongly is at present. Until that day comes we can never hope for the conquest of disease, and I can think of no better start than the regulation of nutrition in pregnancy, that the next generation may at least start life under the best conditions.—I am, etc.,

Erith, Kent, Aug. 13. ERIC TOWNSEND, M.B., Ch.B.

Strangulated Ovary in Children

SIR,—In the *Journal* of August 7 (p. 266) Dr. Fridjohn and Mr. Lee have reported a case of strangulated ovary and hernia in a child aged three months, and have asked if anybody could provide them with details of any case that they have seen. During the last twenty-seven years I have met with four cases of strangulated ovary in infants under three months. They have all presented a very similar clinical picture—namely, that of a large strangulated inguinal hernia which could not be reduced and caused recurring attacks of sickness. I maintain that in a female child under five months the commonest content of an inguinal hernial sac is an ovary or Fallopian tube, and in any case which appears to be strangulated the odds are that this is a twisted ovary.—I am, etc.,

London, W.1, Aug. 11. CECIL P. G. WAKELEY.

Anaesthesia in General Practice

SIR,—Dr. Helen Lukis, in her article in the *Journal* of July 17 (p. 126), throws new light on the problem of the abuse of the voluntary hospitals. Apparently hospital patients have the advantages of nitrous oxide and oxygen, while her private patients are subjected to the admitted hazards and unpleasantness of open chloroform and ether. If this invidious class distinction be widespread, can we blame patients who strive to go to hospitals when they can well afford treatment in a nursing home? Dr. Lukis is at pains to stress the drawbacks of nitrous-oxide-and-oxygen apparatus. Her remarks convince me that she must be referring to apparatus designed many years ago; modern apparatus is admittedly costly in the first instance, but it is reliable. Chromium plate has removed the risk of rusting, rubber tubing is reduced to a minimum and lasts for years, while the impression Dr. Lukis leaves of anaesthetists sitting up late each night feverishly working

to give their apparatus "constant and careful maintenance" is far from being the case.

I should like to endorse what Dr. R. B. P. Lansdown says in his letter published in the *Journal* of July 31 (p. 243) concerning the eminent practicability and safety of avertin in general practice.—I am, etc.,

Hove, Sussex, Aug. 10. REX BINNING.

Prominal in Epilepsy

SIR,—Dr. Eager's comments (*Journal*, August 7, p. 295) on the articles by Drs. Millman and Henderson on the above subject are interesting and, at least to me, confusing. I understood from Dr. Millman's paper that he has proved under conditions of control rigid enough to pass through the eye of the statistical needle that in thirty-nine epileptics the average number of fits was reduced by two-thirds under prominal treatment as compared with luminal treatment. In recommending, as he does in the second paragraph of his letter, the "home-made" product, phenobarbitone soluble, Dr. Eager states that it produces "equally good results." Reference to the *British Pharmacopoeia* shows that the chemical substance contained in phenobarbitone soluble is identical with the sodium salt of luminal (though possibly, as only 95 per cent. purity is demanded, it is less pure). That phenobarbitone soluble might be equal in its effects to luminal is understandable, but the suggestion that "equally good results" may be obtained with it as with prominal seems to constitute to my mind rather a forcible dismissal of Dr. Millman's careful paper.—I am, etc.,

London, W.1, Aug. 9 RIPLEY ODDIE.

SIR,—In the *Journal* of August 7 (p. 295) Dr. R. Eager refers to his report on the Devon Mental Hospital for 1934, in which he says (page 26):

> "Prominal has been tried on cases which had been treated by luminal without success, but did not produce any strikingly different results. Phenobarbitone soluble, the British equivalent of luminal, is now being used with equally good results. It costs 2s. 6d. per ounce, while luminal, manufactured abroad, costs 14s. per ounce."

Prominal (Bayer) is listed at 250 tablets for 18s. 6d., while phenobarbitone soluble in 1½-grain tablets (Parke, Davis and Company) costs 20s. 6d. for 500 tablets, or 10s. 3d. for 250. But it is the daily cost of treatment which matters, and the benefit the patient obtains in fewer fits and lessened confusion. Dr. Millman has reported a reduction of one-third in the number of fits in a year under prominal, and Dr. Henderson a 67.3 per cent. reduction (*Journal*, July 10, pp. 61 and 63).

My own results in ten selected cases show a reduction in fits of 81.5 per cent. in 917 fits during one year's treatment with prominal. The average daily cost was 0.83d. for each of these patients, as supplies of prominal were obtained in bulk at a much reduced price.—I am, etc.,

L. G. MILLAR PAGE,
Norwich, Aug. 11. Senior Medical Officer, Hellesdon Mental Hospital.

SIR,—I was interested to read Dr. R. Eager's letter in the *Journal* of August 7 (p. 295). He quite correctly draws attention to the cheapness of phenobarbitone soluble, but phenobarbitone soluble is sodium phenyl-ethyl-malonyl urea (similar, that is, to sodium luminal), and is not prominal (N-methyl-ethyl-phenyl-malonyl urea), for which I have not yet found a "home-made" substitute.—I am, etc.,

Lancaster, Aug. 15. C. J. HENDERSON.

Decline of National Intelligence

SIR,—I have never before written to expostulate over a review of one of my books, but as, shortly after the appearance of my monograph, *The Fight for our National Intelligence*, you have given space to a review of it which is inaccurate and misleading, I trust you will do me the justice of inserting this reply.

As the soundness of the statistics on which I base my conclusion that national intelligence is declining has withstood the test of examination by no less an authority than Professor R. A. Fisher, I do not think it is necessary to defend here in detail the scientific validity of my results. The criticism that "controls were lacking" may seem to the casual reader to imply a serious error of method, whereas in fact it implies that the critic understands neither scientific method nor statistical technique. In what sense could a control group function in this experiment? Sampling was so devised so as to be free from any systematic error, whilst the size of the population—3,734 families—was such that the probable error of the difference of the means for the two generations was negligibly small in comparison with the difference actually found. Likewise, the taunt that Major Leonard Darwin begins his introduction with an absurdity reveals only that the critic cannot distinguish a true paradox from a common absurdity. If "the very title of the book suggests a bias," so, too, to take a greater example, does Darwin's *Descent of Man* and every scientific monograph which makes the trend of its findings clear in its title.

Naturally I am delighted to hear that other and more extensive investigations are now to be made into this problem, which (I may be biased to think) is the most grave of all those with which our national life is now faced. But I can see no justification for the critic adding, gratuitously, from the vantage point of esoteric knowledge and the unassailable retreat of anonymity, that these are definitely "more scientific inquiries." Nor can I see any reason for taking Lord Horder to task when he speaks of the present results as constituting a "discovery."

Finally, the review contains some misleading inaccuracies—as, for example, that my definition of the "social problem group" includes "most of our elementary school children." I specifically state (*on p. 107*): "*It is my* contention that the 'social problem group' . . . is the less fortunate half of the subcultural fifth"—that is, that it constitutes one-tenth of the school population.—I am, etc.,

Leicester, Aug. 7. R. B. CATTELL.

In Search of Health

SIR,—In a recent issue you published a letter from me quoting the advice of Hippocrates on the necessity of studying the habits of diet of patients. Dr. R. A. Young, in his article "Perspective and Poise in Practice" also refers to this matter. I am sending the notes of a case that seems to illustrate the value of this advice.

A girl aged 10 years and 11 months was examined at the dispensary as a suspected case of tuberculosis. She was referred to me by the school medical officer on account of recurrent cough, poor appetite, and lassitude. Her mother gave the following history. The patient had had a cough from the age of 4 years and had been treated for bronchial catarrh at the out-patient departments of three different hospitals (the out-patient cards were produced)—1927, a children's hospital for two years; 1931, a chest hospital; 1934, a general hospital—and in 1935 at a school clinic (for swelling of neck). She had six weeks' convalescent treatment on the Isle of

Wight, but no benefit was obtained. She was at Clacton for a period of twelve months to December, 1934, and was very much better on her return.

She was examined at this dispensary on July 1, 1935. There was no evidence of tuberculosis; no bronchitis; only post-nasal catarrh. The chief symptoms were cough, some spitting, marked loss of appetite, refusal of all green vegetables, salads, and fats. The patient had never eaten cabbage, except when at Clacton. The mother stated that at two hospitals she was advised to give the child whatever food she asked for. Admission to a residential open-air school was advised with the express purpose of correcting the faulty dietetic habit and establishing a healthy habit. On her return five months later the mother reported that the child was eating all that came her way. The following is the weight record: July, 1935, aged 10 years 11 months, 74 lb.; October, 1935, 79 lb.; June, 1936 (after five months at open-air school), 93 lb.; November, 1936, 98 lb.; June, 1937 (weight of a girl two years older), 105 lb. On her last visit the mother reported that the child was eating green vegetables and fat, but refused lettuce.

The pilgrimage of mother and child in search of health, patiently pursued for seven years from one out-patient department to another of both general and special hospitals, relieved by sojournings in distant seaside resorts, recalls Maeterlinck's fantasy, *The Blue Bird*. The characters, Tyltyl and Mytyl, after many fruitless journeys in search of the blue bird of happiness, return home and discover that their own bird at home is the blue bird. The girl and her mother are discovering that the food on her plate, particularly the humble despised cabbage, is the source of health. It would appear that refusal to eat green vegetables and fat (green shyness and fat shyness) in this case was due chiefly to the swallowing of catarrhal products. In other cases it is, apparently, a behaviour disorder, and needs to be studied and treated accordingly.—I am, etc.,

P. A. GALPIN,
Tuberculosis Officer, Plaistow.

London, E.13, Aug. 9.

Radio Interference due to Electromedical Apparatus

SIR,—The Committee of the British Standards Institution is inquiring into radio interference caused by electromedical equipment. We have been asked to obtain replies to the following questions: (*a*) has mechanical rectification any advantage over valve rectification in any particular cases, and if so, what are the advantages, and in what cases do they arise; (*b*) how far is it desirable, apart from economic considerations, to use spark apparatus for diathermy?

We shall be glad if any of your correspondents could give us information that would help us to answer these questions.—We are, etc.,

RUSSELL J. REYNOLDS.
GEORGE F. STEBBING.

Lambeth Hospital, Brook Street, Kennington Road, S.E.11, Aug. 5.

Wanted: Old Instruments for Extracting Teeth

SIR,—As honorary curator of the odontological section of the Royal College of Surgeons Museum, may I appeal to your readers for the gift of old types of instruments for the extraction of teeth, more especially those instruments in use during the early part of the last century?—I am, etc.,

FRANK COLYER.

London, S.W.2, Aug. 12.

Obituary

JOHN GORDON THOMSON, M.A., M.B., F.R.C.P.

Professor of Medical Protozoology, London School of Hygiene and Tropical Medicine

We regret to announce that Professor John Gordon Thomson, Director of the Department of Medical Protozoology at the London School of Hygiene and Tropical Medicine, died on August 13. The son of the late Mr. William Thomson, F.E.I.S., Professor Thomson was educated at Bathgate Academy and Edinburgh University, where he graduated M.A. in 1903. In 1904–5 he was awarded medals in botany and physiology. He was senior Mackenzie bursar in anatomy, and acted as prosector to Professor D. J. Cunningham in 1905. In 1908 he qualified M.B., Ch.B. (honours) at Edinburgh, and in 1930 took his M.R.C.P.London, being elected a Fellow last year. Two years after qualification Thomson was appointed Durning-Lawrence research fellow in tropical medicine at Liverpool, and in 1912 pathologist to the Royal Southern Hospital in that city. He was also clinical and pathological research fellow at the Liverpool School of Tropical Medicine from 1912 to 1913, and in the latter year was appointed assistant honorary physician at the Liverpool Chest Hospital. After receiving a Beit Memorial research fellowship he came to London as lecturer in protozoology at the London School of Hygiene and Tropical Medicine. In 1915 Thomson went on a bilharzia mission to Egypt, where he served as a captain in the R.A.M.C., and acted as protozoologist to the Central Military Laboratory in Alexandria and as pathologist to the Seventeenth General Military Hospital. On his return to England he was appointed officer in charge of the malarial research laboratory at the War Office. He was secretary to the Section of Tropical Medicine at the Annual Meeting of the British Medical Association at Cambridge in 1920. In 1926 he was exchange lecturer in protozoology at the School of Hygiene, Johns Hopkins University. In 1930 he was a representative at the third International Congress on Malaria at Algiers, and at the request of the League of Nations Health Organization he gave in 1936 a series of lectures at Singapore at the special League of Nations course on malaria.



Professor Thomson travelled widely in South America and other tropical countries. In 1921–2 he went on two expeditions to investigate blackwater fever in Rhodesia, and in 1924 visited the West Indies, Honduras, Guatemala, Costa Rica, and Panama. His experience in the field lent especial value to his writings and to his teaching, for which many students must feel a debt of gratitude. Professor Thomson's monograph on blackwater fever is one of the standard contributions on this subject, and his work on methods of enumerating malaria parasites in the blood and the study of cultural forms of the parasite are of the greatest importance.

Directness of approach to his subject, sound judgement, and common sense were characteristics of a man whose advice was sought by colleagues, who went to him the more readily on account of his friendliness and kindliness. His personal popularity and his professional reputation made it inevitable that visitors to this country interested in tropical medicine should seek him out, but, whatever the calls upon his time, he never spared himself in assisting others.

Professor Thomson married Hilda Burgess, and had one son and one daughter.

We are indebted to Sir Malcolm Watson of the Ross Institute of Tropical Hygiene, London School of Hygiene and Tropical Medicine, for the following appreciation:

John Gordon Thomson's death will be mourned as a personal loss by many, both at home and abroad, for Thomson was a great teacher as well as a scientist of distinction. His greatness as a teacher was due to a happy combination of qualities. In a supreme degree he had the gift of clear exposition. He himself saw clearly, for he was an accurate thinker; and it seemed no effort for him to say in simple words what he thought. Whenever he was available I asked him to lecture on the life history of the malaria parasite in man and the mosquito the malaria course for laymen. It was the opening ture in the course, and his fascinating account of this mplicated story, illustrated on the blackboard, held his dience spellbound. It was an admirable introduction the subject. Like so many Scotsmen, he spoke slowly d distinctly—of importance in one who lectured to any whose mother tongue was not English. Although ost of his life was spent in a laboratory, and although other ways he did not concern himself much with the siness side of life, yet he had a clear grasp of the actical bearings of what he taught, which made his aching of special value when the student came to study opical hygiene. But great as these qualities are, he ad another, of not less value alike to the student and ie School: he had a charity and a benevolence which owed themselves in the personal interest he took in is students, not merely as students but as men and omen, some of them in a strange land and far from riends and home. Can we wonder that it was for Professor Thomson that old students asked first when they eturned to the School? While he had no sympathy vhatever for the slacker, he was deeply concerned when n the examination pass list the names of some whom he hought should have got through were absent. As an examiner his object was to find out what a man knew by questions that helped rather than puzzled the candidate. He was unhappy when some of his colleagues seemed to adopt the other course, and he has told me how he sometimes tilted the balance in the candidate's favour in the subsequent discussion. All this was just part of the great-heartedness of the man, which endeared him alike to his students and his colleagues, and not least to Sir Ronald Ross, who had a specially warm side for both Gordon Thomson and his brother David. His friendship with Ross dated from the time when after a distinguished career at Edinburgh University he joined the staff of the Liverpool School of Tropical Medicine.

About the time he was clinical and pathological research fellow at the Liverpool School of Tropical Medicine he produced, by himself or in collaboration with Ronald Ross, his brother David, H. B. Fantham, and J. A. Sinton, a number of important papers on the enumeration and morphology of trypanosomes, the growth of malaria parasites in culture and in human beings, the cultivation of *Pyroplasma canis in vitro*, and the cultivation of human tumour tissues. A Beit fellowship brought him to London in 1913, where he worked on spirochaetes in the intestine of man and animals, and shortly after he joined the London School of Hygiene and Tropical Medicine, then at the Albert Docks. His appointment as officer of the Malarial Research Laboratory at the War Office again brought him into contact with Ross. The end of the war was not, however, the end of Thomson's travels and researches abroad. It might almost be regarded as the beginning. One of the most important of these was his research on blackwater fever in Southern Rhodesia, made during two visits to that country. In spite of the fact that his health was not quite as good as it might have been, he was off to Nyasaland in 1934 to study immunity in malaria, and spent nearly a year there, keeping a group of African children under constant observation and also interesting himself in trypanosomiasis and other subjects, on which he published reports on his return to London. As he told me not long ago, this last trip, with often unsuitable diet, taxed his strength severely, and at times he was tempted to cut it short—but he stayed the course.

In addition to his many scientific papers he published in 1929, along with Dr. Andrew Robertson, a textbook on protozoology for medical men, which has been of great value. Last year, when, under arrangement with the Ministry of Health, direction of the work of the laboratory at Horton Malaria Therapy Centre was undertaken by the London School of Hygiene and Tropical Medicine, Professor Thomson's special qualifications fitted him to take over its general control and supervision. He was just beginning to get into his stride with this work when, at the beginning of this year, he became far from well, and went into hospital with a gastric ulcer. For some months he improved, and the School saw the familiar figure again for a few weeks. But an internal haemorrhage pulled him down again, and there was evidently something more serious in the background. This compelled his return to hospital. He bore his illness calmly and hopefully, and only the order that he should see fewer people limited the numbers who called to see him.

In an obituary article in the *Times* of August 16 his colleague, Sir Rickard Christophers, wrote: "His name is very familiar also in work in the field of tropical medicine, and his contributions to science are known to research workers all over the world. Perhaps his most outstanding personal characteristics were his readiness to enter into the scientific interests of others and to spare himself not at all in doing whatever was possible to assist their work." Such a man could not fail to leave a fragrant memory to a host of friends.

NORMAN MACLAREN, F.R.C.S.

Consulting Surgeon, Cumberland Infirmary

Mr. Norman Maclaren of Carlisle died on August 12 at the age of 61. He was educated at Carlisle Grammar School, Rugby, and at Trinity College, Cambridge, where he took first-class honours in the Natural Science Tripos in 1897. He qualified M.B., B.Ch. in 1901, and in the same year received the diplomas of M.R.C.S.Eng., L.R.C.P.Lond., and two years later was elected F.R.C.S. From Cambridge Mr. Maclaren went to St. Bartholomew's Hospital, and later to the Metropolitan Hospital, as house-surgeon. He then joined his father, first as an assistant and then as partner, in his practice in Carlisle. Mr. Maclaren was

appointed to the staff of the Cumberland Infirmary as assistant surgeon in 1904, acted as surgeon from 1912 to June, 1936, when he retired as consulting surgeon. On the death of Mr. E. W. Stead he was elected honorary treasurer of the infirmary, and in that capacity continued to render valuable service to the hospital; he was also consulting surgeon to the Border Counties Home for Incurables and the Cumberland and Westmorland Convalescent Home at Silloth. Mr. Maclaren was an active member of the British Medical Association, which he joined in 1903. He was honorary secretary of the Border Counties Branch from 1922 to 1926, president in 1925–6, and assistant honorary secretary in 1926–7, and had previously served as chairman of the English Division in 1919–20. On eight occasions between 1920 and 1935 he acted as representative at the Annual Representative Meeting. He was assistant county commissioner of the St. John Ambulance Brigade, a Serving Brother of the Order of St. John of Jerusalem, and county controller for Cumberland and Westmorland V.A.D.s. He was appointed a justice of the peace for Cumberland in January, 1927, and in December, 1933, was elected chairman of the Cumberland Ward magistrates. At the outbreak of the great war Mr. Maclaren held a commission in the old 1st Volunteer Battalion of the Border Regiment, and proceeded with his battalion to Burma. In 1916 he was transferred to Bombay, where he worked at Colaba Hospital as a major in the R.A.M.C.; he afterwards served in Egypt. On his retirement he was gazetted *lieutenant-colonel* and received the Territorial Decoration. He continued to be a military member of the Territorial Army Association of Cumberland and Westmorland. Mr. Maclaren contributed articles to the *British Medical Journal* on "Cumberland Infirmary—Past, Present, and Future" (1925), "Addison and Cumberland" (1926), and "Lister and Carlisle (1927). Mr. Maclaren is survived by a widow and two sons, one of whom is a house-surgeon at St. Bartholomew's Hospital.



A colleague and friend writes:

In the passing of Norman Maclaren the profession and community have lost a good friend, for Maclaren's life was essentially one of service. His lifelong interest has been the Cumberland Infirmary. From boyhood, as a son of Roderick Maclaren, a former surgeon, he had been schooled in its traditions, and he completed his full term of service as surgeon only last year. Maclaren was also untiring on committee, and latterly was never happier than when as treasurer of this institution he could present a favourable balance sheet. The Maclarens had always carried on a general practice in addition to their surgical work, so that Norman Maclaren leaves many patients who will find a blank in their lives, for he was often very much more than their professional attendant, guiding and advising in many family crises. Those of us who served with him in Burma and India throughout the war will always remember gratefully his interest, professional and personal, in the welfare of all ranks. In latter years his archaeological interests had brought him much in contact with the recent work on the Great Wall of Hadrian, while his work in heraldry had resulted in the production of the arms of all the former Bishops of Carlisle. Carlisle is the poorer for his passing, but, using his own oft-repeated phrase, we must "carry on."

Mr. J. N. J. HARTLEY writes:

The passing of Norman Maclaren has deprived Carlisle of a leading member of the medical profession, and will occasion sorrow to numerous devoted patients and to a wide circle of friends and colleagues. For more than thirty years he has been a member of the honorary surgical staff of the Cumberland Infirmary. It was only last year, on attaining the age limit, that he ceased active membership on the staff and was appointed honorary consulting surgeon. Though he retained a keen interest in practical surgery, his energies during recent years have been largely devoted to the administrative side of the institution. As honorary treasurer and an enthusiastic member of numerous hospital committees he has rendered invaluable service, and he has taken a large share in introducing schemes for the further extension of the Cumberland Infirmary, and especially for launching the new operating theatre fund. In the future his memory will be linked chiefly with the Cumberland Infirmary.

He had a rich store of memories of his school days at Rugby, of Cambridge, of St. Bartholomew's Hospital, of surgery in the time of his distinguished father, and of his own experiences in Burma and Egypt during the great war. As hobbies he had great interest in and knowledge of heraldry and archaeology. We shall treasure memories of Norman Maclaren as a genial companion, a loyal colleague, one reluctant to believe, and never uttering, anything but good of his fellows, and zealously devoting time and energy to voluntary medical service.

MARTIN H. OLDERSHAW, M.D., F.R.C.S.

Surgeon, Hospital for Women, Soho Square

We announce with regret the death, at the age of 46, of Dr. Martin Herbert Oldershaw of Upper Wimpole Street. Dr. Oldershaw began his education at the Brighton Technical College, and entered University College Hospital after winning the Bucknill scholarship. He graduated M.B., B.S. in 1917, and in the same year was appointed to the resident staff of University College Hospital, occupying in succession the posts of house-physician, house-surgeon, obstetrical registrar, and casualty surgical officer. In the course of these appointments he proceeded to the M.D. with a gold medal in 1919, becoming at the same time a Fellow of the Royal College of Surgeons. His interests were chiefly obstetrical and gynaecological, and he was appointed to the staff of the Soho Square Hospital for Women. Later he became consultant obstetrician and gynaecologist to the London County Council, and consultant gynaecologist to the British Red Cross Clinic for Rheumatism and to St. John's Clinic. He was also consultant obstetrician to the St. Pancras Borough Council, and examiner to the Central Midwives Board and General Nursing Council of England and Wales. Dr. Oldershaw was a Fellow of the Royal Society of Medicine, and he played an active part in the work of the Obstetrical and Gynaecological Section. For four years Dr. Oldershaw was honorary secretary of the Hunterian Society. He published one or two articles in professional journals on the treatment of cancer of the uterus, and on the significance of bleeding as a symptom in gynaecology. A keen Mason, he had held many Masonic appointments, including the Mastership of the Aesculapius Lodge. He is survived by his wife and a young son.

The sudden death of Dr. EDMUND WELCH on August 2 removed one of the best-known personalities in the medical profession in Leeds. Dr. Welch, who was in his sixty-eighth year, was born in Morley. On qualifying in 1895 he settled down in Stanningley, where he remained in active practice till the day of his death. He became a member of the British Medical Association in 1912, and there found an outlet for the dominating interest in his life—service for his fellow practitioners. He did very important work for the profession in the early days of the National Health Insurance Act and during the war, which was recognized by his election as representative in 1925, in which capacity he acted until his death. He was chairman of the Leeds Division in 1929–30 and president of the Yorkshire Branch the same year. His association with the Insurance Acts Committee began in 1927, and he devoted himself whole-heartedly to his duties. He was appointed to so many subcommittees that it was a mystery how he found time for them. It was a certainty that if he ever failed to attend one it was because he was present at some other. Dr. Welch's charming personality endeared him both to his patients and to his fellow practitioners. If he had to offer adverse criticism he did so in such a quiet, gentle manner that it never failed to carry great weight. He died as he would have wished to do—in harness: he had finished his day's work before being seized by a heart attack. Dr. Welch is survived by a widow and two sons, one of whom was in partnership with him.

Dr. PATRICK P. J. GANTÉAUME, M.B.E., one of the best-known practitioners and public men in South Africa, died at East London, Cape Province, on July 31. He studied at Edinburgh University and graduated M.B., C.M. in 1899. After a year and a half as house-surgeon and assistant in Sunderland he went off to the Boer War, being attached as surgeon to the Highland Light Infantry. After the war he settled in East London, and there built up a large surgical and general practice. During the great war Dr. Gantéaume was attached for some time as a surgeon to No. 1 General Hospital, South Africa. A gifted speaker and fluent French scholar, he loved public affairs, and was re-elected mayor of the city of East London for several consecutive years. Dr. Gantéaume had been in failing health for the last few years, but in spite of a painful duodenal ulcer he bravely carried on a small portion of his old practice to the end. At the Annual Meeting of the British Medical Association at Aberdeen in 1914 he acted as representative of his Division.

We announce with regret the death of Dr. HERBERT CHRIPPES UPTON of Hove in July of this year. He was the oldest practitioner in Sussex, having reached the age of nearly 93, and was doing his work till within a few days of his death. Dr. Upton received his medical education at St. Bartholomew's Hospital, where he won the Foster prize, and was a scholar in medicine, surgery, and forensic medicine. He took his M.R.C.S. in 1866, taking the L.R.C.P. in the following year. He was appointed resident medical officer of the Brighton and Hove Dispensary and settled down in practice in Hove nearly fifty years ago. He took a great interest in municipal affairs, was elected a member of the Hove Town Council, and later became an alderman, which office he held at his death. His medical knowledge was much valued by his colleagues on the many committees on which he served. He gave his time and services willingly and freely to the work of the council for a period of well over forty years. Dr. Upton took a great interest in the game of bowls, and was often to be seen at the Hove Bowling Club during his periods of recreation. His funeral was attended by a large number of his friends, patients, and colleagues, including the Mayor of Hove and many aldermen, councillors, and officials of the Hove Corporation, an eloquent testimony to the regard, esteem, and affection in which he was held. Dr. Upton took no special part in the work of the various medical societies of the town, but his quiet, unostentatious devotion to the interests of his patients endeared him both to them and to his fellow practitioners. He leaves behind him the memory of a life of useful work, carried on for so many years in the best tradition of our profession.

The death of Dr. EDWARD MERRY of Brighton removes a well-known and much-respected member of our profession from our ranks. Dr. Merry took the M.R.C.S., L.R.C.P. in 1899, after having studied for a short period at the London Hospital. In the following year he proceeded to the M.D. of Western University, Ontario, where he had received the early part of his medical education. He settled in Brighton, and practised there for some twenty years before retiring. He took a special interest in midwifery, and was well known for his experience in that branch of medicine. He will be remembered, too, by thousands of holiday-makers and Brighton people as the doctor who, until he retired from practice five years ago, went down to the beach to preach at the open-air mission. Dr. Merry was a member of the Plymouth Brethren, and his vigorous sermons were a feature of life on the Brighton front. His funeral took place on August 11, and was attended by many colleagues, patients, and friends. He leaves a widow and five children, to whom the sympathy of his colleagues in Brighton is extended.

Medico-Legal

PUERPERAL FEVER IN A COTTAGE HOSPITAL

Damages Awarded to Patient

A young Leicestershire woman was recently awarded heavy damages against the Ashby-de-la-Zouch Cottage Hospital and her general practitioner for injuries due to puerperal fever, which she contracted in the hospital.*

At the Derbyshire assizes, held in July before Mr. Justice Singleton, Mrs. Marjorie Heafield sued Mr. C. E. Crane, chairman of the hospital, and Dr. J. W. Hart of Measham for negligence. She alleged that before her illness she had been a healthy and active woman and a good tennis player. She was married in 1933, and entered the hospital on January 5, 1936, as a paying patient, for her confinement. The child was born in the "old labour ward" in the presence of Dr. Hart and Sister Maud Seymour, who was not wearing an overcoat, mask, or gloves, and had been attending a Mrs. Ingham, who had on the previous day shown symptoms of puerperal sepsis. The hospital was understaffed, and Mrs. Heafield was left some hours in the old labour ward without proper attention. She was then removed to the "general ward," which contained three other women, including Mrs. Ingham, with whom she was eventually notified as a case of puerperal sepsis. On the evening of January 6 her temperature was 101.4° F.; next day it was 102.8°, and in the evening it rose to 104.6°. On January 8 Dr. Hart notified her. Until January 18, however, her husband was told that her case was proceeding normally. He then became alarmed and sought out Dr. Hart, who confessed that he was a little worried. The husband then asked for a specialist. Dr. C. O. Lochrane, a gynaecologist, was sent for and had her removed to a Derby hospital for treatment. She recovered, having received transfusions of blood; she was now totally crippled and not expected to have anything like normal function restored.

Mrs. Ingham said in evidence that she had been confined in the hospital on January 1, that the nurse did not wear

* For the above account we are chiefly indebted to the *Leicester Evening Mail* for July 13–17 and 30.

gloves or mask and that Dr. Hart had told her that she and Mrs. Heafield were suffering from the same disease. Mr. Heafield said in evidence that on January 8 his wife had complained of being hot, and on January 18 she was partly delirious. Her weight had fallen from just over 9 st. to 5 st.

Sir Bernard Spilsbury said that the hospital case-book showed quite clearly that there were notifiable puerperal cases at the hospital. Such cases should be isolated and no other patients should be admitted into the ward until it had been thoroughly cleansed and sterilized. Nurses should have their clothing covered by sterilized gowns and wear masks and gloves. Inquiry should be made for the possibility of infection among other patients, and to take swabs might be a wise precaution. A nurse could carry infection. Mrs. Heafield should not have been admitted to the hospital. He would not allow a woman to come into a ward where there was another woman with a temperature of 104° F. Nothing but sepsis could account for an intermittent temperature ranging from 102° F. in a puerperal case. A temperature of 104° F. was gravely suspicious of puerperal fever. The charts prepared for the action contained a clear indication of puerperal fever and showed that no healthy patient should have gone into the ward.

Dr. J. L. Berry, lecturer at Birmingham University, who had prepared the charts produced by Sir Bernard Spilsbury, said they showed that the patients whose temperatures they represented had notifiable pyrexia and that the general character of Mrs. Heafield's record indicated a streptococcal infection. Mrs. Heafield was at the time of the action still strapped and bandaged to a steel frame; her legs were moved outwards and her right wrist was rigid with only very slight movement. The right shoulder and head could be moved. She would probably be a permanent cripple and would hardly be able to walk. Her condition was due to puerperal sepsis.

Dr. G. B. Gill, general physician, Leicester, said he had formed the conclusion, by examining the case-books of the hospital for the three weeks before Mrs. Heafield's admission, that it was a "seething hotbed of mixed infection." Cross-examined, he admitted that a large number of patients had no temperatures, but observed that resistance varied greatly. He thought Dr. Hart should have had Mrs. Heafield isolated with a special nurse when her temperature rose.

The Case for the Hospital

Counsel for the hospital, after opening his case, called Sister Seymour, who said that she was second in command. Temperatures were taken at 6 a.m. and 6 p.m., and the charts were always available for the doctors. There were about twelve beds in the maternity unit. Dr. Hart had always seen the charts. Mrs. Ingham had had a temperature the evening before Mrs. Heafield was admitted. As a qualified midwife she realized that a temperature might be significant. She wore only a mackintosh apron and never wore a mask, gloves, or overall without instructions. There was a supply of gloves and masks for use if required and a special supply of mackintosh aprons. Dr. Hart had worn one of these. Nurses always went and scrubbed their hands immediately after attending a patient's dressing. After Mrs. Heafield's baby was born the sister thought she saw her crying, but Mrs. Heafield said she had a cold. Cross-examined, she agreed that nurses had in recent years been taught much about the danger of septic infection, and that she knew the danger-flag was temperature and had been taught that a temperature of 100.4° persisting for twenty-four hours was probably due to sepsis. On the matron's instructions she had written in her report after the action had begun, "Appears to have a cold."

Dr. S. C. M. Davison, a general practitioner of Ashby, said that he had attended the hospital for ten years, and, speaking generally, had never had any cause for complaint against the hospital or staff. Changes of temperature were immediately notified.

Dr. H. H. Silley stated in cross-examination that the medical staff of the hospital had held a meeting on January 22, at which Dr. Hart had been present, to discuss the best method of preventing any further cases of puerperal sepsis. It had been decided that there was one undoubted case, that of Mrs. Heafield. He maintained that the routine of the hospital was not known to be faulty.

Mrs. Anne Warren, superintendent health visitor for Leicestershire, said that as a result of Dr. Hart's notification she had visited the hospital on January 14. She had seen Mrs. Ingham's temperature chart and formed the opinion that she was suffering not from puerperal fever but from mastitis. Mrs. Heafield's chart showed that her temperature was 100.4° F. or 100.6° F. on the evening of her confinement, and therefore suggested that whatever germ she had had she had brought in with her. There was not sufficient swing for a typical puerperal fever chart. She had remarked to Mrs. Heafield, "You have a cold," and Mrs. Heafield had answered, "Yes, I had it a day or two before I came in." Her definite opinion was that Mrs. Heafield was suffering from influenza, which had been very rife at that time. She had no criticism of the maternity administration of the hospital.

Miss Alice Arkinstall, the matron, said there was no resident doctor and the medical staff were purely honorary. If a patient developed a temperature it was the custom to ring up her doctor. She did not suspect Mrs. Heafield of puerperal fever until the superintendent health visitor had come. Dr. Hart had never told her to inform the other doctors of the condition of Mrs. Heafield. If she had been suspicious she would have informed them. During her six years in the hospital 650 babies had been born without the loss of a mother. In answer to the judge, she said that Dr. Hart had never suggested that Mrs. Heafield ought not to have been placed in the same ward as Mrs. Ingham. He had not been kept from seeing the charts of other patients. Cross-examined, she said that the entry "Appears to have a cold" was put into the case-book when the solicitor had first come to see her "just to remind her." This was not "a terrible thing to do," and she had not realized that it might be a part of her defence.

Dr. W. E. Barnie-Adshead of Birmingham said that in his opinion Mrs. Ingham had not suffered from puerperal fever and Mrs. Heafield had been infected before ever Dr. Hart delivered her; and that she had not suffered from the same type of disease as Mrs. Ingham, who therefore could not have infected her. Dr. Hart ought to have isolated Mrs. Heafield when her temperature rose and proceeded with investigations. Having regard to the charts and case-book, it was not safe to put her in the same ward as Mrs. Ingham, although Mrs. Ingham might have been suffering only from a simple complaint.

Counsel for Dr. Hart called and examined Dr. J. P. Hedley of St. Thomas's Hospital, who said that puerperal fever covered three classes of disease, and that, from the case-book and charts, Mrs. Ingham's temperature was caused by a different germ from that of Mrs. Heafield, who was probably not infected in hospital by puerperal fever. If she had been she would almost certainly have died. Puerperal fever was often caused without outside infection. Dr. Hart had done everything possible in the treatment of Mrs. Heafield. He agreed, in answer to the judge, that if infection were about gloves and a mask should be worn by everyone attending the patient.

Dr. Francis Allen of the Cripples' Hospital, Birmingham, stated that Mrs. Heafield had had two operations since December, and would not be able to walk or sit down naturally again. Her hips were completely stiff.

Dr. Hart's Evidence

Dr. Hart testified, in his own defence, that he had taken the usual precautions in attending Mrs. Ingham. He had not worn gloves, because he did not do so in a normal case. After he had left her he had not known where in the hospital she was placed. At that time he had no knowledge of any patients with temperatures, or of suspected puerperal infection. She had been normal on January 2 and 3; he had not visited her on the evening of January 4, but on the morning of January 5 had found that she had had a temperature the night before. He had been very annoyed, and had asked the matron why he had not been informed. He had suspected

that Mrs. Ingham had some puerperal infection. He had treated her on January 8 and notified her case to the medical officer of health; her condition had improved, and on January 19 she had been discharged. He was still her medical adviser. Mrs. Heafield's confinement had been normal. He had visited her on January 6 and again on January 7, when he had found that her temperature had risen the night before. This had not been reported to him, and he had become very alarmed. He had begun to suspect puerperal infection, and decided to notify Mrs. Heafield's case as well. He had told the matron this and discussed with her the steps to be taken to stop the spread of infection, saying that other doctors must be told. On January 8 or 9 the hospital temperature charts had shown that two other patients were running temperatures. He had told the matron that this looked "something very bad." He had never thought that Mrs. Heafield contracted her infection from Mrs. Ingham. He admitted in cross-examination that he knew very little about puerperal fever and supposed that he had wasted about a couple of days. These were the first two cases that he had ever had go wrong. He could only suggest one instance of negligence of a nurse during the confinement of these women: she had walked from one to another without washing her hands. After he had notified the cases and spoken to the matron the whole atmosphere of the hospital had changed towards him: he had not received the same courtesy as before. For ten years he had been attending four or five patients a year there, but since the action had begun he had not had any. Three of his patients had asked to be confined in the Ashby hospital under his attendance, but the matron had said that the hospital was full. This might or might not have been correct. He had not interfered with the regular routine of the hospital, and had no idea which ward Mrs. Heafield would go to.

The Judgement

The learned judge reserved his judgement and delivered it in London on July 30. He said that he was satisfied that Mrs. Heafield was not suffering from a cold when she entered the hospital, because if she had been Dr. Hart would have noticed it. It was most unfortunate that the addition, "Appears to have a cold," should have been made to what was supposed to be a record of the case made at the time, and he could not accept the statement of the matron that "it was just to remind me." He also rejected the evidence of the superintendent health visitor, Mrs. Warren, that Mrs. Heafield said she had a cold before she went into hospital. He believed that Mrs. Heafield was perfectly well when she entered the hospital, and the first sign of anything being amiss had been on the evening of January 6, when her temperature had been 101.4° F. Although Dr. Hart had notified the case on January 8, and on that day written a letter to the secretary of the hospital, he had not said a word to Mr. Heafield until on January 18 he had found her flushed and delirious and had suggested a second opinion. His lordship was satisfied that Dr. Hart had been right in diagnosing Mrs. Heafield's case, and also Mrs. Ingham's case, as being due to puerperal fever. Mrs. Heafield had caught the infection from Mrs. Ingham through being placed in the same ward with her without special precaution. There had been at the hospital complete disregard of the statutory regulations, which required cases of puerperal pyrexia to be notified. To say the least, it was regrettable that so little attention seemed to have been paid to the regulations, and it was in Dr. Hart's favour that he had reported his two cases on January 8. The hospital staff had failed in their duty through placing Mrs. Heafield in a ward where there was a gravely suspicious case, and Dr. Hart had failed in his duty by not isolating Mrs. Ingham. Women were encouraged to go to hospitals and nursing homes for their confinements because of the better facilities for cleanliness and safety, but Mrs. Heafield would have been far safer at home. He awarded her £3,500 general damages and £149 special damages against Dr. Hart and Mr. Crane jointly, but against Mr. Crane in his representative capacity only.

Dr. Hart's defence was undertaken by the London and Counties Medical Protection Society.

Universities and Colleges

UNIVERSITY OF LONDON

Recognition of Teachers

The following have been recognized as teachers of the University in the subjects indicated in parentheses:

London Hospital Medical College.—Mr. D. W. C. Northfield (Surgery).

Guy's Hospital Medical School.—Mr. R. C. Brock (Surgery); Dr. R. W. B. Ellis (Children's Diseases); Dr. C. P. Symonds (Medicine).

St. Mary's Hospital Medical School.—Mr. A. E. Porritt (Surgery).

King's College Hospital Medical School.—Mr. A. W. Kendall (Surgery).

University Readership in Biochemistry

The Senate has resolved to institute a University Readership in Biochemistry tenable at the Lister Institute of Preventive Medicine in accordance with the Regulations on University Titles (*Calendar*, 1936-7, pp. 259-70).

Dixon Fund

Dr. C. S. Hallpike has been granted £15 from the Dixon Fund towards the cost of an automatic knife-grinding machine in connexion with a histological examination of the temporal bone, and Dr. Giulio Stella £30 from the same Fund for the purchase of apparatus and materials to aid an investigation on the respiratory central mechanism, the researches to be carried out at Middlesex Hospital and in the physiology department of University College respectively.

Thomas Smythe Hughes Medical Research Fund and Beaverbrook Fund

The following grants, amounting in all to £200, have been made out of the Thomas Smythe Hughes Medical Research Fund and the Beaverbrook Fund for 1937-8, for research to be carried out at the college or hospital designated:

To Dr. Harold Muir Evans, £50 to be spent on the technical preparation of microscopic specimens to aid a comparative study of the brain of Teleostean fishes, with special reference to their habits and the study of seasonal changes in the pituitary gland of fish (Anatomical Department, University College, and in own laboratory).

To Mr. Roderic Alfred Gregory, M.Sc., £30 for the purchase of materials in connexion with investigations of the metabolism of the isolated mammalian heart, with special reference to carbohydrates, in normal and hyperthyroid animals (Department of Physiology, University College).

To Dr. Richard Wheeler Haines, £30 for the purchase of materials in connexion with a revision of the forearm muscles in a number of primitive animals (Department of Anatomy, St. Thomas's Hospital).

To Mr. John Marshall Ledingham, B.Sc., not exceeding £30 for a dissecting microscope and for the purchase of materials in connexion with an investigation into the mode of initiation and propagation of an impulse set up in a nerve fibre by electrical stimulation (Department of Biophysics, University College).

To Professor Bryan Austin McSwiney, £15 for materials for research on (1) visceral afferent pathways, and (2) reflex mechanism controlling pancreatic secretion (Sherrington School of Physiology, St. Thomas's Hospital).

To Dr. Walter Roworth Spurrell, £20 for the purchase of a microtome for serial sections in connexion with a research on the output of prolan and oestrin in the normal and pathological cycles of menstruation and pregnancy (Physiology Department, Guy's Hospital Medical School).

To Professor Samson Wright, £25 towards the cost of a Keith Lucas pendulum and accessories for the continuation of research on the action of acetylcholine and related substances and of anticholinesterases on the central nervous system (Middlesex Hospital Medical School).

The Senate has resolved that students who have passed the B.Sc. (Household and Social Science) Examination be exempted from the Second Examination for Medical Degrees, Part 1, and that the Regulations for Internal Students (*Re-*

Book, 1936-7, p. 263) be amended accordingly, and that students who have passed the M.B., B.S. Examination be exempted from examination in pathology and bacteriology at the B.D.S. Examination, and that the Regulations for Internal Students' (*Red Book*, 1936-7, p. 301) be amended accordingly.

The Ph.D. Degree in Physiology has been awarded to Robert Laing Noble, M.D. (Middlesex Hospital Medical School), and the D.Sc. Degree in Physiology to Mrs. Marion Grace Eggleton, M.R.C.S., L.R.C.P. (University College).

Dr. F. D. Turner has been appointed governor of Colchester Grammar School.

Professor T. B. Johnston, who has held the University Chair of Anatomy tenable at Guy's Hospital Medical School since September, 1919, having been appointed superintendent of Guy's Hospital on the resignation of Mr. H. L. Eason, the Chair has been replaced by a part-time Chair tenable at the School, and Professor Johnston has been appointed thereto as from October 1. Professor Johnston has relinquished the office of Dean.

The Services

DEATHS IN THE SERVICES

Lieut.-Colonel JOSEPH FRANCIS WHELAN, D.S.O., O.B.E., R.A.M.C. (ret.), died at Hove early last month, aged 64. He was born on March 1, 1873, was educated at the Catholic University, Dublin, and graduated as M.B., B.Ch., and B.A.O. in the Royal University of Ireland in 1896. After filling the post of house-physician of the Mater Misericordiae Hospital in Dublin, he went out to South Africa to serve as a civil surgeon in the South African War, in March, 1900, and took a permanent commission as lieutenant in the R.A.M.C. on November 14, 1900. He attained the rank of lieutenant-colonel on June 2, 1918, and retired on March 1, 1928. For some time after his retirement he was employed on the retired list at Warwick. Before he took up the study of medicine he served as an official in the General Post Office, Dublin; and in his youth was a well-known Association football player, playing full back for Leinster in the old Interprovincial tournaments. He served in the South African War from 1900 to 1902, taking part in operations in Cape Colony, the Orange River Colony, and the Transvaal, and received the Queen's medal with three clasps and the King's medal with two clasps. He also served throughout the war of 1914-18, when he was mentioned in dispatches in the *London Gazette* of March 12, 1918, and received the D.S.O. and the O.B.E. He was a member of the British Medical Association from 1903 to 1924.

Lieut.-Colonel JAMES DUNNE DAY, R.A.M.C. (ret.), died at Isleworth on June 18, aged 82. He was born on December 31, 1854, and was educated at Trinity College, Dublin, where he graduated M.B., B.Ch., B.A.O., in 1878, subsequently taking the F.R.F.P.S. at Glasgow in 1888. Entering the Army as surgeon on March 6, 1880, he became lieutenant-colonel after twenty years' service, and retired on June 19, 1901. He served in the South African War in 1899-1901, when he took part in operations in Cape Colony and in the Orange River Colony, including the actions at Colesberg and Vet River, and he received the Queen's medal with three clasps.

Colonel WILSON RANSON, D.S.O. R.A.M.C. (T.F.) (ret.), died at Hull on July 31, aged 67. He was the son of Mr. Joshua Ranson, and was educated at Bradfield and afterwards at Edinburgh and at St. Thomas's Hospital. He took the Scottish triple qualification in 1894, and the F.R.C.S.Ed. in 1898. After serving as assistant surgeon at the Down County Infirmary at Downpatrick he joined the R.A.M.C. (T.F.), and in 1907 was placed in medical charge of the 15th Regimental District at Beverley. At the outbreak of war in 1914 he went to France, serving successively in command of the 3rd Northumbrian Field Ambulance in the 50th Division, the 47th Casualty Clearing Station in the Fifth Army, and the 30th General Hospital as A.D.M.S. of No. 1 Army Area, and finally as D.D.M.S. of the 4th Corps in the Army of the Rhine. He was twice mentioned in dispatches, in the *London Gazette* of January 1, 1916, and of January 1, 1917. He was twice wounded, and was specially promoted to the rank of colonel in December, 1917, and received the D.S.O. After the war he served as deputy commissioner of medical services at the Ministry of Pensions and as medical superintendent of the Ministry's hospital at Orpington. His chief recreation was hunting; in 1901-2 he was master of the Ashburden Harriers. He married twice and had one son.

Medical News

A notice appears in our advertisement columns this week inviting applications for the Chair of Anatomy in the University of Melbourne at a salary of £1,200 per annum. In another notice applications are invited by the London County Council for a coroner to fill the vacancy created by the death of Dr. Edwin Smith. The salary is £1,700 per annum.

The annual dinner of past and present students of St. Mary's Hospital Medical School will be held at Claridge's Hotel on Saturday, October 2, at 7.30 p.m.

Lord Hartington, in his presidential address at the annual meeting of the Devonshire Royal Hospital, Buxton, referred to a £30,000 scheme on which the committee of management had embarked, and said that these extensions were urgently necessary. The Marchioness of Aberdeen said there was still inadequate public recognition of the fact that rheumatic diseases were curable, although the International League against Rheumatism had collected records of wonderful work in thirty countries.

The sixteenth American Congress of Physical Therapy will be held in Cincinnati, Ohio, from September 20 to 24 at the Netherland Plaza Hotel, under the presidency of Dr. William Bierman of New York. Further information can be obtained from the editorial and executive officers of the Congress, 30, North Michigan Avenue, Chicago.

The thirteenth Medical Congress of the Alps will be held in Salzburg on September 24 and 25, when the chief subject for discussion will be the diagnosis, indications, and treatment of emergencies. Further information can be obtained from Dr. Rudolf v. Rauchenbichler, Schwarzstrasse 12, Salzburg.

The Annual Congress of German Neurologists and Psychiatrists will be held at Munich from September 20 to 22, when the following subjects will be discussed: cerebral tumour, epilepsy, and experiment in psychotherapy. Further information can be obtained from Professor Nitsche, Bezirk Dresden, Pirna.

The Jugoslav Medical Society will hold its annual congress at Novi-Sand from October 3 to 5, when the subjects for discussion will be acute infectious diseases, alcoholism, tuberculosis, and professional problems. Further information can be obtained from the secretary, Seleni Venaz 1 and 2, Belgrade.

An International Congress of Scientific Journalism will be held in Paris from October 7 to 9, under the auspices of the Ministry of Commerce and Industry, the fee being 25 francs. Among the questions set down for consideration are the communication of information to the lay press; the preparation and publication internationally of scientific reviews; and the status of scientific journalists. It is hoped at this congress to formulate proposals to place this branch of journalism on a more satisfactory basis, and to arrange for the popularization of the more important modern discoveries which have general practical implications. All inquiries should be addressed to M. Jules Toutain, the general secretary of this congress, 25, Rue du Four, Paris, VI.

The International Congress of Anaesthetics will be held at the Congress Hotel, Chicago, from October 25 to 28, during the Clinical Congress of Surgery. Further information can be obtained from the general secretary, Dr. F. H. McMechan, 318, Hotel Westlake, Rocky River, Ohio.

The seventh Italian Congress of Forensic Medicine and Insurance will be held at Naples from October 15 to 18, under the presidency of Professor Giuseppe Falco. The subscription is 30 lire. Further information can be obtained from the secretary, Via Luciano Armanni, 3, Santa Patricia, Naples.

A postgraduate course in the technical surgery concerned in the treatment of affections of bones, joints, and muscles will be held by Professors Ombredanne and P. Mathieu, in conjunction with other experts, and under the auspices of the University of Paris, from October 11 to 28. Special attention will be paid to modern operative technique, and there will be practical classes. Further information may be had from Professor Mathieu at the Clinic of Orthopaedic and Adult Surgery, Hôpital Cochin, Paris; the fee is 250 francs.

The Duke of Kent will visit Blackpool on October 21 to open the new hospital which has been built at a cost of £225,000.

The National Association for the Prevention of Tuberculosis have published a ninth edition of their *Handbook of Tuberculosis Schemes*. This forms a complete directory of the tuberculosis work in each administrative area of the United Kingdom, the Irish Free State, and the Channel Isles. The handbook may be obtained from the Secretary-General, N.A.P.T., Tavistock House North, London, W.C.1, and the price is 5s.

The return for 1936 of Vital Statistics of Non-native Officials in West Africa has now been published by the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, price 6d.

An interesting Paris thesis by Dr. Albert Monnier (*Thèse de Paris*, 1937, No. 254) is devoted to the life and work of Jean Charcot, who followed his father as a neurologist for several years before he became an explorer.

Dr. Robert N. Nye has succeeded Dr. Walter P. Bowers as editor of the *New England Journal of Medicine* and Dr. Howard Fox has succeeded Dr. William Allen Pusey as editor of the *Archives of Dermatology and Syphilology*.

The King has appointed Dr. Arthur Hutton McShine, O.B.E., to be a member of the Executive Council of the Colony of Trinidad and Tobago.

The King has approved the appointment of Dr. Noel James Linnington Margetson to be an Official Member of the Legislative Council of the Presidency of Montserrat, Leeward Islands.

Dr. Max Neuburger, professor of medical history at Vienna, has been elected an honorary member of the American Association of the History of Medicine.

Dr. Georges Duhamel, member of the French Academy and editor of the *Mercure de France*, has been elected member of the French Academy of Medicine in place of the late Dr. Legendre.

The Bank of Rome has contributed a sum of 50,000 lire for the foundation of a Prince of Naples Institute for encephalitis to commemorate the birth of the son of the heir to the throne of Italy.

The New York banker Mr. W. Childs has left the University of Yale a sum of about 10 million dollars for cancer research.

A committee has been formed in Paris to erect a statue of Laennec in front of the Hôpital de la Charité, where he was physician.

A memorial to William and John Hunter was unveiled in East Kilbride Public Park on July 28 by Sir Hector J. W. Hetherington, principal of Glasgow University. It bears a relief symbolic carving with the inscription: "To the memory of William Hunter, M.D., F.R.S., 1718–1783, and John Hunter, F.R.S., 1728–1793. They were born at Long Calderwood, and died in London after attaining the highest eminence in the sciences of medicine and biology. Their names will be held in reverent remembrance by a grateful posterity to all generations."

Dr. Laubry has been nominated the first occupant of the new chair of cardiology in the Paris Faculty of Medicine.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
SECRETARY, *Medisecra Westcent, London.*
The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone 62550 Dublin).

QUERIES AND ANSWERS

B. coli Orchitis and Cystitis

"ANTIPODEAN" writes: A male, aged 30, had a severe left-sided orchitis, which developed into an abscess. The laboratory report showed principally *B. coli communis*. Five years later the same organism seemed responsible for a severe attack of cystitis. The patient is healthy in all other respects; the Wassermann reaction is negative; there is no history or evidence of tuberculosis; no constipation, rather the reverse: and the family diathesis is gouty. His habits are temperate and active. X-ray examination showed no calculi in the urinary tract or in the kidneys. The attack cleared up with mandelic acid, but we are puzzled as to the mode of entrance of the *B. coli*, first, to the testicle, and subsequently to the bladder. Can anyone explain this?

Thyroid Treatment of Lymphadenoid Goitre

Dr. P. G. DOOLEY (Co. Waterford) writes: Is it safe to administer thyroid extract, and if so, in what dosage, in a case of lymphadenoid goitre (Reidel's disease) in a female aged 70? Is the size of the gland likely to be influenced in respect of symptoms of dysphagia and dyspnoea? A short course of iodine appeared to aggravate the condition.

Sun Sensitivity

Dr. W. J. BURNS SELKIRK, in reply to "F. L." (*Journal*, July 3, p. 48), writes: In the *Archives of Pediatrics*, Sec. 1,935, pp. 833 to 840, he will find a very interesting communication by Dr. Eder on the administration of iron for such a case, even though the haemoglobin level is high. I have tried it in my daughter's case apparently with good results. Dr. Eder found similar benefit in children who blistered under ultra-violet rays, and he claims that if it is started early it prevents freckling.

Otitis Externa from Swimming Pools

Dr. R. S. GILCHRIST (Doncaster) writes: I wonder if any of your readers have had experience of the treatment and prevention of otitis externa resulting from swimming in pools of chlorinated water. I used to be a "daily dipper" until recently I developed this annoying condition, which begins as a sensation of fluid in the ear passage, with intolerable itching. Within a day or two there is a profuse discharge of serum, and pieces of desquamated epithelium—on one occasion a complete cast of the external ear passage—come away with this discharge. The condition may last for weeks, and even after it has apparently gone about a dozen dips in the pool bring it back again. I have tried rubber ear-plugs, vaseline, and cotton-wool, and a special submarine bathing cap, but none of these keep water out of the ear. For the ear itself ung. hydrarg. nitrat. dil., 5i in

3i liq. paraff., seems to be about the only treatment, and the results from this are extremely slow. Using a stethoscope while the condition is present is both difficult and unpleasant. Avoidance of swimming altogether cuts out one of life's few pleasures. I should be grateful for any advice on treatment and prevention that anyone can offer.

Parathyroid Extract and Enlarged Prostate

Mr. A. P. BERTWISTLE (London, W.1) writes: Can any reader tell me what is the action of parthyroid extract in the treatment of enlarged prostate? I have a patient, aged 78, in whose case cystotomy alone was possible, owing to a high blood urea. The man was going from bad to worse. At times the cystotomy wound closed, and he was in pain; he was becoming very sore, and his morale was rapidly sinking. Under the exhibition of parathyroid extract, grain 1/2, the patient improved at once, the cystotomy closed, and he has been at work for the last four months. I am grateful to Dr. Wood of Guernsey for recommending this line of treatment, which, he says, he used to adopt as a routine with excellent results.

Income Tax

Residence in United Kingdom

"JERSEY RESIDENT" has a total income of £2,500, £857 of which is from a pension. He inquires what income tax will be payable if he becomes a resident in this country.

*** The computation is as follows:

			£ s. d.
Total income			2,500 0 0
Deduct: Personal Allowance	£180		
Child Relief, £60 × 2 ..	£120		
Earned Income Relief, one-fifth of £857	£171		471 0 0
			2,029 0 0
Tax chargeable on £135 at 1s. 8d.			11 7 8
„ „ „ £1,894 at 5s.			473 10 0
	£2,029		484 17 8

This amount has to be compared with the present payment of £253 10s. United Kingdom tax and £40 Jersey tax. In addition surtax would be payable on £500—that is, £27 10s. There would be some relief in respect of Dominion income tax, but the above figures would not be substantially affected.

LETTERS, NOTES, ETC.

Blood Changes in Rheumatism

Dr. A. A. COCKAYNE (Christchurch, Hants) writes: In 1928 Tertius Clarke (*Proc. Roy. Soc. Med.*, **21**, 1004) suggested that rheumatic fever might be due to a protozoon attacking the red blood corpuscles. Examination of fresh unstained blood on a number of occasions during attacks of muscular rheumatism in myself and seven other people has yielded an appearance of some of the red corpuscles which might be due to a protozoon. On examination of a drop of fresh blood a few hours before and during an attack of pain some of the red corpuscles lose their disk shape, becoming globular and exhibiting projections which make them look not unlike the seed-case of the horse-chestnut. When fixed and stained with methylene-blue the projections disappear and there is simply a deeply stained sphere. In the fresh specimen one occasionally sees larger spherical cells containing a number of greenish star-shaped bodies. On one occasion there was a cell undergoing division into segments like an orange, each segment having a shiny black nucleus, rectangular in shape; on another occasion one of the horse-chestnut-like cells seemed to exhibit active amoeboid movement. Quinine seems to clear these cells from the blood in a few hours, together with most of the pain of the rheumatic attack, and to have a definite value in prolonging the intervals between attacks. Neither atebrin nor plasmoquine has been tried, though in theory they also might be efficient against a protozoon.

Termitary Turrets

Dr. WINIFRED COPPARD writes: In the *Journal* of July 17 (p. 118) you reviewed my translation from the Afrikaans of Eugène N. Marais's book *The Soul of the White Ant*. In developing his thrilling theory of the unity of the termitary and its similarity to the human organism, Marais mentions the development of abnormal growths in the "skin" of the termitary, which take the form of useless turrets. These turrets are a hindrance to the health of the organism as a whole, but are continually rebuilt as fast as they are destroyed by wind or weather. They are, in fact, analogous to malignant growths in the human body. Is it not possible that a study of the termitary, which, as Marais points out, is not a heap of dead earth, but a separate animal at a certain stage of development, may provide a clue to the functioning of the healthy human body, and perhaps even a solution to the problem of abnormal growths?

Moukden Medical College

In 1882 Dr. Dugald Christie, the pioneer medical missionary of Manchuria, landed at Newchang and made his way to Moukden. He was unable at first to found a medical centre there owing to intense local hostility, but in 1887 a hospital was opened, and five years later he started to train his assistants in scientific medicine. In 1907 a new and improved hospital was opened, and in 1909 a scheme was launched in Scotland to establish a Christian medical college there. After many vicissitudes the present establishment was brought into being in March, 1912, and the completion of twenty-five years of effective training since then has now been signalized by the publication of an illustrated pamphlet which combines an account of the work in Moukden with an appeal for funds as a memorial to the devoted founder, who died last December. Prominent events in the history of Moukden College include the graduation in 1917 of the first group of medical students after their five years' course of training; the initiation in 1919 of a medical journal in Chinese; the admission of the first women students in 1924; the addition in 1931 of a complete new story to the College teaching block to accommodate classrooms, laboratories, museums, and library; the recognition of the College in 1931 also as the medical faculty of the local university, and in 1934 its recognition by the University of Edinburgh for the admission of its students to post-graduate courses and examinations for Scottish diplomas; and in 1935 the receipt by this institution of the first of a series of grants from the Boxer Indemnity Committee. At present the College is recognized by the Government of Manchoukuo and the University of Edinburgh for certain postgraduate diplomas. The language of instruction is Chinese, but Japanese and English are also taught. About twenty new students are admitted each year to the seven-year course, which is modelled on Scottish University standards. The Church of Scotland Mission Hospital, which is adjacent, has 300 beds, with departments of surgery, internal medicine, tuberculosis, paediatrics, ophthalmology, dermatology and venereal diseases, oto-rhino-laryngology, gynaecology and ante-natal work, and radiology; 5,000 in-patients are treated each year, and there are 120,000 out-patients. Despite the disturbed conditions in the country since its inauguration the College has forged its way ahead. It is proposed to establish a Christie Memorial Chair. Further information may be had from Dr. H. S. D. Garven, Greyfriars, Barnshot Road, Colinton, Edinburgh.

A Warning

Dr. ALICE GILBY (London, S.W.1) writes: A man recently called on me answering to the following description. He was tall but rather bent, and had strikingly pale blue eyes, deformed hands (apparently due to rheumatoid arthritis), and a queer (?) Oxford accent. He is 60 to 70 years old, and shabbily dressed. He claims to be a Dr. Stewart, and says he used to practise in Ebury Street, S.W.1, and was struck off the Register recently for carelessness in dispensing medicine, which led to the death of a patient. He asked for work as a dispenser or assistant. He says he is trying to get back on the Register, and showed a letter purporting to come from his solicitor referring to this and informing him that references would be required before he could appeal for reinstatement. The letter is dated June 9, 1937. When he found I did not fall for the dispenser idea he asked me point blank for money. He claims also to have worked recently for a dental surgeon.

*** We are informed by the dental surgeon that a man calling himself Dr. Stewart on one occasion and Dr. Robinson on another was given money by him, but that he has not employed him.

An interesting pamphlet on the indications for and the therapeutic uses of infra-red rays has just been published by Messrs. Hanovia Ltd., the makers of sollux lamps. The physics and physiology of infra-red radiation are dealt with and the many uses to which the sollux lamps can be put are considered. The booklet may be obtained on application to the makers at their showrooms, 3, Victoria Street, S.W.1.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

149 Sclerodermal Dystrophies

H. CURSCHMANN (*Med. Welt*, July 3, 1937, p. 925) prefers to consider sclerodermia as one symptom in a clinical picture presenting many others, and to term the whole "sclerodermal dystrophy." In sclerodermia pluriglandular disturbances are common. Curschmann describes cases of dysfunction of the thyroid, the testis, the ovary, the anterior pituitary, and the adrenals, all of which occurred with sclerodermal skin conditions, and in addition allergic factors were often contributory causes. Eosinophilia was found, accompanied by secondary anaemia in many cases, and the author describes one case of sclerodermia co-existent with pernicious anaemia. In another he found that a true C-avitaminosis not only produced scorbutic skin haemorrhages but also generalized pigmentation and a typical sclerodermia. He points out that in sclerodermia scurvy should be looked for and the urine tested for ascorbic acid before and after the administration of vitamin C. Treatment of the secondary skin changes is then more likely to be effective. He advocates a trial of vitamin therapy in other cases of this condition, as most forms of treatment, especially in chronic and dystrophic cases, have hitherto been ineffective.

150 Undulant Fever

G. OLIN (*Hygiea*, Stockh., June 15, 1937, p. 401) gives an account of the behaviour of undulant fever in Sweden, where it is caused only by *Brucella abortus*, *B. melitensis* and *B. suis* playing no important part in this country. The geographical distribution of the 1,121 cases of undulant fever notified in the period from 1929 to 1936 corresponded to that of infectious abortion in cattle, but while the latter exists in at least 10 per cent. of all the herds and serological tests have suggested that some 33 per cent. are infected, the incidence of undulant fever in man in the period under review was only 2.04 a year per 100,000 inhabitants. The comparative immunity enjoyed by man was traced by the author to the feebly pathogenic properties of *B. abortus* so far as human beings are concerned. Yet, when they fell ill, the average duration of the fever in 115 cases was over ninety-one days, varying from 8 to 532 days. The post-febrile pediod of convalescence was also long, being usually about three months. In all the illness commonly lasted six months, but a fatal issue occurred in only 2.2 per cent. of cases. The author considers that fully three-quarters of all the Swedish cases were due to milk infections and not to direct contact. He foresees in the extension of milk pasteurization the most effective preventive of undulant fever. Of the benefits of prophylactic inoculation he is more doubtful, although it may be advisable for those who are especially exposed to contact infections. His skin tests on 293 persons with an antigen have convinced him that a good proportion of the community undergo infection unwittingly and without any noticeable clinical reaction.

151 Late Effects of Tetanus

O. SPRENGER (*Zbl. inn. Med.*, June 5, 1937, p. 481) states that after recovery from tetanus skeletal or other bony deformities, as well as muscular rigidity or contractures, have occasionally been noted. The occurrence of convulsions as a late effect is rare. The case is reported of a barber, aged 20, who had recovered four years previously from acute tetanus, which had set in four days after a wound of the right thumb. Although he was following his profession, he was found to exhibit chronic extensor convulsions of the legs and buttocks on stimulation of the skin or joints of the lower extremities, and of the arms on deep pressure on the internal bicipital sulcus. Spontaneous convulsions very rarely occurred—a point against the alternative diagnoses of cramp-neurosis, chronic tetanus, or a psychogenic functional syndrome. The blood urea was normal. Sprenger believes that the very thorough intraspinal serum injections, carried out in the acute stage and followed by a notable pleocytosis in the liquor, were responsible for the later convulsions. The patient showed notable intensification of the pyramidal tract reflexes.

152 Acute Eosinophilic Leukaemia

C. E. FORKNER, C. T. TENG, Y. C. C'HU, and W. COCHRANE (*Chin. med. J.*, May, 1937, p. 609) record a case of acute eosinophilic leukaemia, which they claim to be the fifth recorded in the literature. The patient was a male Chinese police officer aged 33. His illness lasted for twenty-seven days, and ended fatally. The main findings were as follows. (1) There was restlessness and mental cloudiness; (2) the neck was rigid; (3) the left plantar reflex was extensor, but the right was doubtful; (4) the superficial lymph nodes were enlarged; (5) purpura was present; (6) there was leukaemic retinitis; (7) the gums were hypertrophied; (8) the uvula and pharynx were ulcerated; (9) blood pressure was low—88/54 mm. Hg—and there was Cheyne-Stokes respiration; and (10) the liver and spleen were enlarged. A blood examination made three days before death showed red blood cells 3,890,000, haemoglobin 11.8 per cent., and white blood cells 265,000, of which 81 per cent. were eosinophils. The platelets were much reduced in number, and the cerebrospinal fluid contained segmented eosinophils and eosinophilic myelocytes. No parasites or ova were found in the faeces when examined on five occasions. Towards the end the patient developed pneumonic symptoms. No post-mortem examination was made.

Surgery

153 Fertility after Vasectomy

H. KNAUS (*Zbl. Chir.*, June 26, 1937, p. 1506) draws attention to the experimentally established fact that spermatozoa only remain fertile for a few days when submitted to the temperature of the abdominal cavity, whereas fertility lasts as long as forty days in the epididymus owing to the relatively lower temperature of the scrotum. There is a difference of from 2.7° C. to 7.8° C. between the temperature of the scrotum and that of the abdominal cavity. The cause of the death of the spermatozoa in the seminal vesicles is their accelerated mobility, which exhausts their potential energies. Therefore, when the vas is resected with the object of sterilization, this should be done outside the scrotum. In this way spermatozoa retained in the seminal ducts will be sterile by the time the operative wound has healed.

154 Lymphangiomata

A. O. SINGLETON (*Ann. Surg.*, June, 1937, p. 952) divides lymphangiomata into three types: simple or capillary, cavernous, and cystic. The first of these occurs superficially, and is easily diagnosed and removed. Cavernous lymphangiomata consist of a framework of connective tissues in which there are numerous single and communicating lymphatic cysts. There are also many anastomosing channels, irregular masses of lymphocytes, lymph nodes, and lymph follicles. These tumours are found in the neck, axilla, and groin, and may be so extensive that their removal necessitates major operation. Cystic lymphangiomata are tumours with larger, thin-walled, convoluted cysts filled with lymph and lymphatic fluid. They

are commonly found in the neck, and may be present for some time before they enlarge. Lymphangiomata may be found in any part of the body; the most formidable are those within the abdomen, both retroperitoneally within the mesentery of the intestines and in the omentum. In these cases intestinal obstruction is a common complication. Because of the dysfunction of the lymphatic chain infection is a serious development as it spreads rapidly through the connecting cysts. There are also communications between the cysts and venous radicles, and a blood-stream infection may develop. Excision is the usual method of treatment, and it may be difficult owing to the extent of the process. Radiation, either alone or in conjunction with surgery, is of value. Details are given of twenty-eight cases; operative treatment was carried out in all but two instances, in which radiotherapy alone was applied. In nearly every case recovery took place, and there was a very low percentage of recurrence.

155 Chronic Appendicitis

J. LE SAGE (*Union méd. Can.*, June, 1937, p. 601) distinguishes between the two types of chronic recurrent appendicitis, one of which follows an acute attack while the other is chronic from the onset. In the first case surgical intervention should be carried out, but in the second, medical treatment should first be tried. A case is reported in which the patient had suffered from symptoms of asthenia accompanied by amnesia, with eructation, and other digestive disorders for ten years. Symptoms were most pronounced after meals and were relieved by purging. In addition, the man had had attacks of vertigo, sweating, and biting of the tongue. He was a large eater, a hard worker, and a heavy cigar smoker. The patient remembered that he had had acute indigestion and colic at the age of 15. On examination the abdomen was distended, notably in the right hypochondrium; there was also a small umbilical hernia. A diagnosis of intestinal stasis was made, with pluriglandular insufficiency as a result of intestinal toxaemia. Adrenaline, mucilage, and milk of magnesia were given, but the constipation persisted. As the patient's condition did not improve, a bismuth meal was given, and this showed evidence of appendicitis, with a fixed retrocaecal appendix. Operation was carried out, and the caecum and the appendix were found to be bound down with adhesions. The omentum, which was also fixed by adhesions to the anterior abdominal wall, was freed. The general condition improved, the digestive function soon became normal, and the epileptiform syndrome disappeared.

156 Late Effects of Infantile Coxitis

S. C. IVERSEN (*Hospitalstidende*, June 8, 1937, p. 629) has examined sixteen children and thirteen adults who had suffered from an apparently non-specific coxitis characterized by pain, fever, swelling, and fixation of the hip, usually accompanied by abscess formation, during the first year of life. The examination of these patients many years after the onset of their disease revealed profound anatomical and radiological changes, with corresponding deformities and functional disturbances; the movements about the hip were seriously impaired. All the patients limped as a result of shortening of the affected limb, dislocation at the hip, limited range of movement, ankyloses, contractures, weakness of certain muscles, or secondary changes in the knee, ankle, or other joints. To a shortening of 2 to 4 cm. about the joint itself could be added the shortening due to adduction and atrophy of the femur, so that in several cases there was an effective shortening of as much as 9 cm. In as many as twenty-two cases the hip was dislocated, the great trochanter resting against the iliac crest. These patients were in a worse condition than the subjects of congenital dislocation of the hip, whose gait closely resembles theirs. In spite of their deformities they were able to lead an active life, and some could bicycle and skate. The dominating disturbance in adults was pain, and they all complained of this. It radiated down the leg, but seldom to the back, as is the case with congenital dislocation of the hip. The author's remedies include early operative intervention, with incision of abscesses and the readjustment of the head of the femur in infancy.

Therapeutics

157 Barbiturate Poisoning

COUBRIN and SOUBIRAN (*J. Méd. Bordeaux*, June 5, 1937, p. 746) point out that in barbiturate poisoning the bulbar effect is more important than that on the higher centres. It occurs about six hours after the ingestion of 5 to 6 grammes. Respiration is superficial, and the pulse, while regular, becomes almost imperceptible. The heart is affected by the direct toxic action on the myocardium, its nerves, and their centres, and indirectly by the deficient respiration. It is necessary to maintain respiratory function by mechanical means, and in this respect Cot's apparatus is superior to manual or medicinal methods. The administration of carbon dioxide is a valuable adjuvant. There is no doubt that continued artificial respiration reacts favourably on the heart and pulse, but in all cases care must be taken to maintain body heat.

158 Tuberculous Diabetics

E. MELZER (*Dtsch. Tuber.-bl.*, July, 1937, p. 161) has treated a number of diabetic tuberculous patients with insulin, and comes to the conclusion that the patients respond fairly well to this therapy provided they are given a liberal diet. The treatment thus applied improves the general condition of the patient, and also the condition of the lungs. According to the author it would be wrong to apply a strict diabetic diet in such cases. On the contrary, the diet must approach as nearly as possible to the normal, while the doses of insulin should be kept high. Only in this way is it possible to achieve success in cases which were considered hopeless before the insulin era.

159 Pulmonary Tuberculosis

O. LASSEN (*Ugeskr. Laeg.*, June 10, 1937, p. 615) has undertaken an intensive study of the clinical histories of the last 100 patients who died of open pulmonary tuberculosis in the town of Aarhus, Denmark. The average age at death was between 31 and 32, and two-thirds were under 35. The clinical and radiological reports at the time when the diagnosis was first made showed in as many as seventy-eight cases such advanced disease that little hope of recovery could be entertained; and among the remaining twenty-two cases advanced, but still curable, disease was often found. A study of the institutional careers of these 100 patients revealed that as the disease progressed the duration of hospital or sanatorium treatment became longer, and as all the cases terminated fatally no permanent benefit could be claimed on their behalf for the institutional treatment they had received. Did it benefit the community by the limitations it imposed on opportunities for spreading the disease? The author is inclined to think that these patients did all the harm they could in this respect while they were still leading free and active lives. In Aarhus 82 per cent. of all the deaths from tuberculosis take place in hospital, and though this arrangement certainly ensures that the patients receive good nursing, the author wonders how valuable it is from the epidemiological point of view. He notes in this connexion that while the tuberculosis mortality has recently declined in a most encouraging fashion, there is not a corresponding decline in the tuberculosis morbidity.

Anaesthesia

160 Oral Intubation

W. S. SYKES (*Anesth. and Analges.*, May–June, 1937, p. 133) describes a simple method of tracheal intubation which he claims has many advantages over those which at present are most commonly used—*namely*, *Magill's* blind nasal method and oral intubation through a direct vision laryngoscope. His tube is a modification of "Kuhn's tube"; it is made of rubber with a central fenestrated point at the tip, the proximal part is stiffened by a wire coil and terminates in an adapter, by means of which it can be connected to an ether vaporizer or gas machine. For introduction it is mounted on a curved metal introducer similar to Kuhn's. The patient is deeply anaesthetized and the mouth gagged open. The anaesthetist stands on the patient's right, hooks up the tongue and epiglottis with the first two fingers of the left hand, and then slides the tube on its introducer along the posterior surface of the epiglottis and so without trauma into the larynx. The procedure is completed by connecting the machine and packing gauze round the tube in the pharynx.

161 Intravenous Scopolamine-eukodal-ephetonin

PHILIPPIDES (*Schmerz Narkose-anaesth.*, June, 1937, p. 39) states that the properties of scopolamine render it peculiarly valuable as a hypnotic and analgesic; it inhibits the parasympathetic and so, like atropine, it decreases the tone and motility of smooth muscle and the activity of the glands, while in contrast with the latter it depresses both the motor and sensory centres of the central nervous system. When combined with a morphine preparation, such as eukodal, a powerful analgesic effect is obtained, but is often accompanied by undesirable depression of circulation and respiration. These effects are its chief drawbacks, together with the liability to individual variation in response when it is given hypodermically in one dose. The addition of adrenaline has a detoxicating effect, and Merck's "weak scopolamine solution," which the author recommends, contains in each cubic centimetre about 1/130 grain scopolamine, 1/6 grain eukodal, and 1/3 grain ephetonin, which has a more lasting effect than adrenaline. Accurate individual dosage is ensured by slow intravenous injection, which is stopped when the patient feels comfortably tired; a complete twilight sleep is not aimed at, but self-control is maintained and patients are able to co-operate. Usually less than 1 c.cm. injected in from one to one and a half minutes is needed; resistant cases may require more than this amount, and caution must be observed in poor risks. The injection usually causes a rise in blood pressure of from 15 to 20 mm. Hg, and an increase in the pulse rate of from 20 to 30. The dose may be repeated in one to one and a half hours, as its effect wears off. The method is particularly recommended as an adjuvant to local and spinal analgesia, and for the rapid relief of severe pain of any kind, notably renal, gall-stone, or other colic. It is also preferable to morphine and atropine as a preliminary to general anaesthesia, and it may also be used before intravenous evipan.

162 Blood Sugar Variations

A. ATNAN and E. FENZ (*Wien. Arch. inn. Med.*, June 30, 1937, p. 301) have investigated the influence of ether, evipan, and spinal anaesthesia on the blood sugar. They found that it showed a much greater increase during and after ether anaesthesia than after spinal anaesthesia. The increase was independent of the amount of percaine injected and of the level of the spinal injection, but the blood sugar remained higher for six hours after spinal anaesthesia as compared with twenty-four hours after ether anaesthesia. The increase was less in a case of mild diabetes for both ether and spinal anaesthesia. This investigation seems to prove that spinal anaesthesia is not contraindicated in diabetes.

163 Anaesthesia and Maternal Mortality

T. L. MONTGOMERY (*J. Amer. med. Ass.*, May 15, 1937, p. 1679) is concerned at the large number of maternal deaths associated with anaesthesia, and has investigated the maternal mortality in Philadelphia during the period 1931 to 1935. He has published statistics covering 155,133 live births and 1,096 maternal deaths, which show that there has been a general improvement except in the case of deaths occurring during labour or within twenty-four hours of it, while the number of maternal deaths attributed to errors on the part of the physician have increased by over 100 per cent. The author holds that an important cause of mismanagement lies in the method of analgesia, anaesthesia, or amnesia, and he gives warning against the too ready adoption of methods which have received wide publicity through enthusiastic articles in the lay or medical press. Safety is the most important factor, and he entirely condemns spinal anaesthesia on account of its high mortality in obstetrics. He considers the barbiturates more dangerous than is often claimed, and they are also uncertain and may be troublesome. His experience of chloroform is very limited, but he points out its dangers in pre-eclampsia. Ether appears to be the safest anaesthetic, but should not be given too freely or for too long. In the form of Gwathmey's oil–ether it can be very useful. Gas-oxygen is of value and does not interfere with uterine contractions, but it should not be given when relaxation of the muscle is needed. The author makes a strong plea for the greater use of local anaesthesia with 1/2 per cent. novocain, both for Caesarean section and for infiltration of the perineum during delivery. He emphasizes the fact that patients should not be promised any routine form of pain relief, but that each case should be dealt with individually at the onset of labour.

164 Spinal Anaesthesia in Gynaecology and Obstetrics

R. MEYLAN (*Gynéc et Obstét.*, May, 1937, p. 339) has used spinal anaesthesia in 220 of the 1,069 gynaecological operations performed in the Geneva Women's Hospital from 1930 to 1934. Owing to technical difficulties and the lack of expert anaesthetists he has abandoned percaine, and now uses "syncaine" crystals, which are dissolved in the cerebrospinal fluid and reinjected with the patient in the sitting position in the third or fourth lumbar space. Anaesthesia is complete as soon as the patient has been placed horizontal and prepared for operation. The author stresses the importance of comfort on the table, and of the part played by the assistant, who supervises the patient, in maintaining morale. An injection of pantopon and atropine is given three-quarters of an hour before, and blood pressure is kept up by preliminary injections of ephedrine or cardiazol–ephedrine, repeated if necessary. The inhalation of carbon dioxide–oxygen mixtures is often used for treating nausea, etc., with success. Of the 200 cases in which "syncaine" was administered seventy-seven gave perfect results, in seventy-eight anaesthesia was adequate though incomplete, and in forty-five some supplementary inhalation anaesthetic was required. The results were particularly favourable in vaginal operations. The author ascribes some of the failures to Sebrechts's "rachi-resistance." Encouraged by his success in gynaecology, the author has used spinal anaesthesia in 100 obstetric operations, of which fifty-nine were Caesarean sections; in all, there were sixty good results, thirty-one poor but adequate, and nine failures. In general the results obtained in obstetrics were better than in gynaecology, and smaller doses could be employed. The author observes the usual contra-

indications, and in obstetrics advises particular caution in the presence of haemorrhage or shock; he regards cardiovascular disease as a complete contraindication. The method is essentially indicated in Caesarean section, which is rendered almost bloodless by the early and complete uterine retraction, which may, however, render internal version difficult. In Caesarean section and hysterectomy the anus should be well plugged to prevent the soiling of the vulva through the active peristalsis which occurs. The relaxation of the cervix and of the perineal and pelvic muscles renders forceps delivery easy, but owing to the danger of a complete rupture of the perineum the author does a wide lateral episiotomy as a routine. The most troublesome complication was headache of a few days' duration, which was resistant to treatment. One death occurred among the 300 cases, from septic meningitis following the lumbar puncture; of the other nineteen fatalities none could be ascribed in any way to the anaesthesia.

Obstetrics and Gynaecology

165 Athmocausis for Uterine Haemorrhage

J. A. SCHOCKAERT (*Brux. méd.*, May 23, 1937, p. 1091) discusses the various methods of treatment, including hormone therapy, surgery, and radiotherapy, which may be used in cases of uterine haemorrhage. Athmocausis, which consists of the destruction of the endometrium by the passage of steam, is a further method of treatment valuable in women before the menopause. By this means amenorrhoea is produced without affecting the internal ovarian secretion. The process and apparatus are fully described, and the results, which were mostly satisfactory, of forty-five cases treated by this method are given. The majority of patients were between the ages of 30 and 45, and fifteen were under forty. In order to obtain the best result the treatment must continue for three and a half to four and a half minutes; cases which were treated for a shorter period were liable to recurrence. A total of seventy patients were treated without any untoward consequences. Care was always taken to treat the fundus of the uterus for a longer time than the neck in order to avoid an accumulation of blood behind a cervical stenosis. Athmocausis of short duration is indicated in cases of uterine haemorrhage in young persons when curetting and hormone therapy have proved unsuccessful and hysterectomy is inadvisable. In most cases treatment for four to four and a half minutes is required for the destruction of the uterine mucosa in order to cure pre-menopausal or menopausal haemorrhage. This should be carried out in patients over thirty-five years of age. Contraindications are inflammatory conditions of the uterus and adnexa, endometritis, haemorrhage caused by retention of the placenta, and uterine fibromata.

166 Unilateral Absence of the Adnexa

P. CAFFIER (*Zbl. Gynäk.*, June 26, 1937, p. 1506) records the case of an unmarried woman, aged 23, in whom laparotomy for fixed retroversion of the uterus revealed absence of the right ovary and of the right Fallopian tube, except for a button-shaped thickening at the site of the uterine insertion. He remarks that unilateral absence of the adnexa has always been a riddle, and points out that if the criteria of Kermauner be adopted—namely, the absence of one side of the ovary, Fallopian tube, half the uterus, round ligament, and inguinal canal, as well as the kidney and ureter—only six cases at the most of congenital non-development have been recorded. In all others the uterus has not been of the unicornis type. Twelve well-authenticated cases similar to Caffier's have been described, in half of which, however, 1 to 1.5 cm. of the internal end of the tube was present. It is probable that some of them have been due to past pelvic inflammation or past acute torsion and detachment, the clinical features having then been confused with typhoid, appendicitis, etc.; clear signs of tubo-ovarian amputation by torsion have been found at necropsy in young children. From such considerations and from the fact that careful search has sometimes revealed in the omentum or elsewhere microscopical signs of ovarian tissue embedded in scar in cases in which the adnexa had apparently been absent on one side, Caffier agrees that congenital absence is of the utmost rarity, and that the disappearance may take place during foetal life. Compensatory enlargement of the other ovary has been noted in several cases; the majority show cystic or inflammatory disease on the other side. The defect is by no means a cause of sterility provided that the remaining ovary remains healthy. Three out of sixteen cases had contralateral dermoids, but few had menstrual abnormalities, although usually puberty occurred late. The cases in question afford no evidence as to the credibility of the theory which would explain the birth of males or females as due to the fertilization of ova from the respective sides; and this is in accordance with Caffier's own experience of patients on whom he has performed unilateral oophorectomy.

Pathology

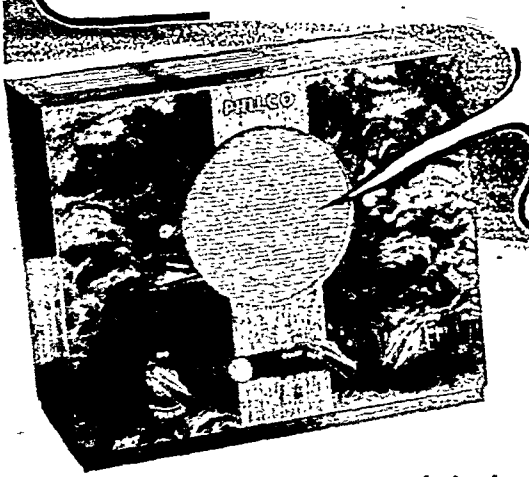
167 Opsonin Tests in Pertussis

P. KENDRICK, J. GIBBS, and M. SPRICK (*J. infect. Dis.*, May–June, 1937, p. 302) have studied the immunity problem in pertussis by immunizing children with a "phase I" *B. pertussis* antigen of 20 billion killed germs per c.cm. The progress was estimated by a special mode of numerical observation of the bacilli ingested in leucocytes in a citrated blood drop incubated with the antigen—a method more easily conducted than others in infants. The use of the opsonic index was not practicable by reason of the packing of the cells, and a modified "opsonocytophagic" count was done. A progressive increase of opsonins was noted during immunization. The reaction decreased after six months and became perceptibly weaker after two years, although up to the age of 18 months a negative response is usual in those with no history of an attack. It is hoped that the method may be of value in studying vaccine dosage and potency. During the attack the opsonocytophagic test does not become positive early enough to be of general diagnostic value.

168 Nutritive Value of Boiled Milk

S. GRAHAM and N. MORRIS (*Arch. Dis. Childh.*, June, 1937, p. 169), in order to decide whether or not sterilization altered the biological value of milk, gave two children a diet in which 50 per cent. of the calorific value and 70 per cent. of the total protein were supplied in the form of milk. The calorific intake as well as that of proteins, minerals, and fats, were ample. Milk from the same source was utilized throughout the investigations. All the milk given to one child was boiled for three minutes. Urine and faeces were collected for seven days after the diet had been given over a period of not less than five days. Thereafter, in one case the milk was changed from raw to boiled, and in the other from boiled to raw. This was continued for a fortnight, and the two cases were then given their original variety of milk for another fortnight. The results of these analyses are given in tables, and indicate that there is no evidence that the boiling of milk over short periods impairs either its absorption or utilization when the calorific intake is adequate. It is still possible that over long periods, when the intake is no more than sufficient, the sterilization of milk might make a difference to its nutritive value, but no proof of this has been forthcoming.

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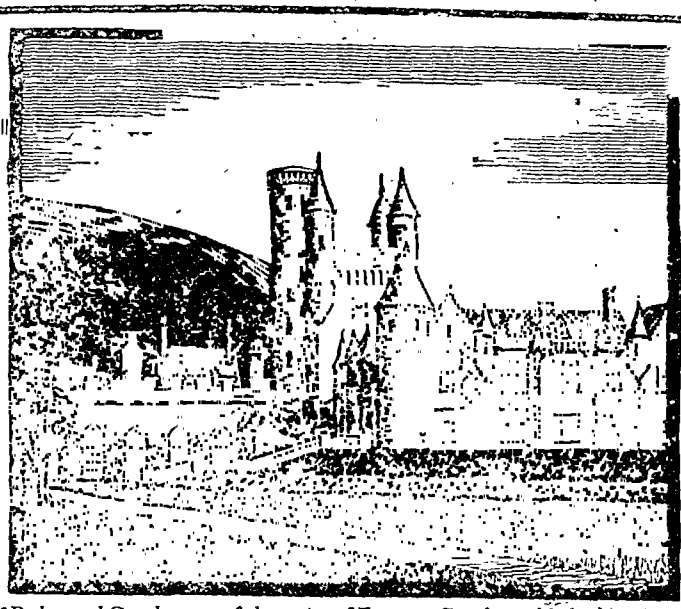
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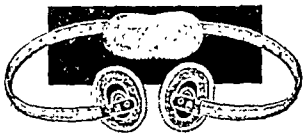
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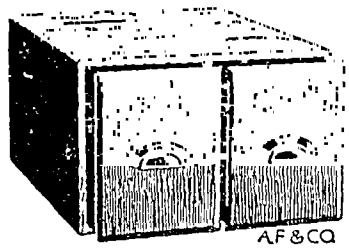


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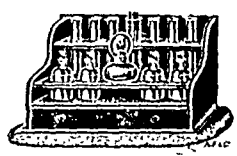
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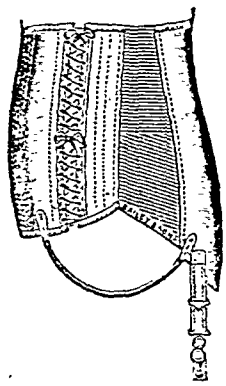


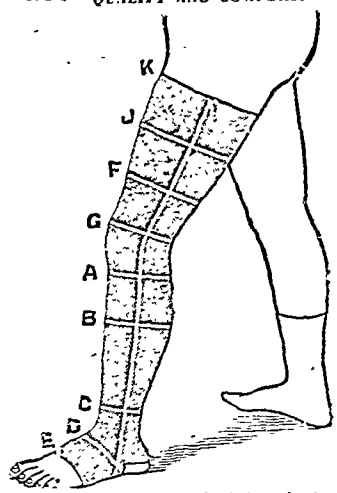
Fig. B690

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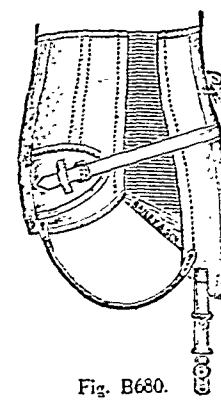


Fig. B680.

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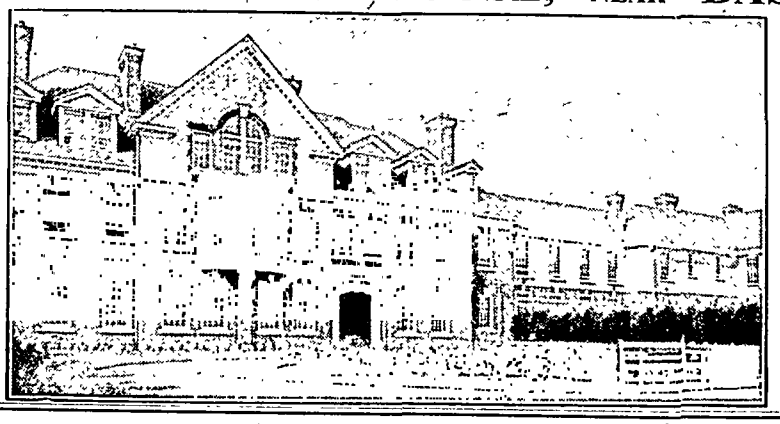
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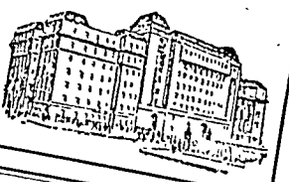
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THE ONLY SANATORIUM IN SWITZERLAND UNDER BRITISH OWNERSHIP AND CONTROL, AND WITH A DAY AND NIGHT STAFF OF BRITISH TRAINED NURSING SISTERS.
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CHISWICK HOUSE, PINNER, MIDDLESEX.

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A Private Hospital for the Treatment and care of Mental and Nervous Illnesses in both Sexes.

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THE GROVE HOUSE, CHURCH STRETTON, SHROPSHIRE.

A private Home for the care of and treatment of a limited number of Ladies mentally afflicted. Voluntary and Temporary Patients received under the new Mental Treatment Act, 1930.
Medical Superintendent, Dr. McCLINTOCK.

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Large grounds, 400 ft. above sea. HOME for ladies Mentally afflicted Voluntary Boarders received. Station: Brentwood and Shenfield 1 mile. Liverpool St. 26 min. Apply, Dr. HAYNES.

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FUNCTIONAL NERVOUS DISORDERS AND MEDICAL AND CONVALESCENT CASES

The Home is a Mansion of Historical interest, standing in 15 acres of garden and grounds, and is situated 14 miles from Northampton, and 12 miles from Bedford on the main London to Northampton Road, fifty miles from London. Both sexes are accommodated. Psycho-therapeutic Treatment is used extensively in suitable cases. Radiant Heat, X-Ray and Ultra-Violet Light, Diathermy and Foam Baths, Billiards, Tennis, etc.
Apply, Dr. D. E. M. DOUGLAS-MORRIS.
Telephone: Newport Pagnell 121.

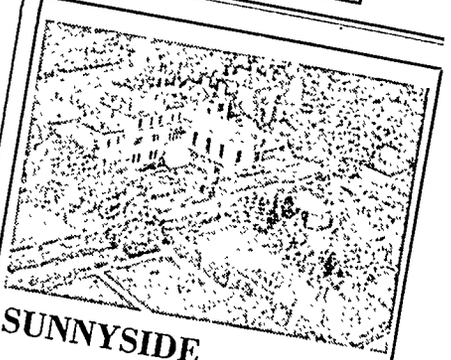
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RESIDENT PATIENT.—A COMFORTABLE HOME in Doctor's residence required for young man recovering from mental illness, within radius of sixty miles from Wellington, Salop. Country district preferred.—Address, No. 6013, B.M.A. House, Tavistock Square, W.C.1.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

The next ordinary PROFESSIONAL EXAMINATION for the MEMBERSHIP will commence on Tuesday, October 12th, 1937.
Candidates are required to give twenty-one days' notice in writing to the Registrar of the College, to whom all certificates and testimonials required by the Bye-laws must be sent at the same time.
Candidates who propose to submit published work under the regulations now in force are required to give twenty-eight days' notice, and should apply in writing to the Registrar, without delay, for detailed instructions as to the procedure they should follow.
RAYMOND CRAWFURD, M.D.
Registrar.
Pall Mall East, S.W.1.



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Situated one hour from London and fifteen minutes from Brighton, provides the ideal spot for patients convalescing after illness or operation, or for those requiring treatment by Physical methods. Fully Qualified Staff—Resident Physician. Formed on the American plan, patients reside in the cheerful atmosphere of a high-class Country Hotel, free from the irksome restrictions of a nursing home or clinic.

The Climate is mild but not relaxing. Overlooking the delightful South Downs, yet sheltered from cold winds.

Treatments available include Foam and other Baths, Radiant Heat, Ultra-violet and Infra-red Ray, Diathermy, Electro-therapy, Massage, Remedial exercises, etc. Special Dieting where necessary.

An invitation is extended to Medical Practitioners to inspect the Restorium.

Write for fully illustrated Brochure and Terms to: Physician in Charge, SUNNYSIDE RESTORIUM, Hassocks, Sussex.
'Phone: Hassocks 103.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE.

The usual three weeks' Post-graduate Course for General Practitioners will be held this autumn from Monday, September 20th, to Friday, October 8th. The course will include clinical Instruction in Surgery (including Orthopaedics), Medicine (including Neurology, Cardiology, Fevers, Children's Diseases and Skin Diseases), Obstetrics and Gynaecology, and Diseases of Eye, Ear, Nose and Throat. Instruction will be given each afternoon in the Medical School in Clinical Pathology, Bacteriology, Physiology and Biochemistry. There will also be demonstrations on the uses of Radium and lectures on Medicine and Therapeutics. Fee for the course, five guineas.
For further particulars apply to:—
Professor DAVID S. TORRENS,
School of Physic, Trinity College, Dublin.

M.R.C.P. LONDON
M.R.C.P. EDINBURGH
F.R.F.P.S. GLASGOW

Short Intensive Oral and Postal Revision Courses in preparation for these qualifications.
Apply, SECRETARY, Medical Correspondence College, 19, Welbeck Street, W.1.
Free booklet "The M.R.C.P. and How to Obtain It" on application.

LONDON HOSPITAL MEDICAL COLLEGE AND DENTAL SCHOOL

THE WINTER SESSION will open on FRIDAY, OCTOBER 1st.

The London Hospital serves the East End of London, and with eight hundred and fifty beds is the largest voluntary Hospital in England. The Out-patient Department, which deals with a hundred thousand new patients per annum, is extensively used for teaching.

The size of the Hospital necessitates a large number of resident medical officers. Every year seventy resident house physicians and house surgeons and eighty salaried non-resident clinical assistants are appointed from among recently qualified students. The opportunities which these appointments offer for obtaining clinical experience are invaluable.

The Medical College is attached to the Hospital and is staffed by Professors of Anatomy, Physiology, Bacteriology, Chemical Pathology, Morbid Anatomy and Medicine of the University of London.

Special Courses in Anatomy and Physiology for the Primary F.R.C.S. and advanced courses in Surgery for the Final F.R.C.S. Examination, and in Medicine for the M.D. and M.R.C.P. Examinations, are held twice a year.

Entrance Scholarships and prizes of the total value of £950 are awarded annually. Research Funds to the value of £113,000 permit of assistance being given to students and graduates engaged in medical research.

The Medical College contains a modern Museum of Pathology and a Library provided with all the current medical periodicals in charge of a full-time librarian. There is also an Athenæum Club and Dining Hall, a Gymnasium, a Fives Court, and two Squash Courts in the Students' Hostel. The Athletic Ground of 13 acres at Hale End is within easy distance of the Hospital.

The Hospital is only 20 minutes from Charing Cross and Baker Street Stations. For those who wish to live in immediate proximity to the Hospital there is accommodation for sixty students in the Students' Hostel.

Further details may be obtained from the Dean, Dr. A. E. Clark-Kennedy, M.D., F.R.C.P., Physician to the Hospital and Fellow of Corpus Christi College, Cambridge, who is always pleased to meet students wishing to see the Hospital and College and to whom application for admission should be made.

Turner Street, London, E.1.

LONDON HOSPITAL MEDICAL COLLEGE

F.R.C.S.

A Course of Instruction for the FINAL FELLOWSHIP EXAMINATION will begin on Monday, August 30th, 1937. Fees (exclusive of Operative Surgery), 25 guineas. Operative Surgery, 10 guineas.

Further particulars may be obtained from:—Dr. A. E. CLARK-KENNEDY, M.D., F.R.C.P., Dean, London Hospital Medical College, Turner Street, London, E.1.

LONDON HOSPITAL MEDICAL COLLEGE

PRIMARY FELLOWSHIP EXAMINATION.

A COURSE OF INSTRUCTION for the above Examination will begin on Wednesday, Sept. 1st. The fee for the Course is 15 guineas.

Further particulars may be obtained from Dr. A. E. CLARK-KENNEDY, M.D., F.R.C.P., Dean, Turner Street, Mile End, E.1.

ADVICE ON THE CHOICE OF SUITABLE SCHOOLS AND TUTORS

for BOYS and GIRLS with prospectuses of recommended establishments will be given free of charge to parents stating age of pupil, district preferred, range of fees and type of school required.

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(Incorporated by Royal Charter)

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Midwifery Training School

PRACTITIONERS and MEDICAL STUDENTS admitted to Hospital Practice with operative Midwifery and Obstetrical complications—nearly 2,000 patients annually. Fees £16 16s. per month or £8 8s. per fortnight (inclusive of board-residence).

PUPILS trained as Midwives in accordance with C.M.B. regulations. Reduced fees under Ministry of Health Scheme. Sister-Tutor on Staff. Post-graduate Courses in Analgesia.

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MARYLEBONE ROAD, N.W.1

Medical Students and Qualified Practitioners admitted to the Practice of this Hospital. Unusual opportunities are afforded of seeing Obstetrical Complications and Operative Midwifery (about one half of the total admission being primiparous cases). Over 2,700 patients are admitted to the Wards annually, and in the Ante-natal Department there are over 20,000 attendances per annum. Clinical demonstrations are given by the Staff daily.

For rules, fees, etc., apply H. B. STOKES, Secretary-Superintendent.

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	Final 1919-36	183
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D.P.H.	(Various) 1906-36 (Completed Exam.)	342
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CONTENTS: The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations.* Postal Courses, and Oral Classes. Suggestions for the Higher Medical Examinations. Suggestions for the Higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Courses. Openings for Women. Hints for writing theses. Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, 17, Red Lion Sq., London, W.C.1. (Telephone: Holborn 6313.)

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BEHNKE METHOD. Estab. 1880. Cases non-resident, treated at 39, Earl's Court Sq., S.W.5, and in residence, in the Summer holidays at Miss BEHNKE'S house on the Chilterns. "Pre-eminent success in education and treatment of stammering and other speech defects."—"Times." "Thoroughly physiological principles."—"Lancet." "The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."

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UNIVERSITY OF BIRMINGHAM. FACULTY OF MEDICINE.

(Associated with the General, Queen's and Special Hospitals for Clinical Teaching)

THE NEXT SESSION OPENS ON OCTOBER 4th, 1937.

The University grants Degrees in Medicine, Surgery and State Medicine, and a Diploma in Public Health, also Degrees and a Diploma in Dental Surgery.

The Courses of instruction are also adapted to meet the requirements of other Universities and Licensing Bodies.

HOSPITAL APPOINTMENTS.

A large number of Resident Hospital appointments in Birmingham and District are open to qualified students of the School.

SCHOLARSHIPS, EXHIBITIONS AND PRIZES.

Entrance and other Scholarships and Exhibitions and various Prizes and Medals are awarded annually in the Faculty of Medicine, full details of which are in the Faculty syllabus.

SCHOOL OF DENTISTRY.

(University of Birmingham and Birmingham Dental Hospital).

The School of Dentistry, in conjunction with the General and Queen's Hospitals, affords a complete curriculum for the Dental Diplomas and Dental Degrees of the University and all other Licensing Bodies. A Dental Scholarship of the value of £46 17 6, tenable for one year, is offered annually.

PRE-REGISTRATION MEDICAL AND DENTAL EXAMINATIONS.

The necessary courses of Instruction in Chemistry, Physics and Biology may be attended in the University Hospital.

For syllabus and further information apply to the Registrar.

STANLEY BARNES, M.D., D.Sc., F.R.C.P., Dean of the Faculty of Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE

PRINCE OF WALES'S GENERAL HOSPITAL, N.15.

The Practice of the Hospital is limited to Medical Practitioners. Particulars from J. BROWNING ALEXANDER, M.D., Dean.

UNIVERSITY OF ABERDEEN.

CROMBIE-ROSS LECTURESHIP IN PSYCHO-PATHOLOGY.

The University Court will shortly proceed to the appointment of the first CROMBIE-ROSS LECTURER IN PSYCHO-PATHOLOGY.

The appointment is a part-time one.

The salary proposed is £650.

Persons who desire to be considered for the office are requested to lodge their names with the Secretary to the University by September 15th, 1937.

The conditions of appointment may be obtained from the undersigned.

H. J. BUTCHART,

Secretary to the University of Aberdeen.

The University, Aberdeen.

ROYAL BERKSHIRE HOSPITAL.

The ROYAL BERKSHIRE HOSPITAL SCHOOL OF ORTHOPTICS is open to RECEIVE STUDENTS for TRAINING for the DIPLOMA in ORTHOPTICS.

Candidates must be of Matriculation or School-leaving Certificate Standard.

Course starts in September.

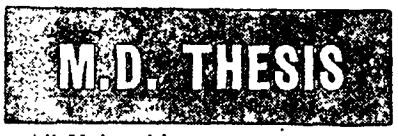
Applications to be sent to the undersigned.

H. E. RYAN,

Secretary and House Governor.

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Skilled coaching, guidance and advice, by specialist tutors.

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Special courses, postal, oral, and clinical, for all higher medical examinations, M.R.C.P. London, Edinburgh, F.R.F.P.S. Glasgow. Many successes.

Write for free booklet, "Guide to the M.D. London," to the Secretary, Medical Correspondence College, 19 Welbeck Street, London, W.1.

UNIVERSITY OF MELBOURNE.

Applications are invited by September 30th for the Chair of Anatomy. Salary £1,200 per annum. Duties commence March 7th, 1938. Further particulars from the Secretary, Universities Bureau of the British Empire, 88a, Gower Street, London, W.C.1.

CITY OF BIRMINGHAM.

DUDLEY ROAD HOSPITAL (926 Beds).

Applications are invited from fully qualified Medical Practitioners for whole-time appointment as JUNIOR MEDICAL OFFICER (male) at the Dudley Road Hospital, Birmingham. The appointment will be for a period of six months, but may be extended for a further period of not exceeding six months. Salary at the rate of £200 per annum and full residential emoluments. The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

Further particulars may be obtained from the Medical Superintendent at Dudley Road Hospital, to whom applications, stating age, experience and qualifications, with copies of recent testimonials, should be forwarded not later than Thursday, September 2nd, 1937.

THE WARWICKSHIRE AND COVENTRY JOINT COMMITTEE FOR TUBERCULOSIS.

KING EDWARD VII MEMORIAL SANATORIUM, Hertford Hill, near Warwick.

Applications are invited for the post of JUNIOR ASSISTANT MEDICAL OFFICER (man or woman) at the Memorial Sanatorium, near Warwick, of 225 beds.

The salary will be at the rate of £250 per annum, with board, lodging and laundry in addition, and the successful candidate will be appointed for six months.

There are three other Medical Officers at the Sanatorium.

Applications, with copies of testimonials, should be forwarded *direct to the Medical Superintendent at the Sanatorium* to reach him by not later than Wednesday, August 25th, 1937.

Shire Hall, Warwick. L. EDGAR STEPHENS, Clerk of the Joint Committee.

August 7th, 1937.

CITY OF LEEDS.

ASSISTANT MEDICAL OFFICER.

Applications are invited from qualified and registered Medical Practitioners for the post of Assistant Medical Officer for Maternity and Child Welfare. Applicants must have had not less than three years' post-graduate experience, including experience in General Medicine and Surgery, and special experience in Obstetrics and Ante-Natal work, and in the treatment of Children's Diseases and Diseases of Women. Preference will be given to candidates possessing the D.P.H.

The commencing salary for the post will be £500 per annum, and the present Grading Scheme of the Corporation provides for annual increments of £25, to a maximum of £700.

The person appointed will be required to pass a medical examination, and to contribute to the Superannuation Fund established under the Local Government and Other Officers' Superannuation Act, 1922. The appointment will be terminable by one month's notice on either side.

Form of application and particulars as to the duties of the appointment may be obtained from the undersigned.

Applications, endorsed "Maternity and Child Welfare Officer," together with copies of three recent testimonials, must be delivered at the Health Department, 12, Market Buildings, Vicar Lane, Leeds, 1, not later than 12 noon on Saturday, September 4th, 1937.

Canvassing in any form, either directly or indirectly, will be a disqualification.

J. JOHNSTONE JERVIS, Medical Officer of Health.

LANCASHIRE COUNTY COUNCIL.

Biddulph Grange Orthopaedic Hospital.

Applications are invited from duly qualified and registered Medical Practitioners (unmarried) for the post of JUNIOR HOUSE SURGEON at the above Hospital, which contains 88 beds.

Salary is at the rate of £200 per annum, together with board, residence and laundry.

Preference will be given to candidates who have held resident hospital appointments and who are competent anaesthetists. The appointment will be for a period of six months in the first instance, and for a further six months at the option of the Council, but will not be renewable after that time.

Applications, with copies of two recent testimonials, should be sent not later than September 4th, 1937, to Dr. F. HALL, School Medical and Child Welfare Department, County Offices, Preston.

Duties to commence October 1st, 1937.

County Offices, Preston. GEORGE ETHERTON, Clerk of the County Council.

August 16th, 1937.

BRITISH POSTGRADUATE MEDICAL SCHOOL.

Applications are invited for the post of RESIDENT ANAESTHETIST on the staff of the British Postgraduate Medical School at Hammersmith Hospital (L.C.C.), Ducane Road, W.12. The appointment will be for six months, to commence duty on October 1st, 1937.

Salary will be at the rate of £150 per annum, with board, lodging and laundry. Preference will be given to candidates who have held a similar appointment.

Further information can be obtained from the Dean, British Postgraduate Medical School, Ducane Road, W.12, to whom applications, accompanied by testimonials, should be sent, to arrive not later than first post on Monday, September 6th, 1937.

BRITISH POSTGRADUATE MEDICAL SCHOOL.

Applications are invited for the post of HOUSE SURGEON (Obstetrics) on the staff of the British Postgraduate Medical School at Hammersmith Hospital (L.C.C.), Ducane Road, W.12. The appointment will be for six months, to commence duty in September.

Salary will be at the rate of £105 per annum, with board, lodging and laundry.

Further information can be obtained from the Dean, British Postgraduate Medical School, Ducane Road, W.12, to whom application, accompanied by two testimonials, should be sent, to arrive not later than first post on August 26th, 1937.

BRITISH POSTGRADUATE MEDICAL SCHOOL.

Applications are invited from registered Medical Practitioners for the post of CASUALTY OFFICER, to commence duty on October 1st, 1937.

The appointment is for six months and non-resident. Salary is at the rate of £150 per annum and the post is specially suited to candidates studying for higher qualifications.

Applications, accompanied by two testimonials, should be addressed to the Dean, British Postgraduate Medical School, Ducane Road, W.12, to arrive not later than first post on Monday, September 6th.

AMENDED ADVERTISEMENT. SURREY COUNTY COUNCIL.

Surrey County Hospital, Wolverton Avenue, Kingston-upon-Thames. (550 Beds. Maternity Units 53 Beds.)

RESIDENT OBSTETRICIAN.

Applications are invited for the above whole-time appointment from registered medical practitioners who have had good experience in Obstetrics. Applicants must hold a higher qualification, e.g. F.R.C.S. or M.C.O.G.

The Hospital is approved by the Central Midwives' Board for the training of midwives and by the General Nursing Council as a full training school for general nursing.

The gross salary will be at the rate of £725 per annum, rising by £25 annually to £825, less a deduction of £125 per annum in respect of full residential emoluments.

Applications might be considered from married men prepared to provide their own accommodation in the immediate vicinity of the hospital; in the case of a non-resident appointment the deduction for emoluments would be correspondingly reduced.

The post is designated under the Local Government and Other Officers' Superannuation Act, 1922, and is subject to one month's notice on either side.

Further particulars of the appointment may be obtained on personal interview from the Secretary of the Hospital, to whom applications, stating age, experience and qualifications, with not more than three recent testimonials, should be sent not later than September 7th, 1937.

DUDLEY AUKLAND, Clerk of the Council.

DERBYSHIRE EDUCATION COMMITTEE.

ASSISTANT SCHOOL MEDICAL OFFICER (male).

The Derbyshire Education Committee require the services of an Assistant School Medical Officer—male—at a salary of £500, rising by annual increments of £25 to £700 per annum, together with a travelling allowance in accordance with the County scale.

Candidates must be registered Medical Practitioners of at least three years' standing. The duties will include work under the Maternity and Child Welfare Service. Experience in this work and in Mental Deficiency is desirable.

The appointment will be a designated post under the Local Government and Other Officers' Superannuation Act and the successful candidate will be required to pass a medical examination.

The Officer appointed will not be allowed to engage in private or consulting practice but will be required to devote his whole time to the duties of the office and will act under the direction of the School Medical Officer.

Forms of application may be obtained from the undersigned, to whom they should be returned completed, together with copies of not more than three recent testimonials, on or before Monday, September 6th, 1937, endorsed "Assistant School Medical Officer."

The appointment will be terminable by three months' notice on either side.

W. M. ASH, School Medical Officer.

New County Offices, St. Mary's Gate, Derby.

CAITHNESS COUNTY COUNCIL.

The County Council invite applications for the post of SURGICAL SPECIALIST for the COUNTY of CAITHNESS. Applicants must be of the status of Fellows of the Royal College of Surgeons. Salary £1,000 per annum, inclusive of travelling expenses, supplemented by fees from private surgical practice. The successful applicant will be expected to act as Consulting Surgeon to two Voluntary Hospitals by arrangement with the Managers.

The appointment will be subject to the approval of the Department of Health for Scotland in terms of a Scheme under the Highlands and Islands (Medical Service) Grant Act, 1913. Further particulars of the post may be obtained from the Subscriber, to whom applications, with six copies of testimonials, shoud be lodged by September 10th, 1937.

County Offices, Wick. JAMES ROBERTSON, County Clerk.

August 14th, 1937.

CITY OF BRADFORD.

MUNICIPAL GENERAL HOSPITAL, ST. LUKE'S.

HOUSE PHYSICIANS and HOUSE SURGEONS required.

Salary in each case £150 per annum, plus board and lodgings. These appointments are for six months, renewable for a further period of six months.

Application forms may be obtained from the Medical Officer of Health, Town Hall, Bradford, and should be returned to the undersigned not later than August 30th, 1937.

N. L. FLEMING, Town Clerk.

Town Hall, Bradford.

ROYAL NAVAL MEDICAL SERVICE.

Vacancies exist for Medical Officers in the Royal Navy, and applications are invited for entry in October, 1937.

Candidates below the age of 28 years are preferred, and they must be registered under the Medical Acts. No examination in professional subjects will be held, but candidates will be required to attend for interview by a Selection Board.

Selected candidates will be entered for Service for a period of three years in the first instance, which may be extended to five years at the discretion of the Admiralty.

At the end of three years' service officers may retire with a gratuity of £400, but those who serve for five years will receive £1,000.

At the end of five years' Short Service permanent commissions will be given to selected officers who wish to make the Naval Medical Service their permanent career. Officers transferred to the permanent list will receive a gratuity of £1,000 (less Income Tax).

Opportunities are available for officers on the permanent list to specialise, and ample provision is made for Post-Graduate study.

Copies of the regulations for entry and conditions of service, including rates of pay and allowances, may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1, and from the Deans of all Medical Schools.

Applications for entry from intending candidates must be received not later than August 31st, 1937.

ROYAL NAVAL DENTAL SERVICE.

The Establishment of DENTAL OFFICERS in the Royal Navy has been increased, and applications are invited for EIGHT APPOINTMENTS to be filled in October next. Further appointments will be offered later.

Candidates must be British subjects of pure European descent and sons of persons who are British subjects. They must be under the age of 28 years on the date of entry, possess the degree or diploma of a British University or College of Surgeons, registered under the Dentists' Act in force in the United Kingdom, and physically fit for service in any climate. Unmarried candidates will be preferred.

Approved candidates will be required to present themselves at the Admiralty for physical examination by a Board of Naval Medical Officers and interview by a Selection Committee, and if selected for appointment will be given a Short Service Commission for six years. At the end of this period they will retire with a gratuity of £1,000 unless during the fifth year of service they have applied for, and have been accepted for, transfer to a Permanent Commission.

Candidates who have, since qualifying, held full time appointments as House Surgeons at Dental Hospitals and Schools will be eligible for an antedate of seniority up to a maximum of six months.

Application forms and a pamphlet showing the regulations for entry and outlining the conditions of service, rates of pay and allowances, etc., may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1.

Applications for entry in October must reach the Admiralty not later than September 1st.

CORPORATION OF DUNDEE

PUBLIC HEALTH DEPARTMENT.

ORTHOPTIC TRAINER.

An Orthoptic Training Centre is about to be established in the Public Health Department, and the services of a fully-qualified Orthoptic Trainer are required.

Salary will be at the rate of £225 per annum, rising by annual increments of £10, to £275 per annum.

Further information may be obtained on application to the Medical Officer of Health, Central Public Health Office, 9, West Bell Street, Dundee.

Applications, with copies of three recent testimonials, must reach the undersigned on or before September 4th, 1937.

City Chambers, Dundee. DAVID LATTO.
August 14th, 1937. Town Clerk.

HOLLAND (LINCOLNSHIRE) COUNTY COUNCIL.

ASSISTANT MEDICAL OFFICER OF HEALTH (male or female)

Applications are invited from duly qualified and registered Medical Practitioners (under 40 years of age) for the above appointment.

The salary will be £600 per annum, rising by annual increments of £25 to £700 per annum.

The duties of the post include school medical inspections, the carrying out of work under the Maternity and Child Welfare and Tuberculosis Schemes, and such other duties as may be required by the Council.

The person appointed will devote the whole of his or her time to the duties of the office, act under the direction and supervision of the County Medical Officer, and reside in such part of the district as may be required.

Post-graduate experience in the diagnosis and treatment of tuberculosis and the possession of a Diploma in Public Health will be additional qualifications.

Applications on the prescribed form, obtainable from the undersigned, accompanied by copies of not more than three testimonials, must be addressed to the County Medical Officer of Health, County Hall, Boston, Lincs, and received by him not later than September 7th, 1937.

W. G. BOOTH,
County Medical Officer of Health.
County Hall, Boston.
August 7th, 1937

COUNTY BOROUGH OF EASTBOURNE.

ST MARY'S MUNICIPAL HOSPITAL.

RESIDENT HOUSE SURGEON.

Applications are invited from unmarried, registered Medical Practitioners for appointment as Resident House Surgeon at the above Hospital.

Salary £150 per annum, with board, residence, etc.

The appointment is for twelve months, determinable at any time by one month's notice.

Application forms, together with conditions of appointment and duties, can be obtained from the undersigned. The application form, when completed, should be returned to me not later than September 4th, 1937.

W. G. WILLOUGHBY,
Medical Officer of Health.
Avenue House, The Avenue,
Eastbourne.

CITY OF NOTTINGHAM. HEALTH DEPARTMENT.

ASSISTANT TUBERCULOSIS OFFICER.

Applications are invited for the appointment of Assistant Tuberculosis Officer (whole-time).

Applicants should be registered medical practitioners, preferably holding a Diploma in Public Health, and must have had special experience in the diagnosis and treatment of Pulmonary Tuberculosis, including the use of X-rays for diagnosis.

Applicants must be prepared to assist by lecturing and otherwise, in the development of an anti-tuberculosis campaign.

The salary will be on the scale of £500 per annum, rising by annual increments of £25 to £700, but in assessing the commencing salary, allowance will be made for previous service in an established position with another Local Authority.

The salary will be subject to deductions in accordance with the terms of the Local Government and Other Officers' Superannuation Act, 1922.

The successful applicant will be obliged to live within the boundaries of the City of Nottingham, and, to terminate the appointment, one month's notice from either side will be required.

Forms of application may be obtained from the undersigned, by whom applications must be received not later than September 6, 1937.

The Guildhall J. E. RICHARDS.
Nottingham Town Clerk.
August 14, 1937.

SALOP COUNTY COUNCIL.

MEDICAL INSPECTION OF SCHOOL CHILDREN AND MATERNITY AND CHILD WELFARE SCHEMES.

Applications are invited from registered Medical Practitioners for the post of ASSISTANT MEDICAL OFFICER to work under these Schemes. Salary £560 per annum, rising by annual increments of £25 to a maximum of £700, with travelling and out-of-pocke. expenses on a fixed scale. The salary will be subject to a deduction of 5 per cent. for superannuation under the Local Government and Other Officers' Superannuation Act, 1922, and the candidate selected will be required to pass a medical examination.

Preference will be given to candidates with a Public Health Qualification, and experience in Refraction work is desirable. Forms of application can be obtained from the County Medical Officer of Health, County Health Offices, Shrewsbury, to whom they should be returned not later than September 4th, 1937.

THE KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered medical practitioners for the following posts:—

(*a*) AREA ASSISTANT TUBERCULOSIS PHYSICIAN (male). Salary £500 per annum, rising by annual increments of £25 to £700 per annum, together with travelling and subsistence allowances when away from base.

Preferably candidates should have had at least six months' special training in tuberculosis, with eighteen months experience in general clinical work, of which six months should have been spent in a hospital not confined to the treatment of tuberculosis. Knowledge of Welsh desirable.

The person appointed will be required to pass a medical examination and to contribute 5 per cent of his salary to the Superannuation Fund of the Association. Applicants not already in the service of the Association must be under 45 years of age.

(*b*) RESIDENT MEDICAL OFFICER (male or female, single) at the Adelina Patti Hospital (126 beds for male and female pulmonary and children surgical cases), Craig-y-nos, Swansea Valley. The appointment is tenable for one year.

Salary £350 per annum plus maintenance.

Preference will be given to applicants who have held the post of House Physician or House Surgeon at a general hospital and have had institutional experience in the treatment of pulmonary tuberculosis.

(*c*) ASSISTANT RESIDENT MEDICAL OFFICER (male, single—one year appointment) at the following institutions:—

(*i*) North Wales Sanatorium (247 beds for female pulmonary and male, female and children non-pulmonary cases), Denbigh, North Wales.

(*ii*) Glan Ely Hospital (196 beds for pulmonary and surgical tuberculosis in men, women and children), Fairwater, near Cardiff.

Salary £200 per annum, plus maintenance.

(*d*) HALF-TIME ASSISTANT TUBERCULOSIS OFFICERS (three in number) to be attached to the Cardiff, Newport, and Pontypridd areas respectively, and commencing duty on October 1st, next. The appointments are limited to one year at a remuneration for the year of £250. During their tenure successful candidates will be expected to take during the other half of their time the Course for the Diploma in Tuberculosis Diseases (Wales) at the Tuberculosis Department, Welsh National School of Medicine, and afterwards sit the examination. Particulars as to fees for this course can be obtained from the Secretary, Welsh National School of Medicine, Cardiff.

Applicants must have held a house appointment in medicine or surgery for at least six months in a general hospital, and must also have held either a post as resident for a period of 12 months in an institution for the treatment of tuberculosis (medical or surgical) or a period of whole-time work accepted by the Senate as equivalent thereto.

Applications, stating age, qualifications, experience, etc., together with copies of three recent testimonials, should reach the undersigned not later than Wednesday, August 25th, 1937.

D. A. POWELL,
Principal Medical Officer

Memorial Offices, Westgate Street, Cardiff.
August 9th 1937

CITY OF SHEFFIELD.
NETHER EDGE HOSPITAL.

Applications are invited from duly qualified medical women for the appointment of RESIDENT ASSISTANT MEDICAL OFFICER, which is vacant on October 1st next at the above Hospital.

The Medical Officer appointed will be required to assist in the medical and maternity work of the Hospital, and to assist daily at the Maternity and Child Welfare Centre, where Ante-Natal, Post-Natal and Child Welfare Clinics are conducted.

Candidates should have previous hospital experience, and post-graduate experience in Midwifery and Ante-Natal work is essential.

The salary offered is £350 per annum, rising by £25 to £450, with the usual residential allowances.

The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and deductions will be made under this Act.

Applications, stating age, qualifications and experience, accompanied by three recent testimonials, should be sent to the Medical Superintendent, City General Hospital, Sheffield, 5, on or before August 23rd, 1937.

CITY OF SHEFFIELD.
KING EDWARD VII HOSPITAL. RIVELIN VALLEY ROAD.

RESIDENT ASSISTANT MEDICAL OFFICER (woman) required on October 1st for the above Hospital, which is for the treatment of Surgical Tuberculosis and other orthopaedic conditions (140 beds). The officer appointed will be required to attend the Out-Patient department for Surgical Tuberculosis and the Orthopaedic Clinic of the Maternity and Child Welfare Centre.

Salary at the rate of £200 per annum, with board and laundry.

Appointment for twelve months.

Applications, with testimonials, should be sent to the Medical Superintendent

LIVERPOOL COUNTY BOROUGH LOCAL EDUCATION AUTHORITY.
ASSISTANT SCHOOL MEDICAL OFFICERS.

Applications are invited for Two Assistant School Medical Officers in the Department of the Medical Officer to the Local Education Authority, at a salary in each case of £500 per annum, rising by annual increments of £25 to £700 per annum.

(Where a successful candidate holds a similar appointment under another Local Education Authority, and receives a salary in excess of the advertised minimum, a commencing salary of not less than the salary which the candidate is receiving, under his (or her) existing appointment (not exceeding the maximum under the Liverpool Scale) may be paid.)

Candidates must be registered medical practitioners, and must have had at least three years' experience. It is desirable that they should have had some special experience in school hygiene and in diseases of children.

The officers appointed will be required to reside within the City, and devote whole-time service to the Local Education Authority under the direction of the Medical Officer to the Local Education Authority, and will not be allowed to undertake any private practice.

The appointments will be subject to the Local Government and Other Officers' Superannuation Act, 1922, and the Standing Orders of the City Council.

Form of application, which may be obtained by forwarding a stamped addressed foolscap envelope, should be returned, together with copies of three recent testimonials, to the undersigned not later than August 28th, 1937, and endorsed "Assistant School Medical Officer."

The canvassing of members of the Education Committee or the City Council is strictly prohibited, and will be considered a disqualification.

Municipal Buildings, Liverpool, 2.
August 13th, 1937.

W. H. BAINES,
Town Clerk and Clerk to the Local Education Authority.

COUNTY BOROUGH OF GATESHEAD.
ASSISTANT MEDICAL OFFICER OF HEALTH —FEMALE

Applications are invited from duly qualified medical women in possession of the Diploma of Public Health or similar qualification for the post of Assistant Medical Officer of Health in the Public Health Department. The person appointed shall work under the general supervision and control of the Medical Officer of Health. The salary payable is at the rate of £500, rising to £700 by annual increments of £25, and the appointment is subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922. Applicants should have had special experience in practical midwifery and diseases of children. The appointment will be terminable by one month's notice from either side.

A list of the duties of the office may be obtained from the Medical Officer of Health, Greenesfield House, Mulgrave Terrace, Gateshead, to whom applications, stating age and experience and accompanied by not more than three recent testimonials, should be sent not later than August 30th, 1937, in envelopes endorsed "Assistant Medical Officer."

J. W. PORTER,
Town Clerk.

Town Hall, Gateshead, 8.

CITY OF WAKEFIELD.
APPOINTMENT OF JUNIOR ASSISTANT MEDICAL OFFICER (MALE).

Applications from registered Medical Practitioners are invited for the post of JUNIOR ASSISTANT MEDICAL OFFICER in the Public Health Department. Preference will be given to candidates possessing the Diploma in Public Health. Duties will be chiefly in connexion with the School Medical and Maternity and Child Welfare Services.

Salary commences at £500 per annum and rises by annual increments of £25 to a maximum of £700 per annum.

The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the passing of a medical examination.

Applications must be made on forms obtainable from the Medical Officer of Health, Town Hall Chambers, Wakefield, from whom further particulars may be had. Copies of three recent testimonials should be enclosed. Applications to be sent to me not later than September 4th, 1937

T. NICHOLAS GRIMSHAW,
Town Clerk.

Town Hall, Wakefield.
August 14th, 1937.

BOROUGH OF BARKING.
PUBLIC HEALTH DEPARTMENT.

Applications are invited from Registered Dental Surgeons for the designated appointment of ASSISTANT DENTAL SURGEON.

Salary scale: £450—£20—£550.

Particulars of duties and application form can be obtained from the undersigned, to whom such form must be returned not later than first post on Monday, September 6th, 1937.

S. A. JEWERS,
Town Clerk.

Town Hall, Barking.
August 10, 1937.

COUNTY BOROUGH OF DARLINGTON.
RESIDENT ASSISTANT MEDICAL OFFICER, MATERNITY HOSPITAL.

Applications are invited from qualified and registered Medical Practitioners (unmarried, female) for the post of Resident Assistant Medical Officer for Maternity and Child Welfare. Applicants must have had not less than three years post-graduate experience, including [illegible] and Surgery, and [illegible] Child Welfare Clinic [illegible]

Preference will be [illegible] the Diploma in Public Health.

The salary offered is £500 per annum, including emoluments valued at £150 in respect of board, residence and laundry, rising by annual increments of £25 to £700 per annum, and a car allowance.

The person appointed will be required to act under the direction of the Medical Officer of Health [illegible], to contribute to the [illegible] ied under the Local [illegible] Other Officers' Superannuation Act, 1922 and to retire on marriage. The appointment will be terminable by three months' no[illegible]

[illegible] be obtained from the M[illegible] Greenbank, Darlington, to [illegible] ...dorsed "Resident Assistant Medical Officer, Maternity Hospital," together with copies of three recent testimonials, must be delivered not later than Saturday, August 28th, 1937.

H. HOPKINS,
Town Clerk.

Darlington.
August 6th, 1937.

SURREY COUNTY COUNCIL.
WARREN ROAD HOSPITAL, GUILDFORD. (250 Beds.)

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from Registered Medical Practitioners for the appointment of Resident Assistant Medical Officer at the Warren Road Hospital, Guildford. The Hospital is administered by the Public Assistance Committee of the Council: it is a preliminary training school for nurses, and the work undertaken includes a considerable proportion of acute work.

Applicants should have had experience as a House Surgeon or Physician. The appointment is for a period of six months, renewable for a further period of six months, and the salary is at the rate of £375 per annum, less a deduction at the rate of £125 per annum in respect of board, lodging and laundry.

The successful applicant will be required to commence duty early in October, 1937.

Applications, stating age, qualifications and experience, and enclosing copies of not more than three recent testimonials, should be endorsed "Resident Assistant Medical Officer," and sent to the County Medical Officer, County Hall, Kingston-upon-Thames, so as to reach him not later than August 25th, 1937.

DUDLEY AUKLAND,
Clerk of the Council.

County Hall,
Kingston-upon-Thames.
August 5th, 1937.

CITY OF PERTH
MEDICAL OFFICER OF HEALTH.

Applications are invited for the appointment of Medical Officer of Health of the City of Perth. Candidates must possess the necessary Public Health qualifications. (D.P.H. or equivalent.)

The appointment will carry a salary at the rate of £800 per annum, rising to £850 in two years, and will be subject to the Perth Corporation Superannuation Scheme.

The successful applicant must devote his whole time to his duties, which will include the supervision of, and responsibility for, all medical services controlled by the Town Council.

Applications, stating age, qualifications and experience, together with copies of not more than three recent testimonials, to be lodged with the Subscriber not later than August 31st, 1937.

ROBT. ADAM,
Town Clerk.

City Chambers, Perth,
August 5th, 1937.

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE.
SCALEBOR PARK MENTAL HOSPITAL.

The Visiting Committee of the Scalebor Park Mental Hospital invite applications for the appointment of ASSISTANT MEDICAL OFFICER at the Scalebor Park Mental Hospital for private patients.

Salary £650 per annum, rising by annual increments of £25 to £750, with board and residence at the hospital.

Further particulars and form of application may be had from the undersigned, by whom all applications, together with copies of not more than three recent testimonials, must be received not later than August 28th, 1937.

J. CHARLES McGRATH,
Clerk to the Visiting Committee.

County Hall,
Wakefield.

COUNTY OF LONDON.

APPOINTMENT OF CORONER to fill vacancy caused by the death of Dr. Edwin Smith.

THE LONDON COUNTY COUNCIL invites applications, to be received not later than Friday, September 17th, 1937, for the appointment of a CORONER FOR THE COUNTY OF LONDON, who will probably be allocated to the western district of the County. This appointment is additional to that already advertised in relation to the eastern district, applications for which are due by August 31st, 1937.

The salary attached to the office is £1,700 a year, inclusive. The Coroner will be required to provide at his own expense any necessary office accommodation and clerical assistance and to defray all other expenses of the office (including the services of an approved deputy, and, if appointed, an assistant deputy), except actual disbursements under the approved schedule of fees, etc. Candidates, who must be not less than 35 or more than 50 years of age on August 31st, 1937, must be barristers or solicitors and possess one of the qualifications required by Section 1 of the Coroners (Amendment) Act, 1926. Due weight will be given to experience as deputy coroner and to the possession of a knowledge of forensic medicine. A pension is payable on retirement under an approved scale. The candidate appointed must give an undertaking to give his whole time to the duties of his office.

Application must be made on the official form, a copy of which, containing full particulars, may be obtained by sending a stamped addressed foolscap envelope to the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1. Canvassing disqualifies.

LONDON COUNTY COUNCIL.

Applications invited from Medical Practitioners of at least one year's standing to undermentioned positions. Experience in a Resident appointment in a General Hospital for at least six months desirable. Married quarters not available.

ASSISTANT MEDICAL OFFICERS (Grade I). —Salary £350—£25—£425, with board, lodging and washing.

(a) COLINDALE HOSPITAL, The Hyde, Hendon, N.W.9.—(Two positions.)

ASSISTANT MEDICAL OFFICERS (Grade II). —Salary £250 a year, together with board, lodging and washing. Appointment for one year only in first instance (renewable for a second year under certain conditions).

(b) COLINDALE HOSPITAL, The Hyde, Hendon, N.W.9.

(c) KING GEORGE V SANATORIUM, Godalming, Surrey.

Experience in the treatment of pulmonary tuberculosis essential for all the above positions.

There is no accommodation for women officers.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health, Staff Division, 2a, County Hall, S.E.1, returnable by August 30th.

Canvassing disqualifies.

THE ROYAL EASTERN COUNTIES INSTITUTION
for the Mentally Defective, Colchester.

ASSISTANT MEDICAL OFFICER (Male).

Applications are invited for the above post, from unmarried male Medical Practitioners not over 36 years of age. Total beds over 1,700.

The medical man appointed will be stationed at the new Extension, Turner Village, and will be required gradually to assume responsibility for administrative work connected with that extension, which has at present over 400 beds. For that reason the commencing salary has been fixed at £400 per annum, together with furnished apartments, board laundry, and attendance. No deductions. Previous specialisation in Mental Deficiency is not essential.

A Research Department, with a Medical Director and other Staff, working under the Medical Research Council and the Rockefeller Foundation, is attached to the Institution. New Laboratories costing nearly £5,000 will be ready for occupation in October and there is every facility for research work.

Apply before September 8th, giving age, nationality, full details of qualifications, and copies of testimonials, to the Medical Superintendent, Royal Institution, Colchester.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

Applications are invited for the post of HOUSE SURGEON, vacant on September 13th, 1937. The appointment will be for six months but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 per annum, with board, residence and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Wednesday, September 1st, 1937.

J. A. BEARDSALL,
Secretary-Superintendent.

BOROUGH OF CHELMSFORD.

MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

Applications are invited from duly qualified Medical Practitioners possessing the Diploma of Public Health for the appointment of Medical Officer of Health for the Borough, subject to the provisions of the Local Government Act, 1933, the Sanitary Officers (Outside London) Regulations, 1935, and the Local Government and Other Officers' Superannuation Act, 1922.

The officer appointed will be required to perform all the duties generally appertaining to the position of Medical Officer of Health, to act as School Medical Officer, to undertake work in connexion with Maternity and Child Welfare, and to carry out all such duties as the Council may from time to time direct. He will be required to reside in the Borough unless otherwise authorised by the Council and must devote his whole time to the duties of the office and must not engage in private practice.

He may, if appointed to that position, also be required as part of his duties to undertake the medical supervision of the Infectious Diseases Hospital, which is under the control of the Chelmsford Joint Hospital Board, in which event a proportion of his total salary will be paid by the Joint Hospital Board.

The salary offered to cover all the duties specified above (including the Infectious Diseases Hospital) will be £800 per annum.

Full particulars and terms of appointment may be obtained upon application to the undersigned, and applications, on the form provided, should reach me not later than Monday, September 6th, 1937.

Canvassing is forbidden.

Municipal Offices, Rainsford House, Chelmsford. August 18th, 1937.

C. E. BARFORD,
Town Clerk.

COUNTY BOROUGH OF WEST BROMWICH.
HALLAM HOSPITAL. (472 Beds.)

HOUSE PHYSICIAN AND HOUSE SURGEON.

Applications are invited from duly qualified male registered practitioners for the above-mentioned posts. The post of House Surgeon will also include duties in the Maternity Wards (30 beds).

The appointments are for six months, with eligibility for a further six months. Either party may give six weeks' notice terminating the appointment. There is a visiting staff of eight physicians and surgeons, one resident surgical officer and three resident medical officers.

Salary £200 per annum, and also board-residence. All fees received by the persons appointed will be payable into the funds of the Council.

Applications, stating age, experience and qualifications, together with copies of three recent testimonials, must be forwarded to the Medical Officer of Health, 2, Lodge Road, West Bromwich, so as to arrive not later than by first post on Saturday, September 4th, 1937.

Canvassing, either directly or indirectly, is strictly prohibited, and will be deemed a disqualification.

Town Hall, West Bromwich. August 20th, 1937.

ALFRED WICKHAM,
Town Clerk.

LANCASHIRE COUNTY COUNCIL

JUNIOR ASSISTANT MEDICAL OFFICER, WRIGHTINGTON HOSPITAL, APPLEY BRIDGE.

Applications are invited for the post of Junior Assistant Medical Officer (male, unmarried) for the Wrightington Hospital, which contains 206 beds for non-pulmonary tuberculosis (adults and children) and 20 beds for "combined" pulmonary and non-pulmonary cases. Salary £200 per annum, together with board, residence and laundry.

The appointment will commence on October 1st, or thereabouts, and will be for 12 months.

The medical staff consists of medical superintendent, two assistants, two consultant orthopaedic surgeons and other visiting surgeons. There are excellent facilities for reading for M.D.

Forms of application and conditions of appointment obtainable from Central Tuberculosis Officer, County Offices, Preston. Letters to be marked "Wrightington M.O."

Closing date September 3rd.

GEORGE ETHERTON,
Clerk of the County Council.

County Offices, Preston.

HARTLEPOOLS HOSPITAL, HARTLEPOOL.
(96 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male). Salary £175 p.a., with board, residence and laundry.

The appointment is for six months (subject to renewal). Duties to commence September 1st.

Applications, stating nationality, age, qualifications and experience, should be addressed to the undersigned.

NORMAN O. DEANS,
Secretary.

CARDIFF ROYAL INFIRMARY.
No. of available Beds, 490.

Applications are invited for the undermentioned posts:

Three HOUSE PHYSICIANS.
Four HOUSE SURGEONS.
Two HOUSE SURGEONS—Gynaecological.
One HOUSE SURGEON—Ophthalmic.
CASUALTY SURGICAL OFFICER.

All these appointments are at the rate of £50 per annum, with board and lodging, with the exception of Casualty Surgical Officer and Ophthalmic House Surgeon.

Casualty Surgical Officer is at the rate of £50 per annum for an applicant without experience, and £75 per annum with previous hospital experience.

The Ophthalmic House Surgeon is expected to have some knowledge of refractions and will be paid at the rate of £60 per annum (with board-residence) for the first six months, and if the appointment is renewed for a further six months at the rate of £120 per annum for the second period. This post is open to either sex.

The appointments will commence on September 25th.

Application forms can be obtained from the undersigned, and should be returned, with copies of three recent testimonials, not later than first post on September 6th.

R. ARMSTRONG,
August 17th, 1937. Medical Superintendent.

ROYAL BERKSHIRE HOSPITAL, READING.

The following Resident appointment will become vacant on October 1st, 1937:

RESIDENT MEDICAL OFFICER (male) at the Blagrave Branch Hospital and Assistant to Pathologist (combined appointment). To reside at and have charge of 64 beds at Branch Hospital and to work as Assistant in the Pathological Department of the main Hospital. (Previous experience in Pathology not essential.) The appointment is for six months, and candidates must be fully qualified and registered.

Remuneration at the rate of £150 per annum, with board, residence and laundry.

Applications, stating age and experience, with copies of testimonials, to be sent to the undersigned on or before Saturday, September 11th, 1937.

H. E. RYAN,
Secretary and House Governor.

THE BOLTON ROYAL INFIRMARY.
315 Beds, including two Auxiliary Hospitals.

Applications are invited from ladies for the post of HOUSE SURGEON. Duties to commence on October 1st, 1937, and include charge of Children's Wards, Ear, Nose and Throat and Gynaecology.

The appointment is for six months, and is renewable. Salary £150 per annum, with board, residence and attendance.

Applications for the post, stating age, nationality, and previous experience, together with copies of testimonials, should be forwarded to the undersigned not later than Tuesday, September 7th.

H. CORLESS,
Acting Secretary.

DREADNOUGHT HOSPITAL GREENWICH, S.E.10. (Seamen's Hospital Society.)

HOUSE SURGEON required for six months from October 1st. Salary £110 per annum and a proportion of fees, with board, residence and laundry. Candidates must be male and single. Duties include attendance once a week at V.D. Clinic and charge of V.D. beds, for which there is a special honorarium of £25.

Applications, with copies of three testimonials, to be sent in on or before September 7th to the undersigned.

F. A. LYON,
August 16th, 1937. Secretary.

DREADNOUGHT HOSPITAL, GREENWICH, S.E.10. (Seamen's Hospital Society)

HOUSE PHYSICIAN required for six months from October 1st. Salary £110 per annum and a proportion of fees, with board, residence and laundry. Candidates must be male and single. Applications, with copies of three testimonials to be sent in on or before September 7th to the undersigned.

F. A. LYON,
August 16th, 1937. Secretary

ALBERT DOCK HOSPITAL, CONNAUGHT ROAD, E.16.
(Seamen's Hospital Society.)

RESIDENT MEDICAL OFFICER required for six months from October 1st. Salary £110 per annum and a proportion of fees, with board, residence and laundry. Candidates must be male. Applications, with copies of three testimonials, to be sent in on or before September 7th to the undersigned.

F. A. LYON,
Secretary.
Seamen's Hospital Society, Greenwich, S.E.10.

ROYAL HALIFAX INFIRMARY.

Hospital recognised by the Royal College of Surgeons (England).

Wanted, a RESIDENT SURGICAL OFFICER (male, unmarried). Candidates must be duly qualified and registered. Preference will be given to candidates holding higher qualifications. The appointment will be from November 1st, 1937, for twelve months, ending October 31st, 1938. Salary, including all services required in connection with Paying Patients' Ward, £250 per annum, with residence, board and laundry. The Resident Staff consists of Resident Surgical Officer and three House Surgeons. The Hospital contains 250 beds, including Maternity Department and Paying Patients' Block. There is also a Pathological Laboratory and a large, Eye, Ear, Nose and Throat Department, Radiological Department, and Radium Clinic.

Particulars of the duties may be obtained from the undersigned, to whom applications, stating nationality, age, etc., together with testimonials, should be sent by August 31st, 1937.

A. MIDGLEY,
Secretary.

August 16th, 1937.

THE JESSOP HOSPITAL FOR WOMEN, SHEFFIELD. Firth Auxiliary, Norton.

Applications are invited for the post of RESIDENT MEDICAL OFFICER, *from registered* Medical Practitioners.

The appointment will be for six months, commencing immediately, subject to renewal for a further six months, with salary at the rate of £150 per annum, plus board, residence and laundry.

Previous Obstetrical experience is desirable.

The Firth Auxiliary Hospital contains 47 beds, of which 23 are set apart for the treatment of Puerperal Sepsis, the remainder being for Ante-Natal and Gynaecological cases.

Applications should be lodged with the undersigned, addressed to the Jessop Hospital for Women, Sheffield, immediately.

DAVID OSWALD,
Superintendent and Secretary.

KENT COUNTY OPHTHALMIC AND AURAL HOSPITAL, MAIDSTONE. (109 Beds.)

Applications are invited for the posts of Senior and Junior OPHTHALMIC HOUSE SURGEONS, which become vacant on October 1st next. Each appointment is for six months. Candidates must be duly qualified and registered medical practitioners, single, and of British birth and nationality, and should have experience of refractions. Salary at the rate of £250 and £200 per annum respectively, with board, residence, and laundry. The Hospital is recognised by the Examining Board for the D.O.M.S.

Applications, stating age and qualifications, together with copies of not more than three testimonials, should be sent to the undersigned.

JOHN W. STRICKLAND,
Secretary.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, WIGAN. (180 Beds.)

Wanted for twelve months, commencing October 1st, 1937, RESIDENT MEDICAL and SURGICAL OFFICER and REGISTRAR. Candidates must have held previous Resident appointments at a Hospital. Preference will be given to those possessing the F.R.C.S. or M.S. Degree. The salary is at the rate of £250 per annum, with board, residence and laundry. Applications, giving proof of registration and not more than three testimonials, to be sent to the undersigned as soon as possible.

A. STANLEY BRUNT,
General Superintendent and Secretary.

August 12th, 1937.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, WIGAN. (180 Beds.)

Recognised under F.R.C.S. Regulations.

TWO HOUSE SURGEONS (males) required October 1st, 1937, for a period of six months. Salary £150 per annum, with board, apartments and washing. Staff consists of R.S.O. and three House Surgeons. Applications, stating age and qualifications, with copies of three recent testimonials, should be addressed to the undersigned as soon as possible.

A. STANLEY BRUNT,
General Superintendent and Secretary.

August 12th, 1937.

EAST SURREY HOSPITAL, REDHILL, SURREY.

JUNIOR HOUSE SURGEON required on September 6th next. Salary at the rate of £100 per annum, with board-residence and laundry. Candidates must be fully qualified and registered. Appointment for six months and further six months as Senior at salary £150 per annum. Applications, stating full particulars, and copies of recent testimonials, to be sent to the Secretary.

BURY INFIRMARY (LANCS.). (127 Beds.)

APPOINTMENT OF HOUSE SURGEON.

A vacancy as above arises on the Resident Medical Staff and applications are invited for the post.

The Resident Staff consists of an R.S.O. and three other Resident Officers.

The appointment is for six months at a salary at the rate of £150 per annum, with board, residence and laundry, and the successful candidate will be expected to commence duties immediately.

Applications, stating age, qualifications and nationality, together with copies of three recent testimonials, are to be forwarded to the undersigned as soon as possible, endorsed "House Surgeon."

Full particulars of duties may be had on application.

H. WILKINSON,
Superintendent.

NORTH STAFFORDSHIRE ROYAL INFIRMARY, STOKE-ON-TRENT. (390 Beds.)

HOUSE PHYSICIAN (SECOND).

The Committee invite applications for the post of House Physician (second), who will have charge of the beds allocated to the Honorary Assistant *Physicians, and he will attend them in the Out-*patient Department, which is very extensive.

Salary at the rate of £150 per annum, with board, residence and laundry.

The appointment will be made for six months, renewable.

Applications, stating age and experience, with copies of two recent testimonials, to be sent to the undersigned immediately.

By Order,
W. STEVENSON,
Secretary and House Governor.

August 16th, 1937.

ROYAL SAMARITAN HOSPITAL FOR WOMEN, GLASGOW.

The Governors invite applications for a post as VISITING SURGEON in the Hospital which will become vacant on October 1st, 1937.

Particulars as to duties, etc., may be obtained from the undersigned, with whom Candidates are requested to lodge 25 copies of Application and 3 relative Testimonials with each not later than Monday, September 20, 1937.

Candidates are informed that canvassing is not allowed.

T. MASON MACQUAKER,
Secretary and Treasurer,
Glasgow, C.2.

191 West George Street, Glasgow, C.2.
August 12, 1937.

THE ROYAL HOSPITAL, WOLVERHAMPTON. (Incorporated under Charter.)

HOUSE PHYSICIAN required for mid-September. The Hospital contains 300 beds, the usual special departments and is recognised by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months, with a salary at the rate of £125 per annum, board, furnished rooms and laundry provided.

Applications, with copies of testimonials, to the undersigned.

Wolverhampton. W. H. HARPER,
August 16th, 1937. House Governor.

ROCHDALE INFIRMARY & DISPENSARY. (110 Beds.) (Three Residents.)

The Board of Management invite applications from gentlemen for the appointment of SECOND HOUSE SURGEON

The salary attached to the appointment is at the rate of £150 per annum, including board, residence and laundry.

Applications stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of the appointment may be had on application to the Secretary.

W. WYNNE.
Infirmary Office, Rochdale, Lancs. Secretary.

HOSPITAL FOR WOMEN AT LEEDS.

HONORARY ANAESTHETIST.

Applications are invited for the post of Honorary Anaesthetist to the above Hospital, for anaesthetic duty on Wednesday and Saturday mornings, at an Honorarium of £25 per annum, plus fees from the Private Ward Department. These should be sent, together with copies of three recent testimonials, to the undersigned not later than Saturday, August 28th.

D. W. CURRIE, ESQ., F.R.C.S.,
Secretary to the Faculty
Hospital for Women, Leeds, 2.

ROYAL MANCHESTER CHILDREN'S HOSPITAL, PENDLEBURY.

Applications are invited for the post of non-resident ASSISTANT MEDICAL OFFICER at the Out-patients' Department, Gartside Street, Manchester. Salary at the rate of £150 per annum, and the appointment is for a period of six months as from October 1st, 1937. Candidates must be on the Medical Register.

Particulars of duties can be obtained from the Secretary. The hours of duty are from 9 a.m. till 1 p.m. or until the work of the Dispensary is finished Patients' attendances number about 100,000 per annum.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Thursday, September 2nd, 1937.

Canvassing, directly or indirectly, may disqualify.

By Order,
H. HEARDMAN,
Secretary.

MANCHESTER ROYAL INFIRMARY.

ASSISTANT MEDICAL OFFICER.

MASSAGE AND ELECTRICAL DEPARTMENT.

The Board of Management invite applications *from registered Medical Practitioners* (men and women) for the above appointment. Previous experience in the work is not essential.

The duties are to attend daily and to assist the Medical Officer in charge of the Department. The appointment is part time (non-resident) for one year. Salary £100 per annum.

Candidates must state age and send fifteen copies of their application and testimonials to the undersigned on or before Thursday, August 26th, 1937.

By Order,
W. R. TINDALE,
General Superintendent and Secretary.

August 13th, 1937.

ROYAL ISLE OF WIGHT COUNTY HOSPITAL, RYDE.

A vacancy having occurred in the office of HONORARY SURGEON to the EAR, NOSE AND THROAT DEPARTMENT the Election Committee of the Governors will proceed to fill the appointment. Candidates must not be engaged in General Practice.

Further details may be obtained from the *Secretary, to whom applications must be addressed,* and should be received not later than August 28th, 1937.

Canvassing members of the Election Committee will be a disqualification.

A. S. GORDON,
Secretary.

THE STAFFORDSHIRE GENERAL INFIRMARY, STAFFORD. (100 Beds.)

HOUSE PHYSICIAN AND CASUALTY OFFICER required on September 1st, also HOUSE SURGEON on September 21st. Salary £150 and £200 per annum respectively. Previous experience is desirable. There are two Resident Medical Officers and a well-equipped Clinical Laboratory.

Applications, stating age, with particulars of experience, and accompanied by copies of three recent testimonials, should be sent to me forthwith.

Stafford. A. E. COLLINS,
July 30th, 1937. Secretary.

THE STOCKPORT INFIRMARY. (140 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN.

Applicants must be male and unmarried. Salary £150 per annum, with board-residence and laundry.

The Resident Staff consists of a Resident Surgical Officer, two House Surgeons and a House Physician.

Application, with copies of three recent testimonials, stating age, nationality and qualifications, to be sent to the undersigned not later than August 24th.

Duties to commence as from September 10th.

H. G. PRICE,
Secretary-Superintendent.

NEW SUSSEX HOSPITAL FOR WOMEN, WINDLESHAM ROAD, BRIGHTON. (60 Beds.)

Applications are invited from medical women for the post of HONORARY SURGEON to the New Sussex Hospital. The Senior Assistant Surgeon is an applicant for the post, and in the event of her election an Assistant Surgeon will be required. Candidates should possess the F.R.C.S. or equivalent qualification.

Copies of three recent testimonials to be sent to the Secretary on or before September 18th.

Board Room, P. F. SPOONER,
Windlesham Road, Brighton. Secretary.

THE LIVERPOOL SANATORIUM.
Delamere Forest, Frodsham, via Warrington.

175 Beds for the treatment of patients suffering from pulmonary tuberculosis.)

JUNIOR ASSISTANT to the Medical Superintendent.

Applications are invited from male Medical Practitioners with suitable qualifications for the above named appointment. Candidates must be unmarried and preference will be given to applicants who have held resident medical appointments since qualification and have had practical institutional experience in the treatment of pulmonary tuberculosis.

Salary will be at the rate of £225 per annum, with board, quarters and laundry.

The appointment is normally tenable for 12 months, but may be extended.

Particulars of duties and full information, together with forms of application, can be obtained from the Medical Superintendent.

Forms completed, with copies of three recent testimonials, should be returned as early as possible to the Medical Superintendent, the Liverpool Sanatorium, Delamere Forest, Frodsham, via Warrington.

THE LIVERPOOL SANATORIUM.
Delamere Forest, Frodsham, via Warrington.

175 Beds for the Treatment of Patients Suffering from Pulmonary Tuberculosis.)

SENIOR ASSISTANT to the Medical Superintendent. Applications are invited from male Medical Practitioners with suitable qualifications for the above-named appointment.

Candidates must be unmarried and preference will be given to applicants who have held resident medical appointments since qualification, and have had practical institutional experience in the treatment of pulmonary tuberculosis.

Salary will be at the rate of £350 per annum, with board, quarters and laundry.

The appointment is normally tenable for twelve months, but may be extended.

Particulars of duties and full information, together with forms of application, can be obtained from the Medical Superintendent.

Forms completed, with copies of three recent testimonials, should be returned as early as possible to the MEDICAL SUPERINTENDENT, the Liverpool Sanatorium, Delamere Forest, Frodsham, via Warrington.

PRESTON AND COUNTY OF LANCASTER ROYAL INFIRMARY.

HOUSE SURGEON, EYE, EAR, NOSE AND THROAT DEPARTMENT.

Applications are invited for the above position. Hospital Resident Staff—seven. (Male or female.)

Six months' appointment. Salary £150, with board, residence and washing.

Applications, stating age, qualifications and experience, together with copies of testimonials, to be forwarded as soon as possible to Mr. John Gibson, Superintendent and Secretary, Royal Infirmary, Preston.

THE LADY CHICHESTER HOSPITAL, HOVE, FOR FUNCTIONAL NERVOUS DISEASES.
(60 Beds.)

SENIOR HOUSE PHYSICIAN required. Six months' appointment at £100 per annum, all found. Also JUNIOR, at £50 per annum. Valuable experience for Diploma in Psychological Medicine.

Duties to commence immediately.

Applications, with testimonials, to be sent to the Secretary, Mr. P. F. SPOONER, 33, West Street, Brighton.

August 3rd, 1937.

WARNEFORD GENERAL HOSPITAL, LEAMINGTON SPA.
(164 Beds.)

RESIDENT JUNIOR HOUSE SURGEON and CASUALTY OFFICER (combined post). Six months' appointment. Salary £150 p.a., with board and laundry.

Applications, from qualified registered Medical Practitioners, should be sent, together with three recent testimonials, to the undersigned as soon as possible.

EDWARD L. WIRGMAN,
House Governor and Secretary.

THE WOMEN'S HOSPITAL, CATHERINE STREET, LIVERPOOL.
(Gynæcological Hospital. 120 Beds.)

HOUSE SURGEON required for six months, commencing October 1st. Salary £160 per annum. Applications, with copies of three testimonials, to be sent to the Hon. Secretary of the Medical Board.

THE CHILDREN'S HOSPITAL (KING EDWARD VII MEMORIAL), BIRMINGHAM, 16.

RESIDENT SURGICAL OFFICER.

Applications are invited for the above post. Candidates must be qualified and registered and have held a responsible Resident appointment at a teaching hospital. The salary attaching to the post is at the rate of £175 per annum, with board, residence and laundry. The appointment is tenable for one year as from October 1st, 1937.

Candidates should forward their applications, with proof of registration and any credentials which they may desire to offer, to the undersigned on or before September 4th, 1937.

HAROLD F. SHRIMPTON,
July 29th, 1937. House Governor.

HUDDERSFIELD ROYAL INFIRMARY.
(321 Beds.)

MALE CASUALTY OFFICER required to commence duty on September 5th, 1937.

Salary £200 per annum, with board, residence and laundry. Appointment for six months. Prospects according to qualifications, experience and satisfactory service.

The Hospital is officially recognised for the surgical practice required of non-members before admission to the Final Fellowship Examination of the Royal College of Surgeons of England.

The post of Casualty Officer is next in seniority to that of Resident Surgical Officer.

Applications, with copies of three recent testimonials, to be addressed to the undersigned immediately.

H. J. JOHNSON,
General Superintendent and Secretary.

WESTON-S-MARE GENERAL HOSPITAL.
(60 Beds.)

HOUSE PHYSICIAN.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN at this Hospital. Salary at the rate of £150 per annum, with board, rooms and laundry. Duties to commence immediately. Applications, stating age, qualifications, and enclosing copies of testimonials, should be addressed to the undersigned.

LESLIE J. FURSLAND,
The General Hospital, Secretary.
Boulevard,
Weston-super-Mare.

BRISTOL EYE HOSPITAL.

1936—82 Beds (12 Private Patients), 946 In-patients, 16,561 Out-patients.

Applications are invited for the post of JUNIOR HOUSE SURGEON. Salary £100 per annum. Senior post available after six months. Vacant September 27th, 1937.

Suitable experience for D.O.M.S.

Applications, stating age and qualifications, etc., with three recent testimonials, to reach the undersigned by August 26th.

D. M. BABER,
Secretary and House Governor.

KING EDWARD VII HOSPITAL, WINDSOR.
(200 Beds.)

RESIDENT MEDICAL OFFICER required (Senior of five Residents). Applicants must be fully qualified and registered and have held a Resident appointment.

Salary at the rate of £200 per annum, together with board, residence and laundry allowance.

Applications, with copies of recent testimonials, should be sent to the undersigned not later than August 21st.

ARTHUR E. CHURCHER,
Secretary.

WEST HERTS HOSPITAL, HEMEL HEMPSTEAD.
(114 Beds. 24 miles from Euston.)

SENIOR RESIDENT MEDICAL OFFICER required, to commence duties about August 1st. Male unmarried preferred. Salary £150, with rooms, board and laundry.

Applications, stating essential particulars and enclosing copies of three recent testimonials, to be sent at once to:

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

LONGTON HOSPITAL, STOKE-ON-TRENT.
(50 Beds.)

HOUSE SURGEON (male) required. Salary £150, rising to £200 after six months, with board, residence and laundry, plus certain fees. Applications, with copies of recent testimonials, and stating nationality, to be sent immediately to the Chairman of Directors, Longton Hospital, Stoke-on-Trent.

LEICESTER ROYAL INFIRMARY.
(500 Beds.)

Vacancies for October 1st, 1937.

HOUSE SURGEONCIES (1).

Salary £125 per annum. Applicants must have held a Resident Hospital post or had similar experience of Hospital work. Unsuccessful candidates will be considered for Senior Casualty Officer if they so intimate.

CASUALTY OFFICERS.

Senior Casualty Officer, Fellowship Standard. Salary £125 per annum. Junior Casualty Officer, Salary £100 per annum.

HOUSE PHYSICIANCIES (2).

Salary £125 per annum. Applicants must have held a Resident Hospital post or had similar experience of Hospital work.

RESIDENT ANAESTHETIST.

Salary at the rate of £150 per annum for first six months, £200 per annum for second six months, £225 for third six months, £250 for fourth six months.

Applications, with copies of three recent testimonials, to be forwarded to the undersigned not later than August 31st.

GEO. W. COOLING,
House Governor.

Appointments for six months will be made on September 8th.

August 4th, 1937.

ARGYLL AND BUTE DISTRICT MENTAL HOSPITAL, LOCHGILPHEAD.

Applications are invited for the post of RESIDENT ASSISTANT MEDICAL OFFICER (male). Commencing salary £300 to £350 per annum, according to previous experience and special qualifications. An additional £50 per annum will be paid if in possession of the D.P.M. Furnished apartments will be provided, with board and laundry.

The appointment will be subject to the provisions of the Asylum Officers' Superannuation Act, 1909.

Applications, stating age and experience, accompanied by seven copies of testimonials, to be addressed to the Clerk of the Joint Board of Management, County Offices, Lochgilphead, not later than August 25th, 1937.

DERBYSHIRE ROYAL INFIRMARY, DERBY.
(General Hospital, 362 Beds.)
Recognised under F.R.C.S. Regulations.

Applications are invited for the post of:
GYNÆCOLOGICAL HOUSE SURGEON AND EMERGENCY ANÆSTHETIST.

Candidates must be qualified and registered under the Medical Acts.

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned.

ARTHUR TAYLOR,
Superintendent and Secretary.

August 7th, 1937.

DERBYSHIRE ROYAL INFIRMARY, DERBY.
(General Hospital, 362 Beds.)
Recognised under F.R.C.S Regulations

Applications are invited for the post of:
HOUSE SURGEON (General Surgery and Ear, Throat and Nose).

Candidates must be qualified and registered under the Medical Acts.

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned.

ARTHUR TAYLOR,
Superintendent and Secretary.

August 7th, 1937.

HOUNSLOW HOSPITAL, STAINES ROAD, HOUNSLOW, MIDDLESEX.

APPOINTMENT OF RESIDENT PHYSICIAN AND CASUALTY OFFICER.

Applications are invited from registered medical practitioners (male) for:

Junior House Physician and Casualty Officer, salary £100 per annum, with full board, etc., and extras

Applications, stating age, nationality, qualifications and previous experience, together with copies of three recent testimonials, should be forwarded to the Secretary, endorsed "Appointment."

COSSHAM MEMORIAL HOSPITAL, Kingswood, Bristol.

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER. Salary £100 per annum, with board and laundry—to remain for six months in the first instance. Applicants (male) should be of British nationality, fully qualified, and registered.

Applications, with copies of recent testimonials, to be sent to the Secretary.

RUNWELL HOSPITAL FOR NERVOUS AND MENTAL DISORDERS.
Near Wickford, Essex.
(East Ham and Southend-on-Sea Joint Mental Hospital.)

HOUSE PHYSICIAN required for the above Hospital (1,032 beds). Salary £150 per annum, with apartments, board, attendance and laundry. Six-monthly appointment, renewable for a further six months. Excellent opportunities for post-graduate work. The Hospital provides facilities for treatment in all its aspects and is equipped with up-to-date laboratories.

Applications, together with copies of recent testimonials (not more than three), to be forwarded to the Physician Superintendent, Runwell Hospital, near Wickford, Essex, as soon as possible.

Envelopes to be marked "House Physician" in top left-hand corner.

H. J. WORWOOD,
Clerk to the Visiting Committee.

HARROGATE AND DISTRICT GENERAL HOSPITAL. (132 Beds.)

Applications are invited for the post of CASUALTY OFFICER AND HOUSE SURGEON TO THE EAR, NOSE, THROAT AND MATERNITY DEPARTMENTS, to take up duties immediately for the period ending March 31st, 1938.

Salary to be at the rate of £150 per annum. Candidates (male) must be of British nationality, unmarried and possess registered qualifications

Applications should be made as soon as possible on forms obtainable from the undersigned.

FRANK A. THROWER,
Secretary.

NORTH DEVON INFIRMARY, BARNSTAPLE.

Voluntary Hospital, 70 beds, including Maternity Ward.

Wanted, September 28th, duly qualified SOLE RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, apartments and laundry. Appointment to be for not less than six months. British nationality.

Applications, stating age, qualifications, with copies of testimonials, to be sent to the Secretary.

SHEFFIELD RADIUM CENTRE.

Wanted immediately, a MEDICAL OFFICER to act as LOCUM TENENS for a period of two months, experience in Radium Therapy preferred but not essential. Salary £7 7s. to £9 9s p.w., according to experience. The appointment may become permanent.

Applications, stating age, qualifications, previous experience, etc., to be sent to the undersigned immediately.

Sheffield Radium Centre, A. Y. GREEN,
At the Royal Infirmary, Secretary,
Sheffield.

BATH AND WESSEX CHILDREN'S ORTHOPAEDIC HOSPITAL,
Combe Park, Bath.

HOUSE SURGEON (male or female) required October 1st, 1937.

The appointment will be for six months, with salary at the rate of £120 per annum, together with quarters, board and laundry.

Orthopaedic experience an advantage, together with experience in administering anaesthetics.

Applications, with copies of three recent testimonials, should reach the undersigned not later than first post on September 7th.

HAROLD J. FRICKER,
August 12th, 1937. Secretary.

SWANSEA GENERAL AND EYE HOSPITAL.
(336 Beds.)

HOUSE PHYSICIAN wanted, gentleman, single Salary £150 per annum, with board, residence and laundry. Appointment for six months. Duties to commence September 20th.

Applications, stating age, nationality, qualifications and experience, together with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS,
Secretary-Superintendent.

ROYAL SUSSEX COUNTY HOSPITAL,
Brighton.

HOUSE SURGEON (Male) required October 1st, 1937. Charge of beds. Salary £150 per annum, with board, residence and laundry.

Candidates must hold medical and surgical qualifications of the British Empire, and be duly registered under the Medical Acts.

They must be unmarried, and, when elected, under thirty years of age.

Applications, with copies of recent testimonials, should be sent to the undersigned.

L. L. W. LANCASTER-GAYE,
Secretary-Superintendent.

WORCESTERSHIRE MENTAL HOSPITAL, BARNSLEY HALL, BROMSGROVE.

SECOND ASSISTANT MEDICAL OFFICER (male, single).

Applications for this post are invited from duly qualified registered Medical Practitioners, preferably with previous Mental Hospital experience.

Salary £350 per annum, rising by annual increments of £25 to £450, with board, apartments, laundry and attendance, valued for superannuation purposes at £90 per annum. An additional £50 will be paid to the successful candidate if holding the Diploma in Psychological Medicine.

Appointment subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

Forms of application may be obtained from the Medical Superintendent and must be returned to him (together with copies of three recent testimonials) by Thursday, September 2nd, 1937, in order that they may be considered and a short list made so that the candidates may appear before the Visiting Committee in the afternoon of Monday, September 6th, 1937.

KENT AND SUSSEX HOSPITAL.
TUNBRIDGE WELLS. (210 Beds.)
EAR, NOSE AND THROAT DEPARTMENT.

Applications are invited for the appointment of HOUSE SURGEON (male) to the above Department; duties to commence September 6th. Previous experience desirable, but not essential. Duties to include those of Resident Anaesthetist. Salary £150 per annum, board, residence and laundry in the hospital.

Applications, stating qualifications, together with certificate of registration and copies of not more than three recent testimonials, should be sent to the undersigned as soon as possible.

TOM B. HARRISON,
Superintendent-Secretary.

MANSFIELD AND DISTRICT GENERAL HOSPITAL. (140 Beds.)

HOUSE SURGEON (Male) required. Duties to commence as soon as possible. Salary at the rate of £150 p.a., with residence, board and laundry. The appointment is for six months and is renewable. The staff consists of a Resident Surgical Officer and two House Surgeons. Applications, stating age, qualifications and nationality, accompanied by not more than three recent testimonials, to be sent to the undersigned as soon as possible.

C. J. ADAMS,
Secretary.

ANCOATS HOSPITAL, MANCHESTER.

ASSISTANT PATHOLOGIST, lady or gentleman, whole-time appointment—no private work allowed. Salary £300 to £350 per annum, according to experience—live out. Luncheon and tea provided.

Applications, stating age, experience and full particulars, together with three recent testimonials, to be forwarded to the undersigned not later than August 28th.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Superintendent and Secretary.

HOUNSLOW HOSPITAL, HOUNSLOW, MIDDLESEX.

Applications are invited for the following posts:
1. HONORARY ASSISTANT PHYSICIAN to the above Hospital.
2. HONORARY ASSISTANT SURGEON to the EAR, NOSE AND THROAT Department.

Each candidate in his application should submit a statement of qualifications and experience, together with three recent testimonials, which should reach the Secretary, Hounslow Hospital, Hounslow, Middlesex, not later than September 4th, 1937.

CLAYTON HOSPITAL, WAKEFIELD.

There are vacancies for two HOUSE SURGEONS. The appointments are for six months (renewable); salary £200 per annum, plus board and laundry.

One vacancy is from September 1st and the other from September 22nd, 1937.

Applications, accompanied by copies of two testimonials, should be sent immediately to:

T. F. W. MACKEOWN, M.A., A.C.A.,
Secretary Superintendent.

HEREFORDSHIRE GENERAL HOSPITAL, HEREFORD. (150 Beds.)

Immediate applications are invited for the post of HOUSE SURGEON and CASUALTY OFFICER (male). Salary at the rate of £100 per annum, with board, residence and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned.

T. W. UPTON,
Secretary.

THE PRINCE OF WALES'S HOSPITAL, DEVONPORT, PLYMOUTH.
(Formerly Royal Albert Hospital, Devonport.)
(64 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON. Salary £130 per annum, with board, residence and laundry.

Duties to commence September 1st. Appointment is tenable for six months and is subject to renewal. Applicants must be registered under the Medical Acts.

The Hospital is officially recognised for the surgical practice required before admission to the Final Fellowship Examination of the Royal College of Surgeons of England.

Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned forthwith.

FRANK ROWE,
August 16th, 1937. Secretary.

THE DUCHESS OF YORK HOSPITAL FOR BABIES, MANCHESTER. (80 Beds.)

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER. Appointment is for six months from October 1st, 1937. Salary £125 per annum, with board, residence and laundry. Previous experience essential; also JUNIOR RESIDENT MEDICAL OFFICER for six months from October 1st, 1937. Salary £75 per annum, with board, residence and laundry.

Applications, with copies of testimonials, to be sent to the Secretary by September 1st, 1937.

LOUISE BAILEY,
Secretary.

DERBYSHIRE HOSPITAL FOR WOMEN,
Friar Gate, Derby. (58 Beds.)

Applications are invited for the post of RESIDENT HOUSE SURGEON. Salary £150 per annum, with apartments, board, etc. The appointment is tenable for six months with a possibility of extension for a further period of six months.

Applications, with copies of not more than three testimonials, to be sent to the undersigned not later than August 27th, 1937.

Duties to commence September 1st, 1937.

W. T. COCKER,
Secretary.

AMENDED ADVERTISEMENT.
GRANTHAM HOSPITAL (100 Beds).

Applications are invited from fully qualified medical practitioners (either sex) for the post of RESIDENT MEDICAL OFFICER. The appointment is for six months (renewable), and will become available on September 11th, 1937. Salary £250 per annum, with board, residence, and laundry. Applications stating age, nationality, qualifications, and experience, with copies of three recent testimonials, should be sent to the undersigned.

JOHN E. RAY,
Secretary-Superintendent.

PRINCESS ALICE MEMORIAL HOSPITAL, EASTBOURNE.

Appointment of THIRD HONORARY ANAESTHETIST.

Applications are invited for the above new appointment. Full particulars may be obtained from the undersigned.

Applications, accompanied by copies of three testimonials, should be delivered to the undersigned by first post on Friday, September 3rd, 1937.

W. RUSSELL RUDALL,
August 16th, 1937. Secretary.

THE ROYAL INFIRMARY, SHEFFIELD.
(500 Beds.)

The Board of Management invite applications for the post of CASUALTY OFFICER.

The salary attached to the post is £150 per annum, with board and residence. The appointment will be tenable for the residue of the period of six months from July 1st, 1937.

Applications, with copies of testimonials, to be sent to the General Superintendent and Secretary.

August 7th, 1937.

ROTHERHAM HOSPITAL.

HOUSE SURGEON required for Ophthalmic and Ear, Nose and Throat Departments. Previous experience not essential. Salary £150 per annum, with board and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. Roberts, 8, Moorgate Street, Rotherham.

ROTHERHAM HOSPITAL.

WANTED:—SENIOR HOUSE SURGEON (Male), Qualified. Salary £200 with board, residence and laundry. 130 beds. Excellent experience to be gained.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. Roberts, 8, Moorgate Street, Rotherham.

APPOINTMENTS—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C. 1 (in the case of Scottish appointments, with the Scottish Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE	CONTRACT PRACTICE—*(contd.)*	CONTRACT PRACTICE—*(contd.)*
ABERTYSSWG MEDICAL AID SOCIETY. *(Medical Officer.)*	LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL. *(Medical Officer.)*	MID-RHONDDA MEDICAL AID SOCIETY. *(Assistant Medical Officer.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C. 1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES *(All Friendly Society Appointments.)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney, N.S.W.	**VICTORIA** *(All Institute or Medical Dispensaries.)*	The Honorary Secretary, Victorian Branch, British Medical Association, Medical Society Hall, Albert St., East Melbourne, Victoria.	**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association "Shell House," 205, St. George's Terrace, Perth, Western Australia.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec. Queensland Branch, British Medical Association, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17.				

August 18, 1937 By Order of the Council. G. C. ANDERSON, *Secretary.*

CITY MENTAL HOSPITAL, HUMBERSTONE, LEICESTER.

DEPUTY MEDICAL SUPERINTENDENT (MALE), under thirty-five.

Applications for the above post are invited. Salary £800 per annum, rising by £25 per annum to £850, together with an unfurnished house, valued for superannuation purposes at £50 per annum.

Candidates must have held resident house appointment in a teaching hospital for at least six months, and be in possession of a Diploma in Psychological Medicine.

The officer appointed will be required to assist at the Out-patient Clinics and to be responsible for the Pathological work.

The appointment is subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

Applications, marked "D.M.S.," with full particulars of Professional career, together with three references, one of which should be non-professional, to be sent to the Medical Superintendent.

NORFOLK AND NORWICH HOSPITAL, NORWICH. (417 Beds.)

Applications are invited for the post of RESIDENT SURGICAL OFFICER. Salary £250 per annum, with board, residence and laundry. Preference will be given to candidates holding the F.R.C.S. qualification.

Applications, stating age, qualifications, and experience, accompanied by copies of recent testimonials, should reach the undersigned not later than first post on Tuesday, August 31st.

FRANK INCH,
House Governor and Secretary.

August 13th, 1937.

CITY MENTAL HOSPITAL, HUMBERSTONE, LEICESTER.

THIRD ASSISTANT RESIDENT MEDICAL OFFICER (male, single) under 30. Candidates must have had residential General Hospital experience. Salary £350, rising by £50 per annum to £450 per annum, together with board, lodging, washing and attendance, valued for purposes of superannuation at £150 per annum. An additional £50 per annum will be paid for possession of a D.P.M.

The appointment is subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

There is a good laboratory and two active Psychiatric Clinics, one attached to the Leicester Royal Infirmary.

Application giving particulars of experience, etc., together with names of three references—one of which should be non-professional, and marked "A.M.O." to be sent to the Medical Superintendent.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL (280 Beds).

Applications are invited for the following appointments:

ONE CASUALTY OFFICER.

ONE RESIDENT ANAESTHETIST AND HOUSE SURGEON TO THE EAR, NOSE AND THROAT DEPARTMENT:

commencing immediately until December 31st, 1937, at a salary of £150 per annum, with board, lodging and laundry. Candidates must be male and unmarried.

Applications, accompanied by not more than three recent testimonials should be sent to the undersigned at once.

HY. TRUSSON,
House Governor and Secretary.

ROYAL SALOP INFIRMARY, SHREWSBURY. (150 Beds.)

APPOINTMENT OF RESIDENT SURGICAL OFFICER.

Applications are invited from fully-qualified unmarried gentlemen for the appointment of Resident Surgical Officer, vacant September 15th next.

The appointment is for a period of twelve months at a salary of £250 per annum, with board, residence, etc. The Resident Surgical Officer is senior Resident Officer of the Hospital.

House Staff comprises Resident House Physician and two Resident House Surgeons.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three recent testimonials, to be sent to the undersigned not later than August 28th.

Board Room. J. W. NOBLE,
August 10th, 1937. Secretary-Superintendent.

ROYAL SALOP INFIRMARY, SHREWSBURY. (150 Beds.)

Applications are invited from fully-qualified unmarried gentlemen for the appointment of RESIDENT HOUSE SURGEON, vacant immediately.

The appointment is for six months in the first instance, subject to reappointment for a further period of six months if desired.

Salary at the rate of £160 per annum, with board, residence, etc.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, to be sent to the undersigned immediately.

Board Room. J. W. NOBLE,
August 6th, 1937. Secretary-Superintendent.

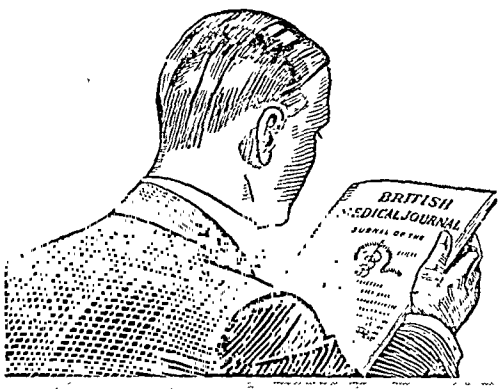
(Advertisements Continued on p. 47)

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B.M.J. advertising facilities

British Medical Journal. B.M.A. House, Tavistock Sq., London. W.C.1

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CIGARS. (ENDCUT) ALL HAVANA TOBACCO GOOD SMOKES at a low price: quality guaranteed. Box of 50 for 25/-, post free.—Sole Manufacturers: J. J. FREEMAN & Co., LTD., 90, Piccadilly, London, W.1. (GRO.: 1529.)

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"SOLACE CIRCLES" TOBACCO THE finest combination ever discovered of Choice Natural Tobaccos. Every pipeful an indescribable pleasure. 12/6 per ½ lb. tin, post free. Sole Manufacturers: J. J. FREEMAN & Co., LTD., 90, Piccadilly London, W.1. (GRO.: 1529.)

PRIVATE NURSING HOME IN FIRST-CLASS residential district in Surrey for disposal. Established 3 years. Gross receipts average £1,800 p.a. Fees from 4½-10 guineas. Registered for 10 patients; capable of more. Exceptional house and attractive garden at rental, £200-250 according to type of lease, or would sell freehold. Price for furniture and premium, £1,500.—Address, No 6133, B.M.A. House, Tavistock Square, W.C 1.

QUALIFIED, EXPERIENCED MASSEUSE would like to hear of RESIDENTIAL DISTRICT where doctors would be glad to have massage and electrical treatments available. Home Counties preferred.—Address, No. 6026 B.M.A. House, Tavistock Square, W C.1.

TYPEWRITING.—SPECIALISTS IN TYPING medical and scientific papers, lectures, theses, and books. Shorthand-typists always available. Proof-reading, indexing. — MARGARET WATSON, LTD., 16, Palace Chambers, Bridge Street, S.W.1. WHItehall 3838.

ASSISTANCIES

WANTED.—ASSISTANT, EYE, EAR, NOSE, Throat practice in S. Africa. Commencing salary £720. Must have D.O.M.S. and D.L.O. or F.R C.S. Good appearance, temperate, experienced View later partnership. Address with photo. references. No. 3589, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OCT. 1st, KEEN, YOUNG, "G.P.-minded" ASSISTANT. Better-class mixed suburban Practice. Live at branch surgery. Previous experience essential. Salary £350-£400.—Address, No. 5917, B.M.A House, Tavistock Square, W.C.1.

WANTED, MALE ASSISTANT, UNmarried, for panel Practice now, London, S.E. £300 a year and all found; work very light —Address, No 5913. B.M.A. House, Tavistock Square. W.C.1.

WANTED, ABOUT THE END OF SEPTEMBER, indoor ASSISTANT for industrial and country Practice (mixed) in South Wales. Good salary offered to suitable applicant. Own car or car provided. Salary £300 and all found.—Address, No. 6036, B.M.A. House, Tavistock Square, W.C.1.

WANTED, ASSISTANT, MALE, SINGLE. British with view. £375 p.a. Furnished room and attendance provided at branch surgery in pleasant district near Midland city.—Address, No. 6027, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—ASSISTANT, SINGLE, SCOTCH, outskirts of Manchester. Salary £300, all found. Car allowance £50. State full particulars. —Address, No. 5910, B.M.A. House, Tavistock Square, W.C.1.

WANTED AT ONCE, OUTDOOR ASSISTANT. Large mixed Practice small industrial town near Nottingham. Possibility partnership later. Keen recently qualified man suitable. Salary £400. —Address, No. 6015, B.M A. House, Tavistock Square, W.C.1.

WANTED BEGINNING SEPTEMBER, MALE INDOOR ASSISTANT (British) for Practice near Manchester, Cheshire side. £300 per annum, plus £50 car allowance. Good prospects. Work not heavy.—Address, No. 5907, B.M.A. House, Tavistock Square, W.C.1.

WANTED, EARLY OCTOBER, OUTDOOR male ASSISTANT in good mixed Practice in East Lancashire. Some experience desirable. Commencing salary £400 (four hundred pounds) per annum, plus £50 (fifty pounds) car expenses. Only Scotsman or Englishman of Protestant faith need apply.—Address, No. 5915, B.M.A. House, Tavistock Square, W.C.1.

WANTED FOR ABOUT OCT. 1st, ASSISTANT for large and very mixed Practice in S. Yorks. town. Gentleman, English or Scottish, indoor, £300-£350 p.a., hospital, dispenser, car. Opportunity for gaining excellent experience.—Address, No 5905, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY.—INDOOR AND outdoor ASSISTANTS for town and country Practices, with and without view to Partnership. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2.

WANTED IMMEDIATELY, OUTDOOR ASSISTANT for busy Practice N.E. England. Salary £400-£425, with furnished rooms, board, coal, light and attendance. Early prospects for keen, capable assistant.—Address, No. 6016, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY, YOUNG, INdoor, male ASSISTANT, single. For six months. Suit recently qualified. South Wales town. Salary £300 p.a., car provided. Dispenser kept.—Address, No. 6030 B.M.A House Tavistock Square W.C.1.

WANTED, INDOOR ASSISTANT, SEPT 1st, £300. Industrial Practice near Strand. Suit recently qualified.—Address, No. 5731, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT FOR quiet country Practice North Yorkshire; work very easy: car provided.—Address, No. 6021, B.M.A. House, Tavistock Square, W.C.1.

WANTED IN OCTOBER, ASSISTANT (British) for branch surgery, seaside town and rural Practice, West Wales. Able to drive car.—Address, No. 6004, B.M.A. House, Tavistock Square, W.C.1

WANTED, ASSISTANTSHIP WITH VIEW to PARTNERSHIP. Country or suburban district preferred. Ex. H.P 1½ yrs. G.P. Some capital.—Address, No. 6003, B.M.A. House, Tavistock Square, W.C.1.

WANTED, MARRIED ASSISTANT, END of September, for S. Wales Colliery Practice. Salary £450 p.a., with free house and £50 car expenses. Must be keen, energetic and reliable.—Address No. 5903, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT, PLEASANT country Practice in Shropshire. Salary £400-£450, according to experience, plus £50 car allowance, as must own car. Photo, refs.—Address, No. 6031, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — SINGLE, MALE, ASSISTANT for Glamorgan Colliery Practice. Outdoor. Cottage Hospital with scope for surgery. Salary £400 p.a., with rooms and attendance.—Address, No. 6009, B.M.A. House, Tavistock Square, W C.1.

ASSISTANT REQUIRED, MIDLAND TOWN, commencing salary £450 and small house. Opportunity for sport or D.P.H. State age, nationality, etc.—Address, No. 6028, B.M.A. House, Tavistock Square, W C.1.

ASSISTANTSHIP WITH VIEW TO PARTNERSHIP vacant in Siam. Salary £70 per month. Two years' agreement. First-class return passage. Tropical experience an advantage.—Address, No. 6039, B.M.A. House, Tavistock Square, W.C.1.

OUTDOOR ASSISTANT, SMALL COUNTRY town North of England. Salary £400 plus allowance. Own car.—Address, No. 5609, B.M.A House, Tavistock Square, W.C.1.

YOUNG DOCTOR (GENTLEWOMAN), EXperienced and trustworthy, wants ASSISTANTSHIP in high-class Practice. London or Home Counties or South.—BM/BCGX, W.C.1.

MEDICAL POSTS, DISPENSERS

A LADY DISPENSER BOOKKEEPER supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Bayswater 0969). Secretary, 7, Westbourne Park Road, W.2.

WANTED, RESIDENT ASSISTANT MEDICAL OFFICER for PRIVATE MENTAL HOME near London. Previous mental experience not essential. Applicants must be single. Excellent prospects.—Address, No. 5712, B.M.A. House, Tavistock Square, W.C.1.

A Course of Training in Dispensing and Pharmacy is given at GORDON HALL SCHOOL OF PHARMACY and Secretary-Dispensers can be supplied to Doctors. Sessions: January, April, and September.—Apply, Principals, School of Pharmacy, Drayton House, Gordon Street, W.C.1. 'Phone: Euston 3930.

CHARTERED ACCOUNTANT, AET. 130, seeks post as SECRETARY and ACCOUNTANT of Hospital or Nursing Home. Extensive experience in modern costing methods and office organisation.—Address, No. 6006, B.M.A. House, Tavistock Square, W.C.1.

DOCTORS REQUIRING QUALIFIED Dispensers, Nurse-Dispensers, Secretary-Dispensers or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSER'S BUREAU, 3, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

EDUCATED YOUNG MAN, 28, WELL mannered, smart appearance, capable of receiving and interviewing clients, seeks post as SECRETARY-RECEPTIONIST or similar to Doctor, Dentist, etc. London only. Moderate salary.—Box A.R. 510, 55, Bryanston Street, London, W.1.

EXPERIENCED DISPENSER - SECRETARY seeks post; good knowledge shorthand, typewriting, bookkeeping and accounts.—Address, No. 6007, B.M.A. House, Tavistock Square, W.C.1.

LADY DISPENSER (HALL) DESIRES POST with Doctor, experienced bookkeeper, highly recommended.—Address, No. 6022, B.M.A. House, Tavistock Square, W.C.1.

LADY DISPENSER-SECRETARY SEEKS POST. Good knowledge shorthand, typewriting, bookkeeping and accounts.—Address, No. 6019, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL.—POST DESIRED AS SECRETARY-RECEPTIONIST to London Doctor. Ten years' business experience. Typing, bookkeeping. One year's training in Nursing.—Address, No. 6023, B.M.A. House, Tavistock Square, W.C.1.

ST. BARTHOLOMEW'S HOSPITAL TRAINED NURSE with 6 years' SECRETARIAL EXPERIENCE disengaged. Shorthand-typist, bookkeeping, filing, telephone, etc.; act. 34.—Address, No. 6020, B.M.A. House, Tavistock Square, W.C.1.

THE BRITISH RED CROSS SOCIETY desires the SERVICES of a qualified MEDICAL WOMAN for their HOP-PICKING CAMP at Tudeley Hale, near Tonbridge, from September 1st, for about three weeks. Board, lodging, laundry, camp life, and an honorarium are offered in exchange for very light services.

Appy, British Red Cross Society, 9, Chesham Street, S.W.1.

THE LONDON AND PROVINCIAL MEDICAL STAFF BUREAU (Licensed annually by the L.C.C.), 24b, Hereford Road, W.2, will supply qualified Dispensers, Secretaries, Receptionists, etc., without fee to Medical Practitioners. 'Phone: Bayswater 0323.

THE ROYAL ARMY MEDICAL CORPS ASSOCIATION, 85, Eccleston Square, S.W.1 (Telephone: Victoria 2722), supplies qualified Dispensers, Book-keepers, Laboratory Assistants, Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk Orderlies, Porters, Caretakers, etc., without charge to prospective employers.

PARTNERSHIPS

AN OLD-ESTABLISHED PARTNERSHIP IN A pleasant market town, 60 miles from London and with a cottage hospital, requires in a few months' time a well-qualified man with a good personality, prepared to do the routine work of general practice and able to undertake the major portion of the surgical work of a large partnership. An initial share worth approx. £1,300 gross per annum will be offered at 2 years' purchase to a suitable man after a preliminary assistantship.—Address, No. 5701, B.M.A. House, Tavistock Square, W.C.1.

M.B., B.CHIR. (CAMBRIDGE), AET. 26 years, with H.P. and G.P. experience, desires PARTNERSHIP in country Practice in South of England.—Address, No. 5414, B.M.A. House, Tavistock Square, W.C.1.

PARTNER REQUIRED IN MIDLAND TOWN. £450 net and small house. No capital required; opportunity for increase. Please state age, nationality, etc.—Address, No. 6029, B.M.A. House, Tavistock Square, W.C.1.

LONDON, N.W. WHOLE, HALF OR THIRD SHARE of PRACTICE with excellent scope, £3,200 p.a. Panel 3250, increasing 600 p.a. Good appt. House at mod. rental.—The Western Medical Agency, 25, South Molton Street, London, W.1 (Mayfair 6941), and 22, Clare Street, Bristol, 1 (Bristol 22689).

PARTNERSHIP. INDUSTRIAL PRACTICE, W.R., Yorks. Average receipts £4,200. Increasing. Panel 3,300. Appointments £400. One-third share at two years' purchase. Convenient house £900 freehold.—Address, No. 5931, B.M.A. House, Tavistock Square, W.C.1.

REQUIRED, PARTNERSHIP IN COUNTRY district. Midlands, North, or Border Country preferred. Income £1,000 upwards. Capital available. Married, experienced, University Graduate.—Address, No. 5938, B.M.A House, Tavistock Square, W.C.1.

SURREY.—¼ SHARE IN PRACTICE WITH ample scope (£600 p.a. guaranteed). Suit bachelor. Premium, 2 years' purchase.—Address, No. 6017, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS

WANTED, N LONDON, PART-TIME LOCUM (lady), two weeks from September 1st, hours roughly 10-12 a.m. and 6.30-8.30 p.m. Free Sat. noon till Mon. 10 a.m. To live out £3 3s per week.—Address, No. 6132, B.M.A. House, Tavistock Square, W.C.1.

WANTED, AFTER AUGUST 30th, POST as LOCUM-TENENS, or ASSISTANT, by woman doctor experienced hospital and general practice. Excellent references. Drives car.—Address, No. 6018, B.M.A. House, Tavistock Square, W.C.1.

HOSPITALITY LOCUM OFFERED AT ONCE medium Practice night work negligible, pleasant garden and country Herts. Car or expenses.—Address, No. 6131, B.M.A. House, Tavistock Square, W.C.1.

M.D. LOND. EXPERIENCED, DESIRES HOSPITALITY LOCUM self and wife and £3 3s weekly, preferably Home County Aug. 25th to Sept. 25th. Cycle and drive.—Address, No. 6130, B.M.A. House, Tavistock Square, W.C.1.

RETIRED, ELDERLY, EXPERIENCED LOCUM, disengaged after September 30th. Highest references. Part or whole time.—Address, No 6005, B.M.A House, Tavistock Square, W.C.1.

RELIABLE LOCUMS WANTED IMMEDIATELY. Send full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2.

PRACTICES

WANTED BY EXPERIENCED BELFAST honours graduate, age 35, mixed country town PRACTICE or 50-50 SHARE of £1,500 to £2,000. Good house and garden, rent or purchase; schools available; scope for refractions. Ample capital.—Address, No. 6032, B.M.A. House, Tavistock Square, W.C.1.

WANTED, COUNTRY PRACTICE (ABOUT £1,400 per annum) by experienced Scots graduate. Ample capital.—Address, No. 6024, B.M.A. House, Tavistock Square, W.C.1.

WANTED, GOOD-CLASS PRACTICE, WITH some panel, in good residential area; South of England, preferably fairly large town, e.g., Brighton or Margate, or good residential London suburb. Capital available.—Address, No. 6010, B.M.A. House, Tavistock Square, W.C.1.

WANTED, IN SOUTH OR MID-SCOTLAND, PRACTICE doing about £1,300.—Address, No. 6025, B.M.A. House, Tavistock Square, W.C.1.

WANTED TO PURCHASE, GOOD, SOUND mixed general PRACTICE, with or without panel. Income £1,500 to £2,000 p.a. or more. Good, non-basement house essential. South England or coast town preferred. Capital available.—Address, No. 6033, B.M.A. House, Tavistock Square, W.C.1.

BRISTOL. MIXED AND INCREASING PRACTICE. £1,360 p.a. Good scope. Good panel. Price £2,700. House rent. Might consider Partnership.—The Western Medical Agency, 22, Clare Street, Bristol, 1 (Bristol 22689), and 25, South Molton Street, W.1 (Mayfair 6941).

ADVERT. 5911.—IN VIEW OF THE MANY enquiries this sale has been placed in the hands of the BRITISH MEDICAL BUREAU.

CORNWALL.—FOR SALE, OLD-ESTABLISHED country PRACTICE, increasing. Last year's income over £1,200; no resident opposition. Delightful part. Excellent house, freehold, standing in own grounds 1 acre, 5 bedrooms, separate professional rooms; all main services.—Address, No. 6134, B.M.A. House, Tavistock Square, W.C.1.

FOR SALE TO MAN OR WOMAN, GROWING Medical PRACTICE in country town within twenty miles London; established ten years; receipts over £1,500; panel 350; other appointments.—Address, No. 6033, B.M.A. House, Tavistock Square, W.C.1.

FASHIONABLE SOUTH COAST RESORT; middle-class PRACTICE, small panel, branch surgery, 3 or 4 mids; average-visit 5s. £600 p.a. net, 2 years' purchase. Family house, 7 beds, garden, garage, best part of town. £2,200 freehold. Growing neighbourhood and great scope.—Address, No. 6001, B.M.A. House, Tavistock Square, W.C.1.

FOR IMMEDIATE DISPOSAL ON ACCOUNT of complete breakdown in health, small, easily-worked PRACTICE with great possibilities of expansion, in prosperous industrial district near London. Panel 800, and corresponding good private connection. Freehold residence with surgery and pleasant garden. Available for £2,000 or near offer, including house.—Address, No. 6011, B.M.A. House, Tavistock Square, W.C.1.

FOR SALE, OLD-ESTABLISHED PRACTICE in semi-industrial district within 20 miles of Manchester. Panel 1,640. Added cash receipts £1,360. Premium 1½ years' purchase. Appointments (not included in above figure of cash receipts) £300 half of which might be obtained by purchaser. House with good living, professional and garage accommodation. Price £1,500.—Address, No. 6014, B.M.A. House, Tavistock Square, W.C.1.

FOR SALE, RAPIDLY GROWING PRACTICE in busy suburb, 3 miles from Piccadilly, producing at present £650 per year. Panel 560, rapidly increasing. Excellent scope, building going on. Corner house on lease. Premium £1,250, to include drugs etc., book debts, and furnishings. Large part may be deferred.—Apply W. J. FRASER AND SONS, Solicitors, 78 Dean Street, W.1.

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H. A. MADGE,
Secretary.

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CHARLES H. BESSELL,
August 1st, 1937. Secretary.

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J. C. BURDETT,
Director and House Governor.
August 5th 1937.

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CHARLES H. BESSELL,
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HERTS. — PROMISING NUCLEUS, about £400 p.a. Panel 525. Premium £500 Good house, garden and garage. Freehold £1,500.—20.

EAST YORKS.—CLEAN TOWN.—SHARE worth about £1,200 after preliminary Assistancy. Middle and working-class and panel of 2,600. Premium 2 years' purchase. Choice of houses.—21.

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(The Scholastic, Clerical and Medical Association Ltd.)

(*FOUNDED* 1880)

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Full particulars free on request.

Practices and Partnerships wanted. Large list of bona-fide purchasers with ample capital available. Enquiries invited from prospective vendors. All information treated in strict confidence.

LANCS. TOWN.—PARTNERSHIP is sound practically unopposed mixed Panel and Private Practice near large town. Cash receipts last year £2,756. Panel 3,550. Good house, 2 reception, 3 bedrooms, garage. Price £800. Premium—one-half-share—best offer—No. 995.

MANCHESTER.—TWO PARTNERS required in sound old-established mixed Panel and Private Practice. Average Cash Receipts £5,500 p.a. Panel over 4,500 and appointments £760 p.a. Good houses available to rent. Premium —3/9ths or 2/9ths.—2 years' purchase (to include share of book debts, drugs, etc.).—No. 1,001.

NORTH-WEST COAST.—Well-established PRACTICE in Seaside town. Cash receipts £500-£550 p.a. Panel 450. Modern flat to rent at £30 p.a. inclusive of rates. Premium—1½ years' purchase.—No. 1,005.

SUFFOLK.—Old-established Country PRACTICE, practically unopposed. Cash receipts last year £1,081. Panel 835 (yields £582 p.a.). Scope. Good house, 2 reception, 3 bedrooms, garage and nice garden. Rent £40 p.a. Premium—best offer.—No. 993.

YORKSHIRE (W.R.).—PARTNERSHIP in old-established mixed-class Practice in important city. Average cash receipts £5,429 p.a. Panel 3,200. Scope. Convenient house available for incoming partner. Rent £50 p.a. Premium—1/4th or 1/5th share—2 years' purchase.—No. 997.

NEAR MANCHESTER.—Very old-established mixed-class PRACTICE capable of much increase owing to building developments. Cash receipts last year £1,006. Panel 470. Nice detached house, 2 reception, 5 bedrooms, garage and large garden. Separate entrance to surgery. Price £650. Premium—Practice—1 year's purchase. Vendor retiring.—No. 875.

NORTH WALES. — PARTNERSHIP (after short Assistantship) in old-established middle-class Practice in pleasant Coast town. Knowledge of Welsh desirable. Cash receipts last year £6,717. Panel 2,600. Well-equipped Hospital. Incoming partner would be required to live in flat. Premium—1/5th share—1½ years' purchase. —No. 988.

— WANTED —

LOCUMS AND ASSISTANTS

For Immediate Engagements

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DEATH VACANCY. — SHEFFIELD. — Very old-established mixed-class PRACTICE in late incumbent's hands 20 years. Cash receipts last year £1,664. Panel 1,200. Scope. Good house, 2 reception, 6 bedrooms, 3 Professional rooms, garage. To rent. Premium—best offer.—No. 999.

CHESHIRE/DERBYSHIRE BORDER.—Old-established PRACTICE in Country district. Cash receipts last year £700 (increasing). Panel 862. Great scope. Excellent house, 2 reception, 4 bedrooms, 3 Professional rooms (separate entrance), garage and good garden. Premium—£1,000.—No. 989.

NEAR NEWCASTLE-ON-TYNE.—Colliery PRACTICE. Cash receipts last year £952. Panel 800. Scope. Good house to rent. Premium—1½ years' purchase.—No. 978.

LANCS TOWN. — Old-established mixed-class PRACTICE in large town about 6 miles from Manchester. Cash receipts £1,800 p.a. Panel 1,500. Scope. Good house, 3 reception, 6 bedrooms, 3 Professional rooms, garage. Rent £72 p.a. Premium—1½ years' purchase.—No. 996.

DERBYSHIRE.—Old-established PRACTICE in pleasant district near large town, offering great scope for increase owing to build ng developments. Suitable for two men in partnership. Cash receipts last year £3,436. Panel 3,394. Two good houses, with ample accommodation and modern conveniences, each with garage, garden and tennis court. Premium—2 years' purchase.—No. 955.

LANCS TOWN.—Very old-established mixed Panel and Private PRACTICE; in present hands 35 years. Cash receipts last year £916. Panel 1,223. Scope. Excellent detached house, 2 reception, 5 bedrooms, garage and small garden. For sale, or would rent on lease. Premium—1½ years' purchase. Vendor retiring.—No. 1,004.

CUMBERLAND.—Old-established and practically unopposed Seaside and Country PRACTICE in delightful district. Cash receipts last year £868. Panel 225 and transferable appointments £225 p.a. Excellent house, 3 reception, 8 bedrooms, electric light and gas, garage and garden. For sale, freehold. Premium—Practice—1½ years' purchase.—No. 998.

MANCHESTER.—Very-old-established mixed Panel and Private PRACTICE. Cash receipts last year £2,100. Panel 2,800. Scope. Good house, 2 reception. 4 bedrooms, 3 Professional rooms, garage. Rent £75 p.a. Premium —2 years' purchase, or near offer.—No. 990.

YORKSHIRE (W.R.).—PARTNERSHIP SHARE worth £1,700 p.a. with Panel of 1,169 and appointments £50 p.a. in practically unopposed Country PRACTICE. Nice detached house, 2 reception, 4 bedrooms, garage, ¾-acre garden and tennis lawn. Electricity, etc. Premium—2 years' purchase. Reason for sale—ill-health of Vendor.—No. 985.

MIDLANDS.—Old-established mixed Panel and Private (non-dispensing) PRACTICE in large town. Cash receipts approximately £1,900 p.a. Panel 1,950. Good ten-roomed house, nice garden with tennis court and garage. For sale, or may be rented on lease. Premium—2 years' purchase.—No. 983.

NORTH WALES.—Old-established PRACTICE near Sea and Country, capable of great increase. Cash receipts last year, £1,026. Panel 800. Nice surgery premises. Premium, best offer.—No. 905.

MONMOUTHSHIRE.—Old-established Panel Contract and Private PRACTICE in prosperous district. Cash receipts last year £1,400. Panel 1,200, plus Contract work, yields £1,230 p.a. Good house, 2 reception, 5 bedrooms. Professional rooms (separate entrance) and garage.—Rent £40 p.a. Expenses low.—Premium—£2,000.—No. 970.

DERBYSHIRE. — Old-established mixed-class PRACTICE, near beautiful country and within easy reach of large town. Average cash receipts £1,100 p.a. Panel 970 and transferable appointments £200 p.a. Scope. Nice detached house, 2 reception, 6 7 bedrooms, garage and large garden. Freehold. Premium—1½ years' purchase.—No. 991.

NEAR MANCHESTER.—Sound middle and working-class PRACTICE. Average cash receipts £2,692 p.a. Panel over 2,500. Scope. Detached corner house, 2 reception, 4 bedrooms, 3 Professional rooms, garage and garden. Premium—1½ years' purchase.—No. 952.

LANCS TOWN.—Mixed panel and private PRACTICE, in present hands 30 years. Cash receipts approximately £1,500 p.a. Panel 1,500. Great scope. Good house, 2 reception, 4 bedrooms, garage and small garden. Rent £50 p.a. Premium, best offer.—No. 945.

SHEFFIELD.—Established PRACTICE. Cash receipts £1,112. Panel 600. House to rent at £52 p.a. Premium—1½ years' purchase.—No. 940.

MANCHESTER.—PRACTICE in Industrial district. Cash receipts £880. Panel 904. House to rent. Premium—any reasonable offer.—No. 855.

SOUTH AFRICA.—Established PRACTICE in Transvaal. Cash receipts last year £746. Premium—£650.—No. 986.

LANCS TOWN.—Old-established Panel and Private PRACTICE in large town. Average cash receipts £1,360 p.a. Panel 900. Scope, Good house, 2 reception, 4 bedrooms, garage. Rent £60 p.a. Expenses low. Premium —1½ years' purchase.—No. 957.

NORTH WALES COAST.—Middle-class PRACTICE. Receipts £1,417 p.a. Panel 415. Excellent house with ample accommodation, garage and garden. Premium—£2,100.—No. 929.

LANCS TOWN. — Mixed-class PRACTICE. Cash receipts £1,034. Panel 1,050. Good house. Premium—1½ years' purchase.—No. 951.

YORKS (N.R.). — Old-established unopposed Country PRACTICE in beautiful district near to large town. Cash receipts approximately £1,200 p.a. (including £455 p.a. from Panel). Good house, 2 reception, 5 bedrooms, large garden, garage, water, gas and electricity. Rent £70 p.a., on lease. Premium—2 years' purchase or near offer, to include drugs and fittings. —No. 973.

WIRRAL.—PRACTICE in new rapidly growing area. Receipts over £700. Panel 320. Scope for great increase. New modern house, 4 bedrooms, garage and garden. Rent £87 10s. p.a. Premium—best offer.—No. 1,003.

ASSISTANTS WANTED.—OUTDOOR—MIDLANDS, LANCS AND YORKS TOWNS.—£400 500 p.a., with House and Car allowance. INDOOR. —LANCS, YORKS, MIDLANDS AND N.E. COAST.—£300,350 p.a., all found. Many vacancies. Details on request.

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(FOUNDED 1880.)

TAVISTOCK HOUSE SOUTH
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The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful agency for the transaction of every description of Medical, Scholastic, and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult The Manager in all transactions requiring the services of a Medical Agent.
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FULL TERMS ON APPLICATION

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1 LONDON, W.1.—DEATH VACANCY.—SPECIAL PRACTICE in SKIN DISEASES. Cash receipts year ended 31st March, 1937, *£1,815*. Consultations two and three guineas. Accommodation for professional and residential purposes, if required, to rent.

2 LONDON, N.22.—DEATH VACANCY.—Old-established PRACTICE averaging about £1,100 p.a. Appointment worth £30 and a panel of 514. Corner house in good position containing 8 bedrooms, etc., for sale or rent.

3 HOME COUNTY.—PARTNERSHIP *in practice* averaging over £2,350 p.a. in attractive country district near the coast. Panel 1,400. Good house (5 bedrooms, etc., etc.) in excellent state of repair, with garage and large garden, to rent at £85 p.a. Premium one-half share £2,500.

4 S.W. OF ENGLAND.—PARTNERSHIP in practice averaging over £2,050 p.a. in beautiful country district. Panel 920. Charming old two-storied house (7 bedrooms) with garage and good garden, in all about two acres, to rent at £52 p.a. Premium one-half share two and a-quarter years' purchase to include share of book debts, drugs, surgery fittings, etc., etc.

5 S. COAST.—Well-established good middle-class non-dispensing PRACTICE in residential town and health resort. Receipts 1936, £940. No panel or midwifery. Fees mostly 10/6 and 7/6. Nice house (4 bedrooms) with garage and garden, for sale if desired.

6 ISLE OF WIGHT.—Non-dispensing PRACTICE in a popular resort. Cash receipts averaged last two years £2,350 p.a. Panel 300. Beautifully situated house (8 bedrooms) to rent. Premium one and a half years' purchase.

7 S.E. COAST.—PARTNERSHIP *in old-established* Practice, averaging £4,100 p.a. in growing resort. Panel 3,000. Modern corner house (3 bedrooms, etc.) for sale or to rent. Premium for one-fourth share, two years' purchase.

8 W. OF ENGLAND.—Non-panel PRACTICE in an inland watering place. Cash receipts average £830 p.a. House or flat could be obtained. Premium one and a-half years' purchase.

9 ISLE OF WIGHT.—Well-established PRACTICE averaging nearly £1,200 p.a. in seaside resort. Panel over 725. Good corner house (5 bedrooms) with central heating. Garage and small garden for sale. Good scope. Premium two years' purchase.

10 SUFFOLK.—Old-established country PRACTICE about £1,100 p.a. Panel 832, returning for 1936, £582. Good house (3 bedrooms), garden and garage. Rent £40 p.a. Premium £2,000 or near offer.

11 LONDON, E.—Old-established PRACTICE of £1,793 p.a. in populous district. Panel 2,600. House (6 bedrooms, etc.), to rent. Premium two years' purchase.

12 S. OF ENGLAND.—PHYSIO-THERAPY PRACTICE of £1,000 p.a. *in an important town*. Fees, 10/6 to £1 1s. Premium £1,250 (including *certain equipment*).

13 LONDON, N.W.—PARTNERSHIP in increasing Practice in new developing area. Cash receipts year ended 31st March, 1937, *£2,312. Panel 2,440.* Good house, with central heating (5 bedrooms, etc.), to rent or for sale. Premium for half-share £2,450, or possibly the whole would be sold.

14 N. WALES WATERING PLACE.—PARTNERSHIP in old-established Practice of £6,000 p.a. Panel 2,600. Nice flat with garage. Welsh must be spoken. Premium for one-fifth share one and a-half years' purchase.

15 E. ANGLIA.—PARTNERSHIP in an old-established Practice in country district. Cash receipts year ended 30th June, 1937, £3,321. Panel 1,400. House to rent at £30 p.a. One-third or two-fifths share at first.

16 E. ANGLIA.—PARTNERSHIP in an old-established Practice of £2,800/£2,900 p.a. in prosperous county district. Panel 1,530. Double-fronted house (6 bedrooms), garage and garden. Freehold for sale or to rent. Premium for one-third share one and three-quarter years' purchase.

17 S. MIDLANDS.—PARTNERSHIP in old-established Practice, averaging £1,369 p.a., in good town. Panel about 900. Excellent large self-contained flat (4 bedrooms, etc.), to rent. Premium for one-half share £1,400, with succession to whole practice in three years.

18 LONDON, W.C.—Old-established mixed PRACTICE £2,360 [illegible] sirable part. Panel over 3,000. No [illegible] residence to rent on lease. Great [illegible] unexpired lease, goodwill, some furniture and fittings, etc., £6,000 or near offer.

19 LONDON, E.—Middle-class PRACTICE of over £2,400 p.a., in outlying district. Panel 2,870. House in good repair. Garage and garden. Freehold for sale. Premium two and one-quarter years.

20 W. OF ENGLAND.—PARTNERSHIP in old-established Practice of £6,600 p.a. in a beautiful country district. Panel 4,500 and appointments worth £1,325 p.a. Centrally situated house (5 bedrooms), for sale. Premium for one-fifth share, £2,750.

21 MIDDLESEX.—PARTNERSHIP (with preliminary Assistantship) in a steadily increasing Practice in a very good residential district on the Thames. Cash receipts, 1935, £4,844; 1936, £5,465; 1937, £6,264. Panel 2,700 and appointments £727 p.a. Premium for one-fifth share two and a half years' purchase.

22 N.W. ENGLAND.—ASSISTANT wanted at once (with view to partnership, after short trial period, and early succession). Mixed Practice of about £650 and capable of much expansion, in popular holiday resort in attractive country. Panel over 300. Good opening for surgeon. House available, including office, garden and garage. Salary 8 gns. weekly with keep and car expenses.

23 N.E. COAST.—Old-established and easily worked middle and better working-class PRACTICE, averaging over £1,150 p.a., in seaport town. No panel—a few contracting out-patients. Visits 5/- to 15/-. Rent of consulting rooms, £26 p.a. A suitable residence could be obtained. Good scope, much building going on. Premium £1,200 (contents of consulting rooms, including X-ray plant and electrical apparatus, about £130).

24 LONDON, S.E.—PRACTICE of about £500 p.a. Panel 533. House with surgery accommodation to rent. Premium one year's purchase, or offer.

25 W. OF ENGLAND.—Country PRACTICE doing about £1,400 p.a., in picturesquely situated village. Panel over 600. Good stone-built slate roof house (4 bedrooms, dressing-room, etc.), garage and charming garden, about ¾ acre, for sale. Hunting, fishing, shooting. Premium £2,800.

26 LONDON, W.2.—Old-established PRACTICE in residential district. Receipts last year, £1,440. Panel 1,000, about. Good house to rent at £130 p.a. Premium two years' purchase.

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Practices and Partnerships for Disposal (continued).

27 MID-DEVON.—Increasing Country PRACTICE, about £800 a year, in delightful part. Appointments and panel return over £350 p.a. Excellent house (6 bedrooms, dressing-room, etc.), in 1½ acres of grounds. Separate surgery accommodation. Electric light and main water. Garage and stabling. Freehold for sale. Scope. Premium £1,200.

28 DEATH VACANCY.—SOUTH WALES.—Panel and Contract PRACTICE returning about £1,550 p.a. Large compact residence (6 bedrooms), in excellent condition, with two garages and pleasure and kitchen gardens, to rent.

29 COUNTY TOWN, within 65 miles of London.—PARTNERSHIP in Practice averaging between £2,300 and £2,400 p.a. Panel about 2,000. House containing 6 bedrooms, for sale or rent. One-third share (after preliminary Assistantship) at one and three-quarter years' purchase, or near offer.

30 LONDON, E.15.—Old-established PRACTICE averaging £1,670 p.a., in populous suburban district. Panel 1,990. Small house in excellent repair. Rent £50 p.a. Good scope. Premium two and a quarter years' purchase.

31 NORFOLK.—PARTNERSHIP in steadily increasing Practice, about £2,300, in delightfully situated country town. Panel about 1,850. Good society and sport. One-third share at first at two years' purchase.

32 S. MIDLANDS.—PARTNERSHIP (short preliminary Assistantship) in Practice, over £5,000 p.a., in first-rate town. Panel nearly 5,000. House with 4 bedrooms, garage and garden, to rent. One-fifth share at first at two years' purchase.

33 LONDON, N.5.—Middle-class PRACTICE averaging £866 p.a., including appointment worth £135 and a panel of 676. Nice corner house (5-6 bedrooms), garden and garage, to rent. Premium £1,250.

34 LONDON, S.E.—Old-established and increasing PRACTICE of £2,500 p.a. in suburban district. Panel 2,000. Detached double-fronted house (5 bedrooms, etc.), garage and garden. Freehold for sale. Premium two years' purchase.

35 HOME COUNTIES.—Old-established PRACTICE of over £1,000 p.a. in beautiful country district on Bucks and Northants borders. Panel 536. Attractive house (6 bedrooms, etc.), Freehold for sale, or rent. Premium two years' purchase.

36 S. OF ENGLAND.—PRACTICE of about £300 p.a. carried on by a medical woman in a cathedral town. Panel 100. House (2 bedrooms, etc.), to rent. Premium £500.

37 AUSTRALIA.—Old-established PRACTICE of £1,400 p.a., in agricultural township. Good house (3 bedrooms, etc.), for sale. Premium £1,600 and £250 for X-ray plant.

38 MIDLANDS.—Old-established PRACTICE in beautiful country district. Cash Receipts last year £1,280, including appointments worth about £60, and a panel between 650 and 700. Visits 2/6 to £1 1s. without medicine. Nicely situated house (4 bedrooms, dressing-room, etc.), with nice garden and two garages. Rent about £50 p.a. Premium two years' purchase.

39 N. WALES BORDER.—PARTNERSHIP (with early succession) in old-established County Practice, about £2,500 p.a., in important town. No panel. Surgery premises could be purchased or rented. The private residence is available if required. A share up to one-half would be sold at first with early succession. Premium two years' purchase.

40 DEATH VACANCY.—ESSEX SUBURB.—Receipts average nearly £850 p.a. Panel 423. Semi-detached house (4 bedrooms). Price £800 freehold. Reasonable offer accepted.

41 LONDON, S.W.1.—SPECIAL PRACTICE for catarrhal conditions, nasal catarrh, hay fever, asthma, etc., etc., about £1,000 p.a., in Grosvenor Place. Consultations . . is for series of treatments. Excellent ..... at £100 p.a., on lease. Scope. Premium one and a-half years' purchase.

42 SEASIDE TOWN WITHIN AN HOUR OF LONDON.—Very old-established PRACTICE. Receipts average £625 p.a. Panel about 300. Nice detached house (5 bedrooms), with garage and garden, for sale or rent. Good scope. Premium £1,000.

43 RESIDENTIAL DISTRICT WITHIN 15 MILES OF LONDON.—Old-established PRACTICE. Receipts last year over £2,000. Panel about 1,600. Visits 3/6 to 10/6. Nice residence (4 bedrooms, dressing room, etc.), good garage and garden, for sale or rent.

44 LONDON (Western District).—PARTNERSHIP in Practice averaging about £3,550 p.a., including good panel. House containing 4 bedrooms, etc., large garage and nice garden. One-third share at first. Premium two years' purchase. Preliminary Assistantship if desired.

45 MIDLANDS.—Old-established non-dispensing PRACTICE in first-rate residential town. Cash receipts average £1,640 p.a. Panel 560. House contains 6 bedrooms, etc., garage and small garden. Price £2,400 freehold. Scope. Hospital. Premium £2,850.

46 E. MIDLANDS.—Old-established country PRACTICE, averaging nearly £650 p.a., in pleasant village. Appointments worth over £150 and panel 500. Charming stone-built house (6 bedrooms), with central heating, main electric light and power and water supply. Large garage; garden about 1½ acres. Price freehold £1,700 Scope. Premium two years' purchase.

47 KENT.—Old-established and steadily increasing PRACTICE (in hands of Medical Woman) in rapidly developing district. Receipts last year £680. No panel. Visits mostly 5/-, medicine extra. Suitable residence could be obtained. Excellent scope. Premium £1,000.

Purchasers can raise additional capital for the purchase of approved practices or shares.
Particulars will be forwarded on application.

RELIABLE LOCUMS AND ASSISTANTS ARE URGENTLY REQUIRED.

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SCOTTISH BRANCH, 21, Alva Street, Edinburgh, 2

Manager: W. M. SCOBIE. Telephone: Edinburgh 23969

FOR DISPOSAL

A. MIDLANDS.—PARTNERSHIP in industrial town. Preliminary Assistantship. Receipts approximately £3,500. Panel 3,500. One-fourth to one-third share at first at two years' purchase. Suitable house may be rented.

B. N. OF SCOTLAND.—Country PRACTICE, old-established, in beautiful district. Receipts last year, £450. Panel 390. Excellent house to rent.

C. EDINBURGH.—Receipts £800. Panel 1,000. Suitable house for sale. Premium—Practice and house, £2,300.

D. ABROAD.—SIAM ASSISTANTSHIP with view to Partnership Agreement for two years. First-class passage both ways. At end of two years, if suitable, opportunity given of purchasing share in Practice.

E. LONDON, N.—CONSULTING ROOMS with SMALL NUCLEUS in large residence along with, if required, part of the house. Excellent opportunity for Doctor to build up practice. Moderate rent.

For further details apply The Manager, 21, Alva Street, Edinburgh.

LOCUMS AND ASSISTANTS REQUIRED IMMEDIATELY.

Terms on which the business of the Branch is transacted will be submitted on application to the Branch Manager, to whom all communications should be addressed.

BOVRIL MEDICAL AGENCY, LTD.

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Chairman and Managing Director, Dr. J. FIELD HALL.

The maximum commission payable on the sale of any Practice or Partnership in Great Britain placed exclusively in the hands of this Agency is £50 (fifty pounds), which sum covers goodwill, drugs, surgery fittings, fixtures and furniture, instruments and book debts, but not house property. Schedule of Terms will be forwarded on application.

Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.
No charge is made to Principals for the introduction of Locum Tenens or Assistants.

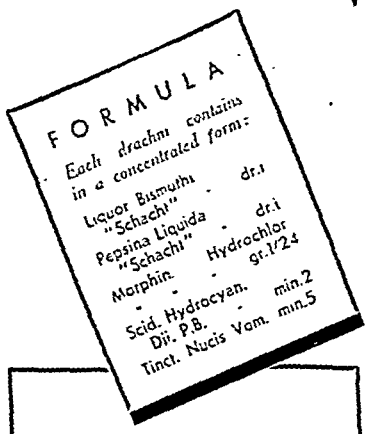
1. NORTH-WEST COAST.—Well-established PRACTICE, with seaside town and country work, producing £1,299, including panel and appointments worth about £400 p.a. Suitable house with 3 bedrooms, etc., garden, garage. Rent £50 p.a. Sport of all kinds. Premium only £1,250 for quick sale.
2. NORTH-EAST COAST.—Well-established non-panel PRACTICE, averaging about £800 p.a., but capable of extension as considerable building is in progress. Very good house, with 6 bedrooms, etc. Price £1,500. Premium 1½ years' purchase.
3. SOUTH COAST.—PARTNERSHIP.—A ONE-HALF SHARE in good middle and upper-class practice producing about £2,550 p.a. Panel of 1,300. Fees 3/6 to 21/-. Suitable house can be rented at £65 p.a. Easily worked, and scope for increase. Premium 2 years' purchase.
4. LONDON, EAST.—Good working class PRACTICE producing over £1,100 p.a., with panel of 1,800. Suitable house can be rented at £80 p.a. Premium 2 years' purchase.
5. LONDON, EAST.—PRACTICE established 30 years, and producing £1,400 p.a., including panel of 1,800, and appointments worth £236. Small house, with 1 sitting, 2 bedrooms, etc. Rent £60. Premium 2 years' purchase.
6. NORFOLK AND SUFFOLK BORDERS.—A TWO-FIFTHS SHARE, with increase to one-half, is offered in an old-established practice with considerable scope for increase. Receipts approximately £3,300, with panel of about 1,400. Low expenses. Good house available.
7. SURREY.—Pleasant district in outskirts of London.—A 5/9TH SHARE is offered in an old-established practice producing for the past 12 months about £4,500. Panel of approximately 1,800 patients. Good house available on rental. Ingoing man should be over 30, married and preferably a Protestant.
8. BORDERS OF HAMPSHIRE AND BERKSHIRE.—Old-established country PRACTICE. Receipts for past 12 months about £1,200 including £372 from panel of about 660 patients. Suitable house available on rental at £70 p.a. approximately inclusive. Premium £1,550.
9. DEVON COUNTRY.—Old-established PRACTICE producing about £800 p.a. including about £310 from panel of 428 patients. Freehold house for disposal containing 2 reception rooms, lounge hall, 6 bedrooms, waiting room, consulting room, etc., 1½ acres of garden, garage for 2 cars and stabling. Freehold £2,600. Premium £1,200.
10. CENTRAL LONDON.—Owing to illness, old-established PRACTICE producing about £2,300 p.a. Panel of over 3,100 patients. Suitable accommodation available on rental. There is an appointment producing £160 p.a. which is not included in the above receipts but which is believed to be transferable.
11. LANCS.—Suburb of large town. PRACTICE producing about £800 p.a. with panel of 467 patients. Suitable house on rental at £90 p.a. inclusive, Stated to be scope for increase. Premium £1,100.
12. DEATH VACANCY.—BAYSWATER, W. 2.—Good class PRACTICE producing about £840 p.a. but has been considerably more. Receipts have decreased owing to ill health. Fees 10/6—no panel. House available on rental or practice could be taken over separately. Premium 1 year's purchase.
13. LONDON, S.E. 11.—Old-established working class PRACTICE producing approximately £500 p.a.. Panel of about 500 patients. Can be worked as lock-up. Premium 1 year's purchase or any reasonable offer accepted.
14. YORKS.—LARGE TOWN.—Well-established better working-class PRACTICE. Receipts for last 12 months about £1,176 with Panel of 1,150 patients approximately. Fees, minimum 2/6 with visits from 3/6 to 7/6. Freehold house for disposal at £900 containing 3 bedrooms, 2 living rooms, surgery, waiting room, etc. Vendor wishes to specialise.
15. SURREY.—PLEASANT TOWN.—PRACTICE produced for past 12 months about £1,280 with a Panel of 800 patients. Fees 3/6 upwards, with visits from 5/- upwards. Midwifery 3 to 10 gns., about 15 cases per annum. Vendor has to give up owing to ill-health. Premium £2,000.
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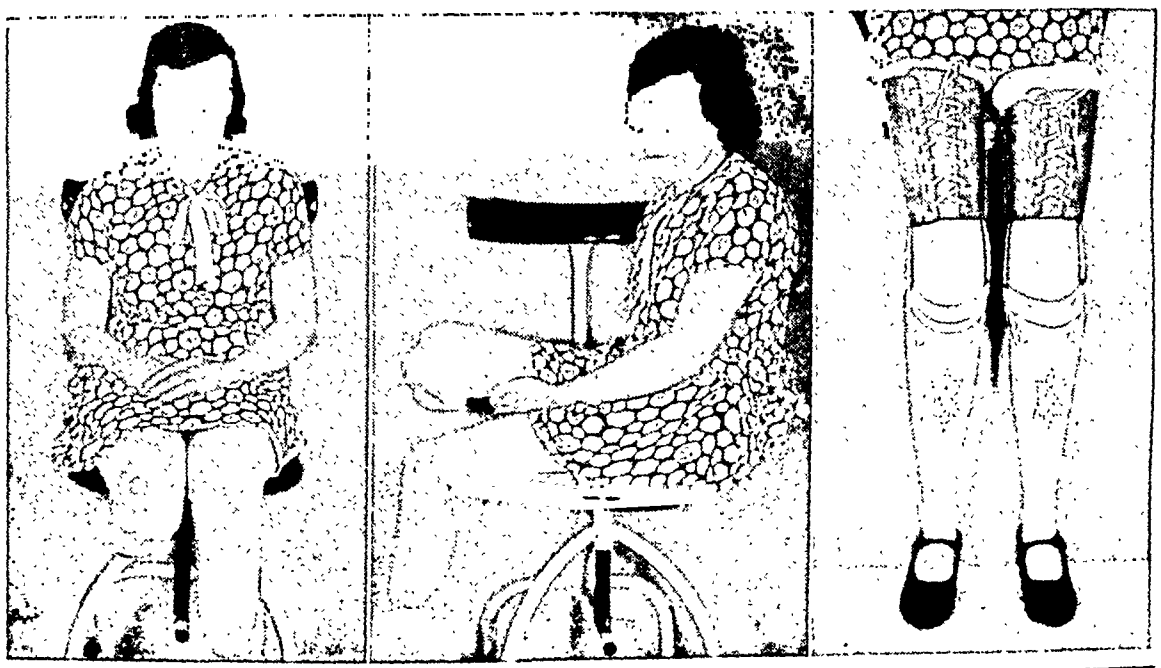
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CASE RECORDS

Case No. 2159/1472. 1935

Miss A., a hospital patient, aged 25 years, was sent to us in April, 1935. She had had both legs amputated below the knee eight years previously as a result of septicemia following an accident. Owing to general ill-health and lack of funds she had not been fitted with limbs but for seven years had managed to get about the house on her knees, causing deep-seated callouses to develop. See Figure 1. Apart from these callouses she had a good 7 in. left stump which was easily fitted with the normal below-knee limb. The right stump, on the other hand, was extremely short, only 1½ in. of tibia being left, and it appeared on first sight that the patient would have to be fitted with a kneeling appliance. However, on examination, it was found that as the leg had been amputated immediately below the tibio-fibula joint there was an exceptionally large bone surface which made it possible to use the end of the stump as a weight bearing point, and with the remanent of calf muscle being used to obtain a retaining grip, a normal below-knee type limb was fitted with only a slightly longer thigh corset to give additional lateral support. Although this is without doubt the shortest stump to which it is possible to fit a below-knee limb the patient has good control over both limbs and walks well with natural knee actions.



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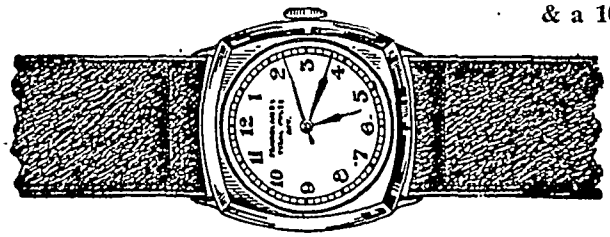
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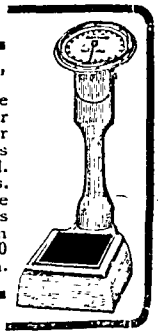
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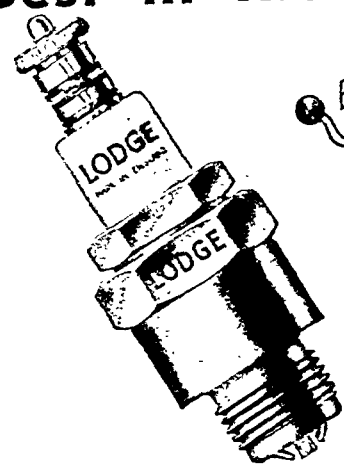
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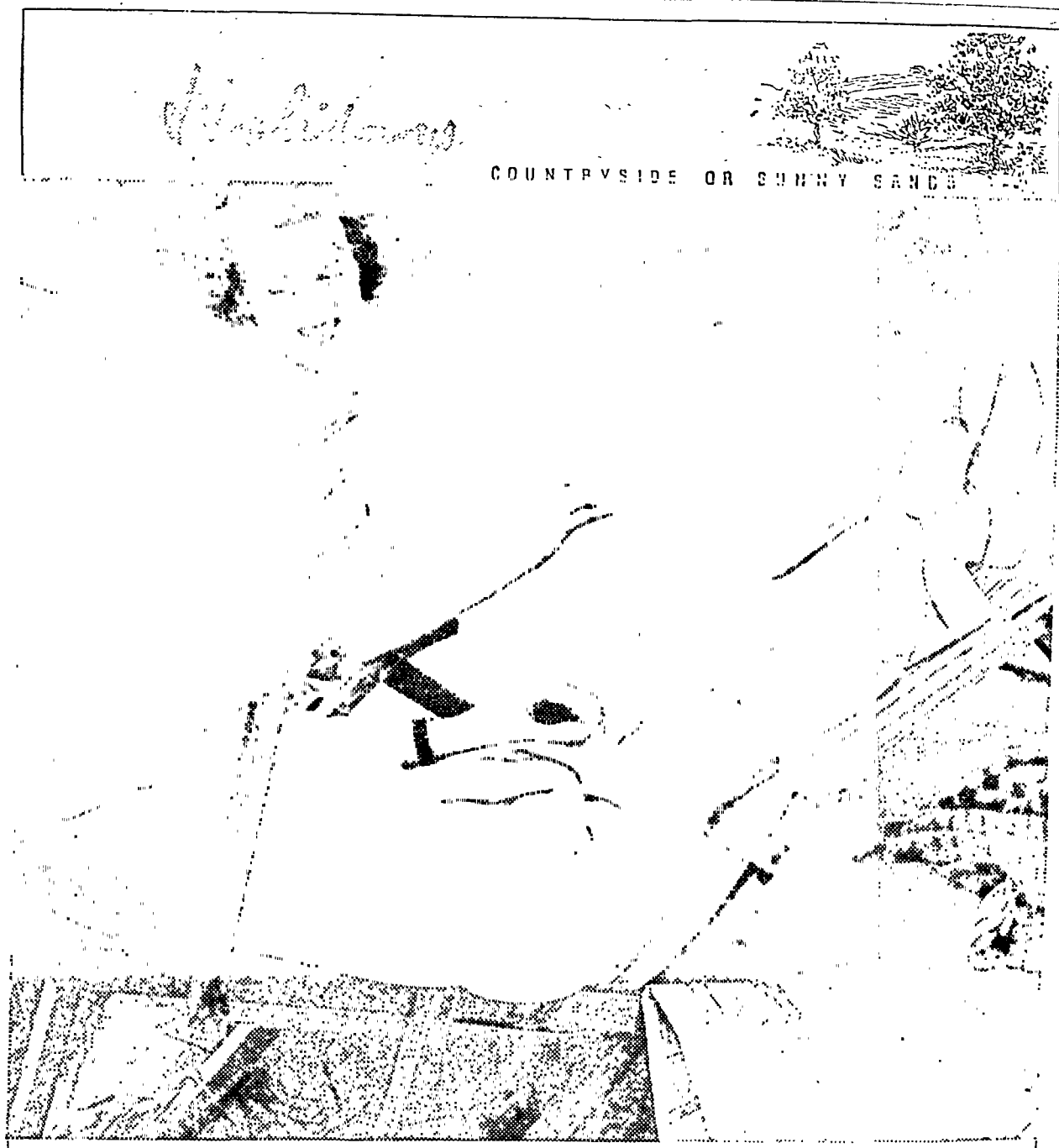
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Lazing on a sunny beach, or rambling over the countryside—taste decides your holiday choice. And wherever you go Player's offer another choice to complete your pleasure —Player's "Medium" or "Mild" Navy Cut Cigarettes. Here again taste decides your choice. A vast multitude of smokers find "Medium" suit their tastes better than any other Cigarette. But the smokers who do prefer a very mild and smooth blend can also enjoy the unrivalled Player Tobacco by asking for Player's "Mild" Navy Cut Cigarettes —Cork Tipped or Plain as you wish—Remember "MEDIUM" OR "MILD"—IT'S THE TOBACCO THAT COUNTS.

The packets are similar in design, but with Blue wording on "Medium" and Red on the "Mild." Prices are the same. 10 for 6D 20 for 11½D

Player's Please

MEDIUM OR MILD

NAVY CUT CIGARETTES—BOTH ARE PLAIN OR CORK-TIPPED

N.C.C.404



'Gas fires kill draughts but cure stuffiness' *says*

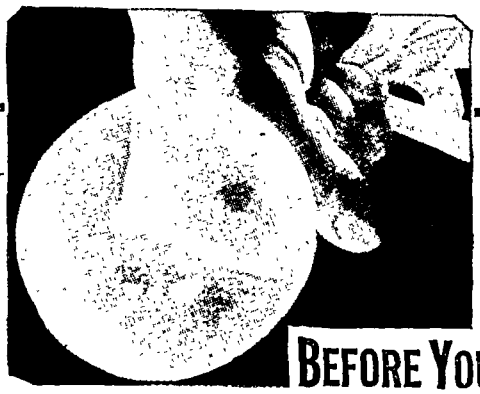
Mr. THERM (of Harley Street)

If you were to go into a room fitted with a modern gas fire, fill it with smoke, and then light the fire, you would see the smoke being gently but firmly sucked up the flue. In about twenty minutes the room would be clear!

A modern gas fire changes the air in a room three or four times every hour. It does so quietly and unobtrusively, creating no uncomfortable draughts. Stuffiness is equally impossible. That is because the modern gas fire emits an unusually large proportion of the shorter infra-red rays which warm the room (and its occupants) without drying or overheating the air.

GAS for healthy heat

ISSUED BY THE BRITISH COMMERCIAL GAS ASSOCIATION



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BEFORE YOU BUY SURGEONS' GLOVES

Inflate the end of a finger as fully as possible. Then look for tell-tale rubber "drip" mark at the tip of the finger! You'll find none in *Maderite* Surgeons' Gloves, for they are uniformly thin, yet tough throughout—moulded to the hand. No excess rubber anywhere, free from thickened spots or imperfections that dull your touch.

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Try on a pair and note the secure and firm grip the roughened surface gives you on your instrument. See how well *Maderite* gloves fit and feel. They are made for their job and do it well. Made by the manufacturers of Seamless Standard Latex Surgeons' Gloves, the famous tissue thin, quality white gloves.

General Representatives:
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for RELIABILITY

'VARIBAN' ELASTIC PLASTER BANDAGE

"VARIBAN" BANDAGE constitutes a marked advance on the older methods of treating chronic ulceration of the leg. It is made from a specially woven selvedge material possessing highly elastic properties, and is impregnated with an antiseptic zinc oxide paste.

"VARIBAN" is self-adhesive and combines the principles of firm, equable pressure and support to the swollen leg, with the benefit of an occlusive dressing under which the ulcer is protected and is stimulated to healthy repair.

In promoting proper circulation, "VARIBAN" steadily reduces oedema. It provides protection to the granulations of the healing ulcer. In the majority of cases it is found that pain is either eliminated or greatly relieved from the first application. The necessity for ointments, lotions, etc., is obviated, while "VARIBAN" provides an ambulatory treatment which allows of full activity of the limbs with better results than those following rest in bed alone.

PROFESSIONAL PRICES

2 inch - **1/7**
2½ inch - **1/11**
3 inch - **2/2**
4 inch - **2/6**

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Radiologists never have any doubts regarding the merits of Dean's X-Ray Units. They know, from long experience, that the Dean symbol stamped on every unit is a guarantee of efficiency in performance.

Apart from the manufacture of X-Ray Apparatus, we have an excellent service for the supply of Tubes, Films and accessories. We invite you to write for details of this service.

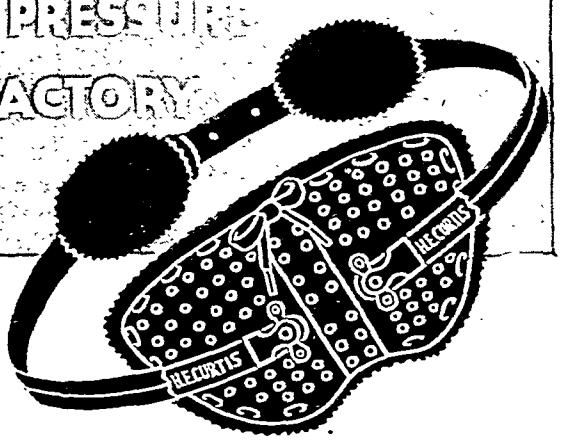
A. E. DEAN & CO

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AND AT BALDWIN'S GARDENS (Adjoining)
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ANTERIOR-POSTERIOR PRESSURE
FOR THE MOST SATISFACTORY
SUPPORT



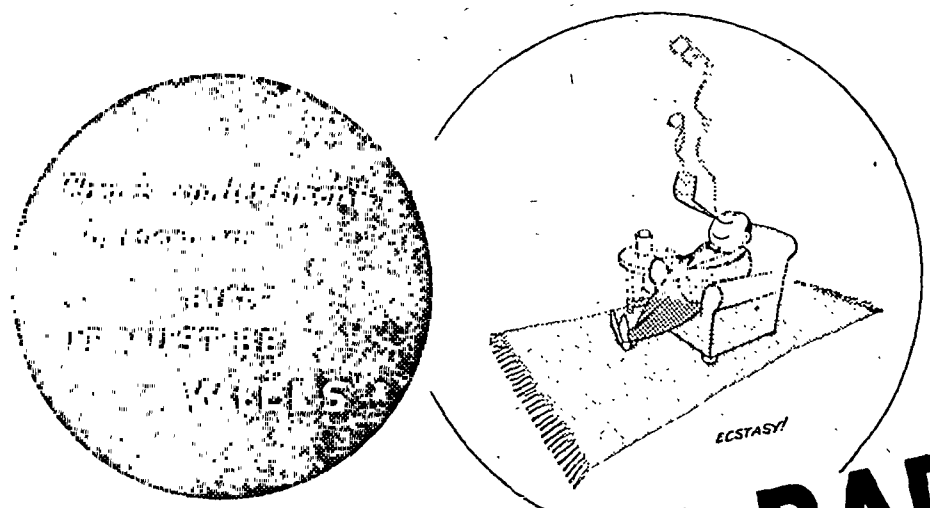
Effective support without constriction is made possible by the anterior-posterior pressure given by the Curtis Abdominal Support No. 1. This Support, one of over 100 abdominal appliances made by Curtis, gives steady, permanent support where it is most needed. Yet it is extremely light in weight and very comfortable in wear, giving perfect freedom to the hips. Medical Authorities throughout the world approve the Curtis Abdominal Support No. 1, and prescribe it for all cases where support upward and backwards of the lower abdomen is essential.

CURTIS

ABDOMINAL SUPPORT No1

Specialists in Abdominal Appliances.
Sole makers of
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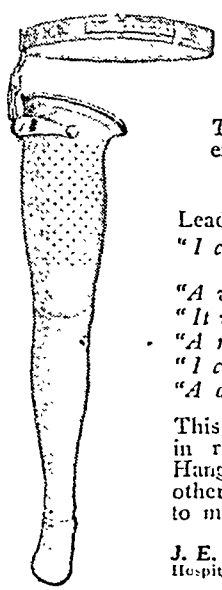
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The great advances in recent years in prostheses for the lower extremities are exhaustively described and illustrated in a 72-page book under the above title.

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This book is the result of practical experience gained in rehabilitating over **100,000 amputees** by the Hanger establishment. Many times larger than any other limb makers in the world. It is devoted solely to making and fitting artificial limbs alone.

J. E. HANGER & CO. LTD. Queen Mary's (Roehampton) Hospital for the Limbless.

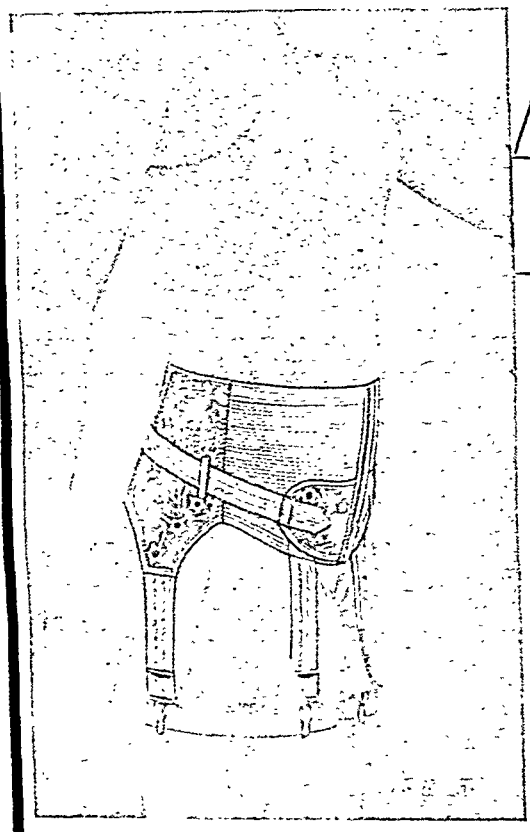
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"We guarantee to alter exchange or accept the return of any appliance without cost entered by the Medical Profession, if not found Suitable within fourteen days from date of supply."
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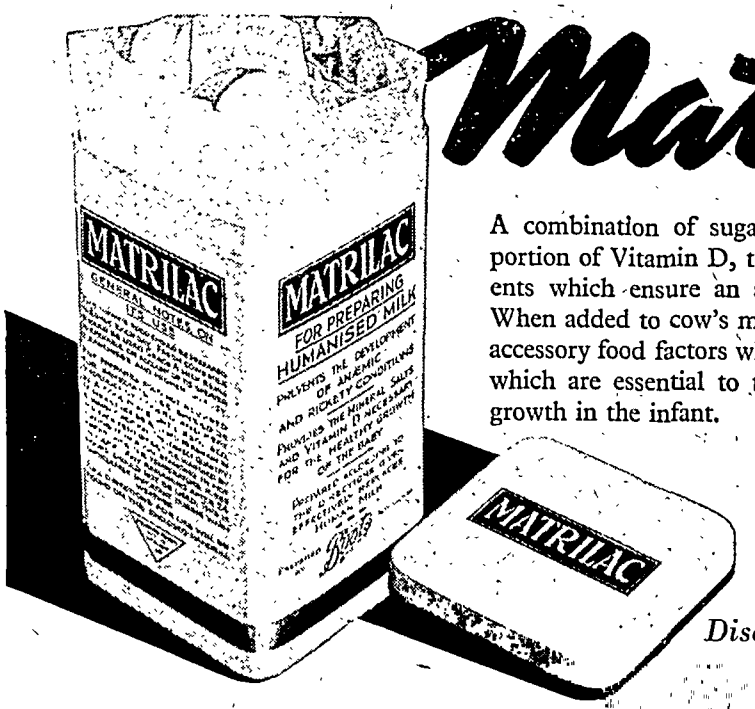
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Female fitters in attendance Monday to Friday. Orthopaedic Mechanician Wednesdays only.
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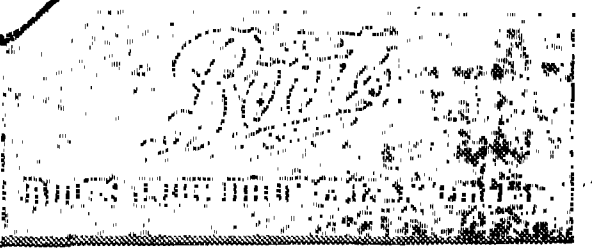
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Proves of special service in the treatment of pus cases

'ENZYMOL' resolves necrotic tissue, exerts a reparative action, dissipates foul odours; a physiological, enzymic surface action. It does not invade healthy tissue; does not damage the skin.

It is made ready for use, simply by the addition of water.

These are simply notes of clinical application during many years:

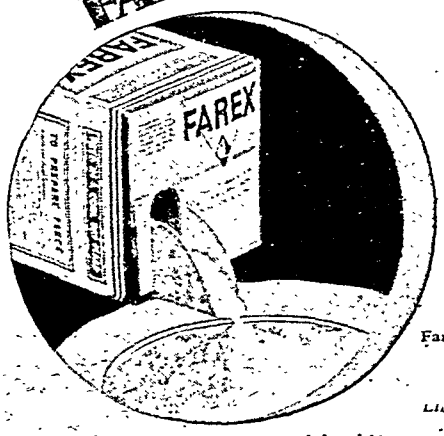
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Farex is liked in health and appreciated in sickness. Being pre-cooked and having a low fibre content, it is ready to serve, compact and very easily assimilated.

In health, Farex is sustaining. One tablespoonful doubles the calorie value of a cupful of milk without increase in bulk.

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Farex needs no cooking.

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FAREX
cereal food

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Valentine's Meat-Juice

IN the Treatment of Weak Babies, in the Gastric and Enteric Troubles of Infants and in the Wasting and Febrile Diseases of Children, the Ease of Assimilation and Power of Valentine's Meat-Juice to Sustain and Strengthen has been Demonstrated in

Hospitals for Children.

The quickness and power with which Valentine's Meat-Juice acts, the manner in which it adapts itself to and quiets the irritable stomach, its agreeable taste, ease of administration and entire assimilation recommend it to physician and patient.

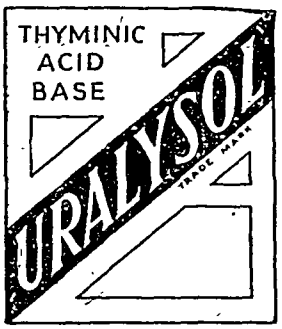
Physicians are invited to send for Clinical Reports.

For Sale by European and American Chemists and Druggists.



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JB 95



FORMULA

Thyminic Acid	0·10
Hexamethylenetetramine Anhydromethylenecitrate	0·50
Hexamethylene Tetramine	2·50
Piperazine Tartrate ..	0·25
Lithium Carbonate ..	1·00
Sodium Benzoate ..	1·00
Effervescent Base ..	ad 100

DIRECTIONS

One teaspoonful to be taken morning and night in a tumblerful of water.

Uralysol, in addition to being a solvent and eliminator of pathological Uric Acid, is a powerful urinary antiseptic.

Normally there exists in the body a certain quantity of uric acid, which assists general metabolism, and after it has played its part is eliminated together with the normal thyminic acid of the organism. When, however, uric acid is present in excess, the body needs additional thyminic acid to supplement the resultant deficit of this normal solvent of uric acid.

Uralysol, by its thyminic acid content, supplies the agent necessary to dissolve excessive uric acid.

The next step is the elimination of this thyminic-uric acid which, being in excess of normal, necessitates treatment by an agent capable of enhancing elimination.

Uralysol, by its content of hexamethylenetetramine and lysidin, stimulates the organism to eliminate the pathological uric acid already dissolved by its thyminic acid content.

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Modern Iron Therapy

Iron 'Jelloids' are an elegant and reliable means of administering the proto-carbonate of iron. The preparation has none of the disadvantages of Pil. Blaud. The iron content remains fresh and unoxidized indefinitely, and injury to the teeth is avoided.

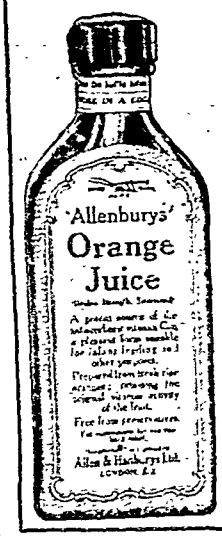
The 'Jelloids' are highly effective in the treatment of achlorhydric anaemia and indeed in all the simple anaemias in which massive iron therapy is indicated.

Iron Jelloids

You are cordially invited to apply for samples for clinical test.
The Iron 'Jelloid' Co. Ltd., King George's Avenue, Watford, Herts.

Double Strength Sweetened

Allenburys ORANGE JUICE



Supplies a potent source of the anti-scorbutic vitamin C in a form convenient for infant feeding and other purposes.

It is equivalent to *double strength* fresh orange juice and retains its full activity for a long period.

Employed with advantage in all cases in which fresh orange juice is used.

May be taken by children and adults in the form of a delightful drink by diluting with about ten times its volume of plain or aerated water or milk.

Contains no alcohol or chemical preservative.

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Further particulars and clinical sample will be sent post free on application.

BEFORE AND AFTER OPERATIONS

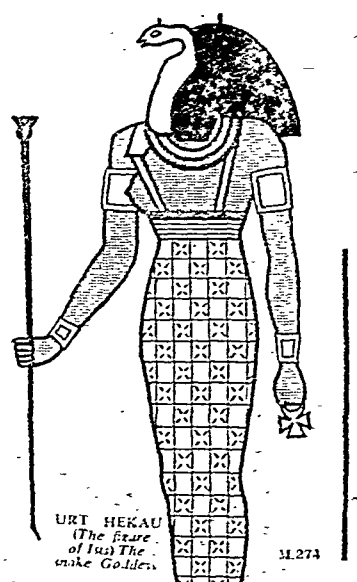
THE use of "Ovaltine" before a major operation is of great service in helping to build up the system against the strain involved by operative interference. In abdominal cases especially, where a light and unirritating diet is necessary, the use of "Ovaltine" alone for a few days before the operation will be found sufficient to maintain the patient's nutrition at a sufficiently high level.

After severe operations, the regular use of "Ovaltine" is of the greatest service on account of its bland nature, its ready digestibility and its highly nourishing and sustaining properties.

"Ovaltine" is a complete food, composed of fresh, full-cream milk, eggs and malt extract, in the form of crisp granules which dissolve readily in milk to form a delicious beverage acceptable to the convalescent patient.

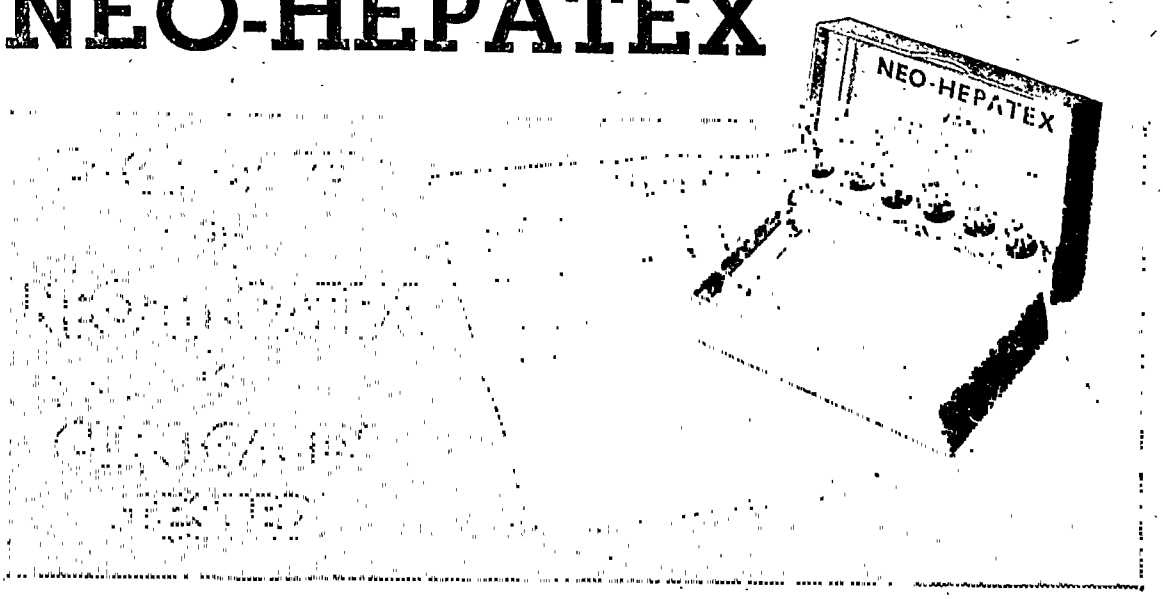
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The Accepted Standard in Liver Therapy

NEO-HEPATEX



A reproduction of the clinical report is enclosed with each package

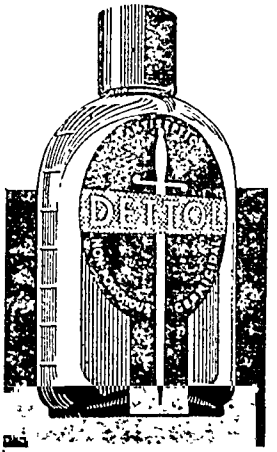
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Proved efficiency with *pleasantness*



In spite of its high germicidal efficiency (Rideal-Walker 3.0) 'Dettol' can be used at strengths impracticable with carbolic and cresylic antiseptics. It is non-poisonous, non-staining, pleasant smelling. It has been shown that when 30% 'Dettol' is rubbed into the hands and allowed to dry the skin remains insusceptible to infection by haemolytic streptococci for at least two hours unless grossly contaminated. 'Dettol' is also stable in the presence of blood, pus, faeces and other organic matter.

Obtainable from chemists in 1/- and 3/- bottles; and in larger sizes for medical and hospital use.
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'DETTOL' TRADE MARK THE MODERN ANTISEPTIC

'DETTOL' will be exhibited at the B.M.A. Annual Exhibition, Stand No. 20, Ulster Hall, Belfast, July 19th—23rd.

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'CYSTAZOL'

A POWERFUL URINARY ANTISEPTIC



'Cystazol' is a combination of Hexamine with Sodium Benzoate: its action depends on the liberation of formaldehyde from the decomposition of the hexamine that takes place in the urine which has been rendered acid by the sodium benzoate moiety.

'Cystazol' is employed with advantage in cystitis, bacilluria of all types, pellagra, gonorrhœa and septic conditions of the urinary tract generally.

COMPRESSED TABLETS of 'Cystazol'

Supplied in bottles of 20, 40, 80, 160 and 500 (10 grain) tablets, at 1/6, 2/6, 4/6, 8/6 and 20/-

EFFERVESCENT GRANULES of 'Cystazol'

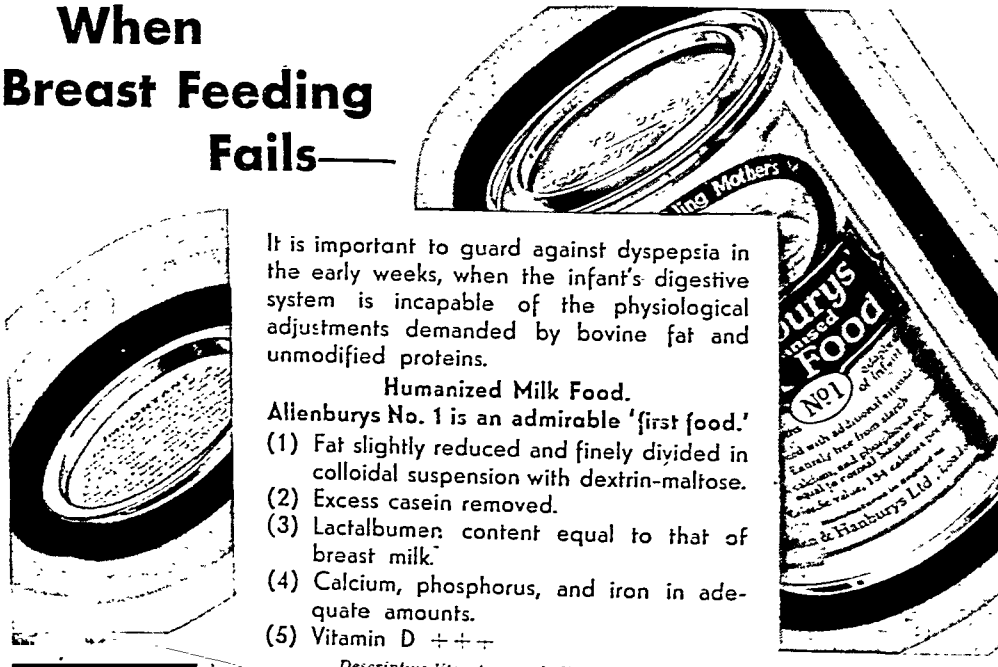
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It is important to guard against dyspepsia in the early weeks, when the infant's digestive system is incapable of the physiological adjustments demanded by bovine fat and unmodified proteins.

Humanized Milk Food.

Allenburys No. 1 is an admirable 'first food.'

(1) Fat slightly reduced and finely divided in colloidal suspension with dextrin-maltose.
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(3) Lactalbumen content equal to that of breast milk.
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WITH
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ISSUED IN THE FORM OF INJECTIONS and SUPPOSITORIES

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SUGAR-FREE GINGER ALE . . . .
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Approved by the Institute of Hygiene and the Diabetic Association.

These beverages have been analysed by the Institute of Hygiene and found "free from sugar and metallic contaminants." The analyses shown have been accepted by the Medical Advisory Council of The Diabetic Association and recommended for diabetic and obese subjects.

ANALYSIS SHOWED THE FOLLOWING RESULTS:

Schweppes Sugar-Free Dry Ginger Ale		*Ordinary Dry Ginger Ale*	*Schweppes Sugar-Free Tonic Water*		*Ordinary Tonic Water*	*Schweppes Sugar-Free Sparkling Lime*		*Ordinary Sparkling Lime*
Carbohydrates	absent	6.2%	Carbohydrates	absent	9.1%	Carbohydrates	absent	11.8%
Protein	absent	absent	Protein	absent	absent	Protein	absent	absent
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"The Vitamin B_1 activity is assured

by biological assay of *every day's output*"

So far as is known, there is only one food product for which such a claim, involving no fewer than 250 biological assays for Vitamin B_1 per annum, is or can be made.

Unnecessary? Consider this:

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How then can the physician make sure that his patient receives, in a natural form, any desired amount of vitamin B? Only by prescribing Bemax.

BEMAX

A unique natural source of accessory nutritional factors.

Vitamin B_1 — 400 International Units per ounce.

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Vitamin B_6 — (Anti-dermatitis) One of the richest sources.

Vitamin A—280 International Units (as Carotene).

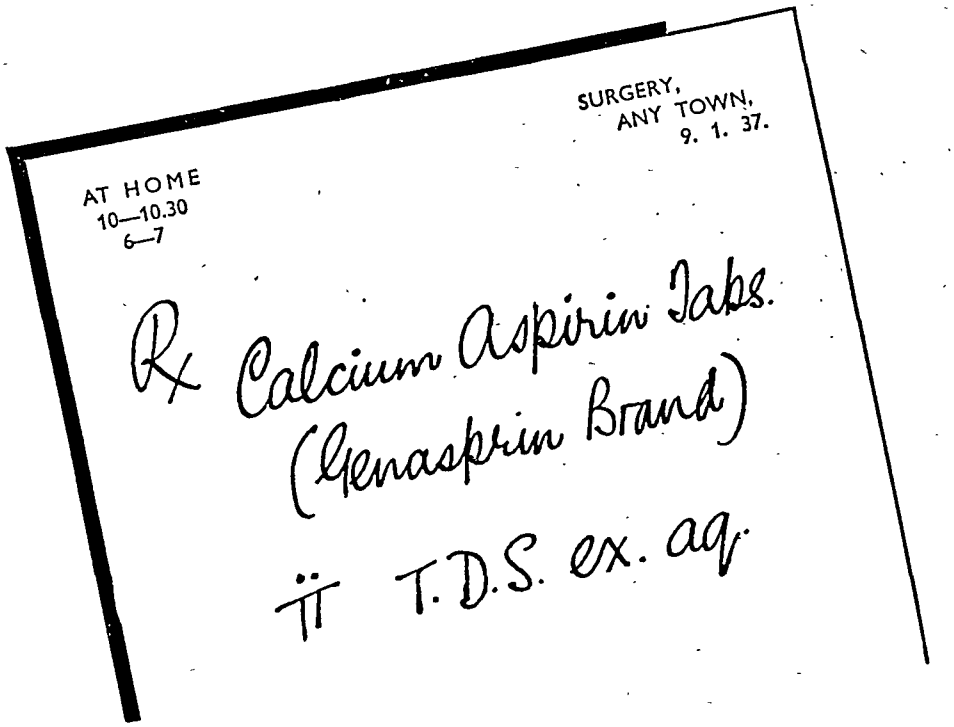
Vitamin E—the richest natural source;

Phosphorus — 330 mg. per ounce;

Magnesium — 99 mg. per ounce;

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THE BEMAX LABORATORIES, (Dept. B43), Upper Mall. London. W.6



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As an analgesic and antipyretic, CALCIUM ASPIRIN (Genasprin brand) TABLETS possess all the virtues of purest aspirin without any of the latter's side actions.

Being neutral and soluble, CALCIUM ASPIRIN (Genasprin brand) cannot cause gastric irritation, acidosis or demineralisation.

In cases of calcium deficiency, pregnancy, lactation and growth, the value of CALCIUM ASPIRIN as against aspirin is clearly demonstrated.

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12 tubes in carton : 12 x 20 tablets 6/6
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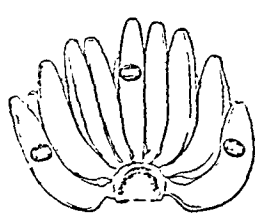
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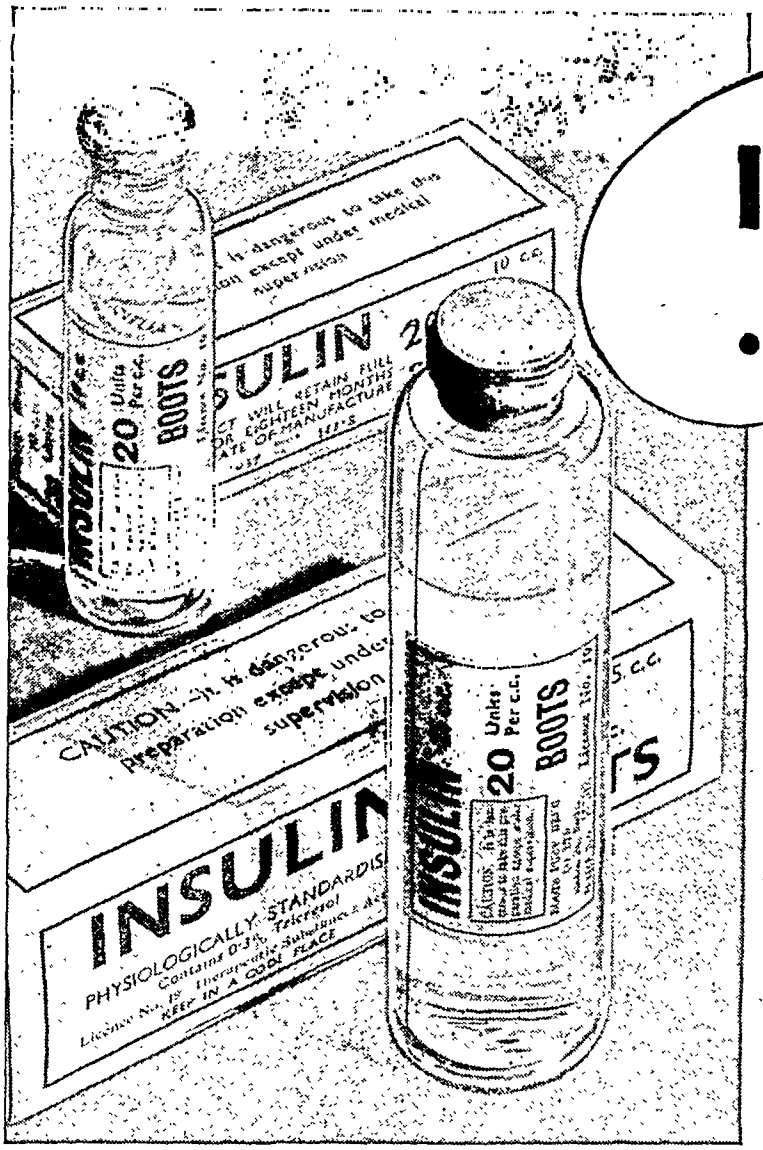
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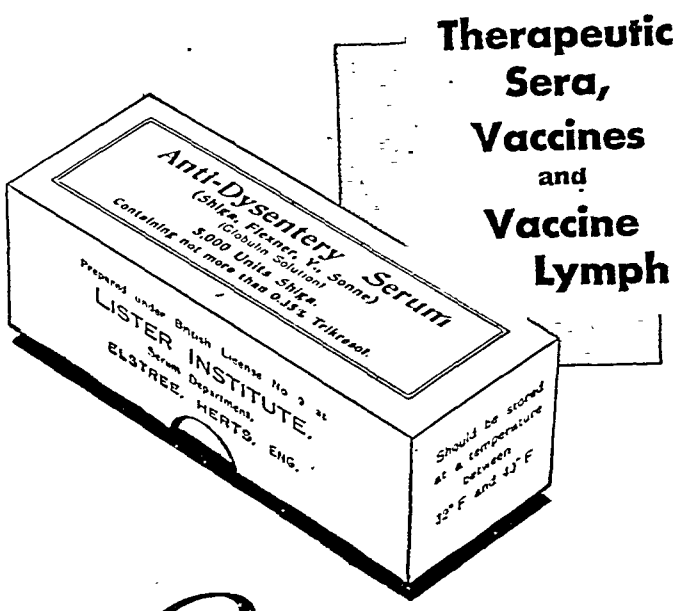
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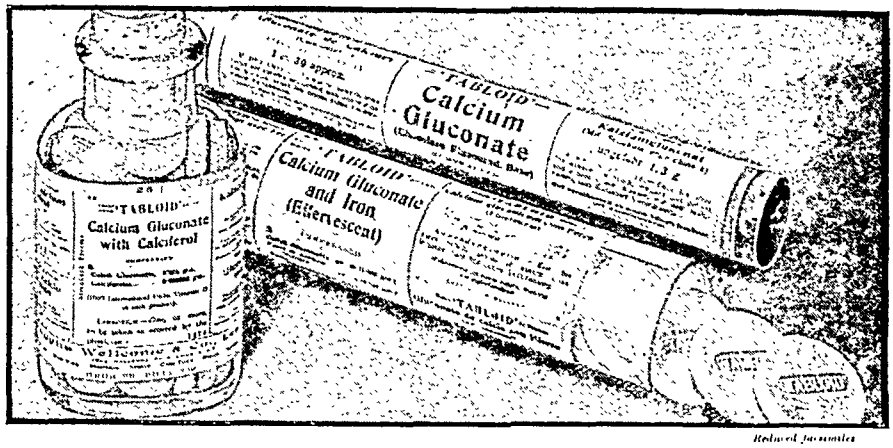
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HEREDITY AND CONSTITUTION IN THE AETIOLOGY OF PSYCHIC DISORDERS*

BY

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The significance of heredity and constitution in psychic diseases is not limited to those groups of mental disorders which, in the narrower sense, are usually termed "hereditary diseases," but reaches far beyond them. Conversely, the diversity of causes in hereditary diseases is by no means exhausted by what we call heredity and constitution.

The Three Main Groups of Psychoses

Let us, to begin with, concentrate on these hereditary diseases in the narrower sense of the term—that is to say, mainly on the three main groups of the manic-depressive, the schizophrenic, and the epileptic diseases. If in these cases we base our investigations only on the psychoses themselves, then the genetical tables will be reminiscent of completion-test texts. We find strong evidence of the workings of heredity; we find psychoses of a similar nature repeatedly cropping up in family trees. But that alone does not suffice to explain why they take their particular position in the tables, why they appear in one place and disappear in another. An essential advance in our knowledge has been due to the fact that these psychoses are not inherited intermittently as an isolated special factor by themselves, but that the relations between the various cases of psychosis in a family can, to a certain extent, become discernible, phenotypically, as variations of the personality. To-day, therefore, we no longer study hereditary diseases merely under the aspect of the relations of psychosis to psychosis, but to an ever-growing extent within the great framework of the psycho-physical constitution as a whole, thus bringing personality and psychosis into close relationship.

We had, first of all, ascertained that subjects who develop schizophrenia, manic-depressive disturbances, or epilepsy have no random psychic make-up. In fact, each of these hereditary diseases develops on the foundation of certain personalities and families of a definite coloration. These families have a larger proportion of personalities of a peculiar shade who, without being ill themselves, do exhibit a biological make-up, both in bodily characteristics and in the finer traits of character and temperament, which approaches the characteristics of personality we find in mental invalids. According to their classification in their respective hereditary diseases we term them schizoid, cycloid, or epileptoid psychopathies. Thus each of these hereditary diseases is surrounded by a sphere of certain specifically characteristic hereditary constitutions and characters. Once these constitutions have been recognized the hereditary diseases no longer appear as chance phenomena. A complicated network of relations is unfolded before us which leads from certain healthy temperaments through certain nervous and psychopathic forms of constitution, and on to the gravest forms of hereditary diseases. Within this network one may regard the hereditary diseases proper as points of utmost concentration of a specifically directed form of degeneration. Thus, lastly, the hereditary diseases do not spring only from the propagation of those afflicted by them, but probably to a far greater extent through the medium of schizoid, cycloid, and epileptoid kin, and through combinations of inheritance. There are two ways of visualizing this genesis: either as a strong accumulation of homogeneous factors, as occurs in inbreeding (for instance, in the single or repeated mating of highly schizoid partners), or by way of an endogenous or exogenous lesion, in itself uncharacteristic, which is added to such a combination, whereupon at this genetic stage the hereditary disease is developed which is appropriate to the constitutional make-up of the particular family—that is to say, in an epileptoid family epilepsy, in a schizoid family schizophrenia, and so on. This latter form of origin is the more probable.

Physique and its Relation to Temperament

With these first principles well established we next proceed to make a more exact study of the forms of human constitution, including healthy subjects. As it happens, one can dispense with the intermediate link of the hereditary diseases altogether, and simply investigate the forms of human physique in direct relation to their psychology and their types of physiological responses. We then discover that the temperaments which we had termed "cyclothyme," after our primary survey of the hereditary manic-depressive disorders, are simply the normal temperaments of people with pyknosomatic physique, whilst the schizothyme temperaments occur in the first place in the leptosomatic types. The temperaments of athleticosomatics actually show some affinity with certain personality types in the epileptic group, to which they contribute a considerable contingent, but a uniform relationship cannot be directly established. Such temperaments can, however, be well differentiated and described in a direct manner in healthy subjects. We have termed the temperaments of the athleticosomatics viscous temperaments. Many smaller physique-groups also have their temperamental characteristics—for instance, the eunuchoid type, the pituitary type, and the infantile type, to whose relation to the hysterical group we shall refer later. The three main normal temperament groups, which have been differentiated in accordance with their physical habitus, lend themselves to direct observation and to methods of investigation by questionary, but especially to the experimental psychological approach. Thus one arrives at certain simple psychological building-stones of the structure of human personality which, for the moment, cannot be further reduced, and which correspond

* One of three lectures given at the Tavistock Clinic in April.

with physique. We call these "radical forms of the personality." We are now working with these radicals, to which we are beginning to reduce the temperamental types and from which, again, the great temperamental groups can be correspondingly built up.

Diagnosis of the Endogenous Psychoses

If we now pass from the general biological approach to the consideration of special psychopathological problems we find that the diagnostics of the endogenous psychoses are beginning to be considerably transformed in the light of these recently acquired additions to our knowledge. However, the three principal types of hereditary psychic disease, the schizophrenic, manic-depressive, and epileptic, are retained as before. In fact they become paradigms of certain fundamental hereditary characteristics in the human personality which obtain equally in the realm of normal biology.

But as soon as we consider clinical diagnostics in particular we find that the three great morbid clinical pictures, in their present very comprehensive form, contain extremely heterogeneous elements. If, for example, a pyknosomatic subject develops a schizophrenia-like psychosis his schizophrenia will on the whole differ essentially from the schizophrenia of a leptosomatic. Usually it will have a differently coloured semeiology, a different age of onset, and a different development and prognosis. The pyknosomatic who happens to trespass into the schizophrenic field usually develops his illness later in life and exhibits more periodic or paranoid forms, which are less destructive to the personality. Further, the prognosis in his case is altogether more favourable. The athleticosomatic, eunuchoid, obese, and other types also exhibit specific varieties of schizophrenia.

In the light of constitutional biology even so simple a picture as that of depression reveals a rich abundance of heterogeneous patterns. When a schizoid personality develops a depressive state then its coloration, its more subtle psychological structure, its accompanying bodily symptoms, tempo, and curve of development, differ so widely from those occurring in a cyclothyme-pyknosomatic subject that one almost shrinks from describing both by the term "depression." In this case, in fact, the common term may serve to obscure rather than illuminate the issue. In any case nowadays one can hardly bring oneself to include a melancholia which is overloaded with schizoid constitutional features in the manic-depressive group if the term "circular," or "manic-depressive," is to retain any true biological meaning.

So when we now study the relation between constitution and hereditary disease we shall no longer—as formerly of necessity—concern ourselves purely statistically with the relative correspondence; for instance, of leptosomatic physique or athleticosomatic physique with schizophrenic, manic-depressive, or epileptic psychosis. As it happens, even these summary statistics, computed from the international material of numerous research workers and covering over 8,000 cases, reveal a clear and positive correlation. But the degree of disparity in the results of the various investigators hardly tends to point to genuine discrepancies in their material, but rather to reveal how many or how few heterogeneous factors bearing on psychosis the various investigators have included in their clinical diagnoses, which may be perfectly correct according to older psychiatric standards.

However, we can now venture to reconstruct the system of hereditary psychic disorders step by step, analysing their finer structure under the aspect of psychophysical constitutional biology. This diagnostic method, which is based on true constitutional biology and which at the same time takes stock of exogenous causal factors, is of course far more complicated. It leads to a larger number of overlapping types and subgroups, but both prognostically and therapeutically it is much more reliable and successful.

This new psychiatric approach to the problem of hereditary mental disorders, which is influenced by constitutional-biological considerations, is of far-reaching significance to pure science, characterology, and clinical diagnosis; it also affects the prognostic and therapeutic aspects of clinical psychiatry. From the point of view of eugenics, in its negative (that is, its eliminatory) aspects, this extension of our knowledge of constitution does not materially affect our fundamental position—namely, that as a rule the carriers of serious hereditary disorders, both in their own interests and in those of society, should have no offspring. This principle holds good whether we choose to classify hereditary diseases under a few main heads (as did Kräpelin), or whether we prefer to differentiate them more thoroughly with the aid of constitutional biology. For more subtle eugenic problems, however, especially when we are called upon to advise both the healthy and those who exhibit psychopathic traits either in their person or their inheritance as to suitable marital partners and the likelihood of their producing healthy stock, our knowledge of constitutional biology cannot be sufficiently thorough and detailed. Great tasks are yet awaiting us in this field, and constitutional biology will be called upon to play a decisive part.

Exogenous Contributory Factors

Our approach is still further widened owing to the fact that in dealing with inherited disorders we need to consider not only inheritance itself (although it is admittedly the chief causal factor, which therefore rightly governs our practical outlook in matters of eugenics), but also the various exogenous contributory causes, which may be reactive, infective, or toxic; endocrine factors must also be borne in mind. For if only 1 per cent. of the total causality is lacking, then the psychosis will not manifest phenotypically; and the subject of morbid inheritance will remain a latent carrier throughout his life. This "multidimensional" approach has its greatest bearings on therapeutics. As clinicians we no longer regard hereditary diseases in individual cases as the working of inexorable fate. If we tackle the contributory causes, such as have been mentioned above, a psychosis often lends itself to cure. These considerations are supported not only by clinical experience but also by theoretical genetics, as, for example, Luxemburger's work on the occurrence of schizophrenia in monozygotic twins, carried out at the Rüdin Institute.

Clinical observation shows us that even so simple a psychiatric picture as depression occurs only in a minority of cases solely as a result of hereditary factors comparable to the ringing of an alarm clock which is mechanically set to go off at a certain time. Even in cases of powerful morbid inheritance many contributory causes are, as a rule, required to bring the depressive predisposition to the surface. There are, for example, certain infectious diseases, such as ordinary influenza, which can activate depression in predisposed subjects. The weather, and ordinary climatic conditions, may give rise to violent shifts of mood; a southern gale can depress persons with certain constitutions to the verge of suicide. There are people who can only live in certain climates, who in other climates are continually subject to depression.

Incidentally, similar phenomena occur in the field of epilepsy. There are epileptoids who develop tropical frenzy on their first oversea trip and who from then onwards exhibit episodic disturbances of consciousness even at home. People with the depressive predisposition are especially susceptible to endocrine fluctuations. The climacteric releases a variety of depressive states; an appropriate endocrine treatment may remove them. Many women become depressed in pregnancy or parturition, and sometimes only in such circumstances. In early cerebral arteriosclerosis many pyknosomatic cyclothymes exhibit depressions which can be counteracted by vascular remedies. Powerful experiences and reactive causes may lead to depressions, especially when they occur coincidently with physically determined depressive factors in a person who is constitutionally predisposed thereto. As the result of this refinement of the analysis of the causal factors in every variety of depression, which we owe to the multidimensional approach, and the consequent attempt to tackle causes therapeutically, the group of depressions which may be regarded as purely endogenous has diminished progressively. Strictly speaking, there is no antinomy and no defined borderline between hereditary and exogenous depressions; actually the various causes overlap to such an extent that one should often speak only of "mainly endogenous" or "mainly reactive" depressions. The evaluation of hereditary factors must, however, be taken into account whenever eugenic as opposed to simple therapeutic issues are involved.

Overlapping of Hereditary and Exogenous Causes

In epilepsy this overlapping of hereditary and exogenous causes is even more in evidence, and the role of severe external insults, such as cerebral trauma or alcohol, in the origin of epileptic fits is uncontested. Besides, reactive factors, psychophysical exhaustion, and endocrine disorders are by no means without importance in certain kinds of epilepsy. Here, again, one must beware of too sharp a distinction between "genuine" and "symptomatic" epilepsy. Even in the genuine cases "multidimensional" release mechanisms can frequently be traced; and, conversely, hereditary factors often contribute to the epilepsy following severe head injuries.

The hereditary factor is probably most important in schizophrenia; but even here Luxemburger's work on monozygotic twins points to the existence of contributory exogenous causal factors, apart from heredity, in about one-fourth of all cases. This aspect of the causal factors becomes far more complicated when we examine the border-zone of schizophrenia—for example, puerperal and infective psychoses with schizophrenic features or, on the psychogenic side, the so-called "schizophrenic reaction type." So far as the psychic causes are concerned it is worth noting that by no means all psychic traumata are equally likely to release psychoses in persons with a schizophrenic make-up. Thus the effect of factors threatening life—fright, fear, strain—is small on schizoid constitutions; otherwise one would have observed an enormous rise in schizophrenia during the war, which was by no means the case. Schizoids are comparatively immune from all these groups of experiences; probably this is in some way connected with their natural disposition towards a stoical attitude to life. On the other hand certain schizoid constitutions are highly susceptible to erotic and ecstatic religious influences. I have occasionally observed the acute onset of katatonia in which the religious note was consistently sounded immediately following revival meetings. Similarly, there exists what one might term "engagement-katatonia," which may follow on intense erotic experiences of an ambivalent nature. It is noteworthy that these two types of experience may not only release acute katatonia but they also still further reveal the deep psychology of many schizophrenics. Both are closely interrelated, so that love thoughts may at a certain degree of intensity suddenly turn into religious ideas, or religious ecstasy may stimulate and inform an erotic experience.

If we consider all these clinical facts in relation to the release of certain psychic-reactive and also toxi-infective cases of schizophrenia we find that they fit in well with the results of genetical research and that the secondary causes, which according to research on twins we must hold responsible for a substantial number of schizophrenic cases, are actually accessible to careful clinical observation.

A twofold task for psychic hygiene follows from these considerations. The first and foremost is to prevent by way of eugenics the inheritance of endogenous psychoses. But where this method fails the psychosis in the life of the hereditarily tainted individual can frequently be prevented from later appearance by prophylaxis; or it can be cured after its appearance if we devote careful study to the variety of the causal factors which, together with inheritance, are responsible for the onset of an unequivocal psychosis.

The Exogenous Psychoses

But if we want to realize the significance of constitution and heredity in its full scope we must turn for a moment to the seemingly opposite end of the scale of the psychic disorders—namely, the *exogenous* psychoses. In such disorders, which can be exemplified by general paralysis and alcoholic psychosis, a non-hereditary, non-constitutional noxa enters the organism from without and is unquestionably the main cause of the illness. Is the inherited constitution negligible in these cases? And can the many variations in the clinical picture and their mode of progress be explained simply by exogenous determinants—for instance, by the existence of different varieties of spirochaete? According to our more recent investigations this is definitely not the case. The hereditary constitution plays a considerable part, too, in disorders that primarily are determined exogenously, not only in the production of semeiological nuances but also by affecting the whole progress of the disease. For general paralysis and puerperal psychosis this fact has been established by my collaborators Westphal and Römer, and for alcoholic psychosis by Pohlisch.

In dealing with the alcoholic psychoses Pohlisch mainly stressed the constitutional differences found in those suffering from delirium tremens and alcoholic hallucinosis. These varying clinical forms are by no means due to different varieties of alcohol; they represent different types, different constitutions, which develop delirium or hallucinosis as the case may be. Among the deliriants no fewer than 55 per cent. were found to be pyknosomatic and 64 per cent. were temperamentally markedly cyclothyme; only 1.8 per cent. showed asthenic physique, and only 3 per cent. were temperamentally schizothyme. With hallucinosis the ratio was reversed: schizoid temperaments were clearly predominant (almost three-fourths of all causes). Correspondingly, the delirium tremens series contained many socially well-adapted, efficient individuals without personal or hereditary character defects. Patients suffering from alcoholic hallucinosis, on the other hand, were frequently of the unstable, asocial, and nervous type—not far removed from schizophrenics.

Similarly it is probable that the alcoholic disorders which occur in persons with the epileptoid constitution could be shown to link up with epileptic psychosis proper.

It is important to realize in this connexion that the constitutional factor in the exogenous psychosis does not merely effect a slight variation of the symptomatic picture in accordance with the patient's personal peculiarities—this would follow as a matter of course—but that it is an essential determining factor in the very structure of the psychosis, a factor which does not merely colour the symptomatic picture but which determines the whole course and termination of the disease. The psychological reasons for taking to drink vary in accordance with a person's constitution; the alcoholic disorder with which he is faced is correspondingly different, and the prognosis is different. These considerations also affect our approach to the biological and eugenic aspects of alcoholism. Since, according to Pohlisch, alcoholic delirium, in contrast to the other alcoholic psychoses, seldom occurs as a familial disorder and frequently crops up in constitutionally healthy individuals, it should be regarded as of less serious import than the other psychoses when we are called upon to advise in matrimonial problems.

Influence of the Constitution

Constitution plays no less important a part in the determination of the reactive neuropsychoses, psychogenic conditions, psychoneuroses, hysteria, obsessional neurosis, and paranoid states. Although we are frequently able to cure them by psychotherapy we must never forget that successful psychotherapy just as often depends on problems of personality-structure as on experience and environment. The structure of personality is in its essence constitutional and inherited. In our treatment we exert a formative influence on it. Often external experience is not so much the real cause of a neurosis; it is rather a flame which ignites the inner typologically determined mass of conflicts within the personality. Practical psychotherapy has shown us that in the origin of the neuroses definite constitutional elements play a part—for instance, minor developmental arrests, especially those occurring during puberty and in the immediate post-pubertal period.

In hysteria, for example, the constitutional predisposition is by no means limited to what is generally termed "nervousness." Certainly all hysterics exhibit autonomic nervous anomalies; their reflex and semi-reflex reactions are highly labile and are easily deflected. But this is not the whole story so far as the specific hysterical predisposition is concerned: there are innumerable people with a labile autonomic nervous system, but few necessarily consult a doctor, and among them only a small number are hysterics.

Furthermore, in hysterics our methods of investigation reveal a mass of minute constitutional sexual anomalies which, if we regard the personality in cross-section as it were, appear as stigmata at the level of physique and character. These anomalies are perhaps even more conspicuous if we regard the personality, so to speak, lengthwise—that is, as a life curve—when they become clearly apparent as developmental checks and uneven rhythms in the pubertal and post-pubertal periods. It is these anomalies which form the other half of the constitutional predisposition to hysteria mentioned above. It is noteworthy, however, that extreme degrees of developmental arrests such as are associated with endocrine disorders and generalized infantilism do not as a rule give rise to hysteria; the more usual resultant picture is one of more generalized psychological inferiority uncomplicated by psychic conflicts. However, it is these *partial* "infantilisms" and "juvenilisms" which give rise to endopsychic tension and ambivalence and prepare the way for conflict formation, in that they weaken a person's resistance to the effects of traumatic experiences and situations.

These constitutionally predetermined irregularities of development are apt to lead to conflicts with the outside world and its demands that cannot be resolved in the way in which a normally constituted individual would take them—that is, in his stride. Hence the constitution creates its own conflicts in relation to experience, to which it then, in turn, reacts pathologically. Here again the diagnosis of inherited predisposition in neurosis by no means impedes our practical work and our therapeutic success. On the contrary, it increases our ability to recognize the chief foci of endopsychic conflict and the means by which they can be overcome. So far as mental hygiene is concerned prophylaxis by means of eugenic measures applies less to the neuroses. On the other hand, the recognition of the constitutional elements in psychogenic disorders offers wide possibilities for prophylactic treatment by way of the medical-educational training of the personality.

THE PHYSIOLOGICAL BASES OF NUTRITION*

BY

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It would not be fantastic to claim the greater parts of the fields of biochemistry, physiology, pathology, and clinical medicine as the legitimate province of the modern science of nutrition. As our knowledge of fundamental living processes increases, it can be seen more and more clearly how chemical and physical changes are not only responsible for determining the normal physical development and the maintenance of the organism in a state of equilibrium with its environment, but are equally associated with those special reactions to environmental stimuli which we recognize as signs of diseased states. This well-recognized conception implies that development, the maintenance of health, and the disturbance of health depend on the orderly or disorderly function of metabolic processes which can legitimately be held to imply, respectively, perfect or imperfect states of nutrition. It is conceivable, or rather probable, that with further advances in knowledge most of the diseased states which we now recognize will be definable in terms of definite disturbances of metabolism or nutrition. The scope of the B.M.A. Section of Nutrition would under these conditions be wide enough to cover a large part of the field of medicine; and indeed it is already capable of so doing, as the President of this Section was able to prove for us in his opening address last year. For practical convenience, however, at the present time it seems politic to limit the sphere of our interest mainly to those nutritional processes which are known to be more or less directly related to the intake or absorption of food. In regard to the subject under discussion to-day, for example, it would be within the scope of the title to include the physiology of respiration and excretion, muscular exercise, personal hygiene, and so on. Actually all the formal contributions to this discussion will be concerned with dietary constituents and their contribution to nutrition.

* Read in opening a discussion in the Section of Nutrition at the Annual Meeting of the British Medical Association, Belfast, 1937.

Awakening of Interest in Nutrition

When I was honoured by receiving an invitation to open this discussion the title had already been chosen, and it was clearly the wish of the officers of the Section that the opener should expound the views of modern experts on the dietaries considered likely to promote optimal physical development and maintenance of health among Western peoples—views which have recently been crystallized by a representative committee appointed by the Health Committee of the League of Nations. This is not the occasion for detailing the history of the inception of this committee of experts, but we may be permitted to remind ourselves of the developments which led ultimately to the publication of the committee's practical recommendations.

There is no doubt that it has been the more accurate knowledge of nutritional processes gained from the study of experimental animals in the laboratory which has been primarily responsible for the awakening of interest in the problems of human nutrition. Following the lead of such animal experiments, it has been shown that the general principles which have emerged from the laboratory are on the whole applicable to human beings. Some years ago it was clear to those who were actively engaged in this work that the knowledge which had already accumulated ought without delay to be made available for the securing of better nutrition for the masses of mankind. The recent world-wide trade depression, with its accompanying unemployment and poverty, provided the opportunity for interesting large sections of the world's populations in the question of nutrition and malnutrition. Government departments began to be conscious of the fact that they had some responsibility in the matter of encouraging the people entrusted to their care to secure for themselves and their families the largest measure of health and well-being which right feeding could give them. In the meantime the Health Department of the League of Nations had been interested in the application of the newer developments of the science of nutrition to the problems of feeding human beings, and was busy collecting information regarding the relation between nutrition and states of health and disease, and regarding the existing evidence of malnutrition among different races of mankind. The resulting admirable report by Aykroyd and Burnet rightly attracted a considerable amount of attention, and did a good deal towards preparing public opinion for the conclusions of the special committee of experts which the League of Nations appointed to consider the practical question of recommending diets calculated to secure good nutrition in human beings. The first report of this committee was published in 1935 under the title of our present discussion; the report was revised and reissued in 1936. This final version will be the main theme of my contribution.

Practical Aspects of the Nutrition Problem

I propose to limit my observations, as the League committee has done, to certain practical aspects of the problem of human nutrition. The main questions I wish to discuss are: What can we hope to accomplish by any dietary recommendations that we may feel justified in making?; and, What diets are most likely to secure the desired effect?

Only tentative answers can be given to these questions: we cannot always wait for full knowledge before planning a course of action. The primary aim in making any dietary recommendations is, except possibly in rare instances of medical emergencies, to secure the best possible state of nutrition which a suitable combination of foods can bring about. The term "best possible" is used rather than "optimal" for the reason that hereditary defects, previous disease, or deleterious environmental factors may prevent a perfectly good diet from exercising its full nutritive effect, as we shall no doubt learn from the contributions of Dr. Brock and Dr. Spence. The fact that so many private individuals and official committees have of late considered it advisable to make dietary recommendations implies that in their opinion the state of nutrition of a considerable proportion of our existing populations is not as satisfactory as it might have been under the influence of an ideal dietary. And there is much evidence to support this opinion. There is, for example, no doubt that the physical development of very large numbers of our children could be improved by better feeding during the whole period of growth. The milk-feeding tests which have been carried out in many different countries have shown that the mean rate of growth of any large group of children can be accelerated by regular supplements of this valuable food. Sufficient time has not yet elapsed for information to be available regarding the ultimate effect of such accelerated growth in the final state of development. The experience of most of those who have been engaged in controlled feeding work with laboratory animals has been that diets which promote the most rapid growth in early life maintain the animals in the most vigorous health in adult life. It is, however, interesting to note that Dr. Hayward of Cornell University found he could prolong the life of rats by stunting them in early life, a result apparently in direct contradiction with the experience of Professor Sherman, whose rats survived to old age better when they were given diets which promoted the most rapid rate of growth.

The skeletal development of children could without doubt be improved by better feeding. While the propaganda of the last fifteen years has resulted in a considerable diminution in the incidence of the grosser manifestations of rickets, there are indications that minor skeletal defects due to suboptimal bone calcification are still common. Of equal or even greater importance is the fact that the development of the teeth is undoubtedly handicapped in the majority of our children by suboptimal nutrition in early life. The relation between diet and the development and maintenance of sound teeth is of paramount importance, and I shall refer to it again in a few moments.

Before leaving the question of diet in relation to development I would draw your attention to certain less gross effects of faulty nutrition in the matter of physical development. Under this category might be included the failure of the haemoglobin-producing mechanism caused by iron deficiency in childhood. As far as is known this nutritional fault is completely reversible, but there is evidence that other faults may not be completely reversible—for example, the abnormal development of the gingival epithelium in young dogs, described by M. Mellanby as arising from deficiency of vitamin A. This made them susceptible to pyorrhoea in adult life even if adequate supplies of vitamin A were given for long periods after growth had ceased.

Effects of Suboptimal Diets

The extent and perfection of physical development is not the only benefit to be expected from proper feeding. The question of the maintenance of a state of health and full vigour is becoming more and more widely recognized as one in which right feeding must occupy a prominent

position. There is no time for me to go fully into the various ways in which suboptimal diets may affect the health. Frank deficiency diseases due to a low intake of mineral elements and vitamins, and possibly good protein, are by no means rarities in the British Isles. In many parts of our Empire they are far too common, as is now being made abundantly clear by the investigations which are taking place in Ceylon, India, Africa, and Australasia. How far minor degrees of specific deficiencies are responsible for lessened vigour and vitality, and lowered resistance to infections and degenerative diseases, is still largely a matter of conjecture, but steps are being taken to fill in this gap in our knowledge. Clinical and biochemical tests are now being used—for example, in an attempt to recognize the earliest signs of deficiency of vitamins A, B, and C—and the results may enable more accurate estimates to be made of the effect of suboptimal diets on the general state of health.

Questions which have attracted a great deal of attention and which still require much further investigation involve a more exact understanding of the relation between faulty nutrition and infection, including the response to established infections of an acute and chronic nature as well as the incidence of infection. There is much evidence that common diseases and disorders of the alimentary tract may be related to faulty feeding, though the mechanisms by which they are brought about remain obscure. The subject of dental caries deserves special mention. Though there is still much dispute as to its cause, all are agreed that it should be largely controllable by suitable feeding, and the kinds of diets advocated by the protagonists of the opposing views concerning its aetiology are not in practice very different. Further investigation is obviously desirable, but in the meantime it should be possible to reduce enormously the amount of dental decay in the next generation by securing as perfect a state of nutrition from the pre-natal period onwards as existing knowledge will permit.

Steps to Secure Improved Nutrition

This very sketchy outline of some of the results which might be expected to follow a general improvement in the state of nutrition of the masses of mankind must suffice for the moment. Our President gave us last year a much fuller and more complete account of the relation between faulty nutrition and disease. Time compels me to turn now to a consideration of the steps which should be taken to secure the desired improvement in the state of nutrition. The main lesson we have to learn from the fundamental research work of the present century is that optimal nutrition depends on the liberal supply in the diet of every food-component which cannot be manufactured in the body from some other constituent of food, as well as on an adequate allowance of calories and utilizable nitrogen. The term "liberal" which I have just used in reference to the supply of essential food constituents was deliberate. In some quarters there is a tendency to assume that an adequate supply of these constituents is one which prevents the appearance of gross signs of deficiency diseases, whereas there is plenty of experimental evidence to show that improved states of nutrition can be secured by increasing the intake of such constituents above the level at which mere protection from recognizable deficiency symptoms occurs.

Though man's requirements of many of the vitamins and mineral elements can be stated to-day with a fair measure of confidence, he would be a rash man who would attempt to devise synthetic diets containing measured quantities of all known food constituents and guarantee that perfect nutrition would follow their consumption. We are not in a position yet to define the exact chemical composition of an ideal diet, and it is surely wise, therefore, to guard against any possible deficiencies by including in our ideal diet liberal supplies of those foods which experiment and experience have shown to be most likely to contain any unsuspected essential constituents, as well as those foods which have already been shown to be rich in essential food factors.

Not only should the ideal diet consist of suitable quantities of the right kinds of food, but the foods of which it is composed should be produced under conditions which ensure that it is richly supplied with the essential constituents it ought to contain. This applies to foods of both animal and vegetable origin. More and more information is coming to hand regarding the variations in the concentration of important dietary constituents in foods produced, transported, and stored in different ways. It is obviously not safe at present to assume that a diet is adequate in every respect if it contains the bare minimum of essential components calculated from chemical or biological assays carried out on foods produced or kept under varying conditions. The wise course is to include in our ideal diets liberal supplies of those foods which are to be relied on to secure the necessary quantity of essential food constituents.

Practical Recommendations

This brings us to practical recommendations for securing optimal nutrition. We shall lay stress on the provision of a liberal supply of foods rich in vitamins and in mineral elements, especially calcium and iron in an assimilable form—that is, foods which have lately received the name "protective." This is the essential feature of the diets recommended by the League of Nations Commission. Its corollary is a corresponding decrease in the amount of inert if not actively harmful foods such as refined sugar and cereals. Adequate provision of calories and protein is by no means to be neglected, but in our own country this is not such a pressing problem. The protective elements of our diet can most easily be secured by increasing the consumption of milk, especially safe liquid milk, and other dairy products, all kinds of vegetables, especially green vegetables including salads, eggs, fat fish, and liver. In a diet planned on these lines the proportion of cereals will be reduced. The question of the relative merits of refined and whole-grain cereals was not treated at all exhaustively by the Commission, who supported the proposal that part of the cereal eaten should be lightly milled. It seems possible that the best practice would be so to increase the proportion of starch eaten in the form of vegetables, especially potatoes, that a comparatively small amount of cereal would be eaten, of which the bulk should be lightly milled so as to increase in the total diet the quantity of B vitamins and assimilable iron.

Diets for Children

The Commission rightly stresses the extreme importance of providing the best possible diets throughout the whole period of growth. This is, of course, one of the reasons why the diet it recommends for pregnant and lactating women contains such a large proportion of protective foods. There is no need to dwell on the special dietary requirements of mothers, since this question was fully discussed at yesterday's meeting. But a few words must be said regarding the proposed diets for children. Their special feature is the high proportion of the total energy

value contributed by protective foods, which is largely due to the inclusion of a liberal allowance of milk throughout the whole period of growth. The diets for children between the ages of 1 and 3 contain rather more than three-quarters of their total calories in the form of protective foods; those for children between 3 and 7 contain rather more than two-thirds, and this proportion is diminished in the pre-adolescent age to rather less than one-half. This insistence on a high proportion of protective foods is really the essence of the scheme for securing good nutrition. It runs directly counter to the attitude not infrequently adopted in some quarters that as long as a diet contains enough of the essential food constituents to prevent symptoms of deficiency diseases there is no point in worrying about its make-up.

There was recently published by Mr. Rowntree in his book *The Human Needs of Labour* a dietary scale, "representing a standard below which no class of worker should be forced to live," for a family of man, wife, and three children under 14. I made a rough analysis of this diet, and calculated that even if each child received more than his share of the protective foods in proportion to his man-value equivalent, less than one-quarter of his food intake would be derived from such protective foods—and even then more than half of the protective foods would be composed of cheap cuts of meat and condensed skim milk. It is true that even a diet such as this compares most favourably with diets consumed in many parts of the world. To take just one instance, Dr. Aykroyd has recently carried out a survey of diets in South Indian villages. Among the poorest group the diet averaged 1,664 calories per unit of man-value, and 95 per cent. of the calories were derived from cereals. The children forced by poverty to live on such diets showed only too frequently gross manifestations of deficiency diseases and general malnutrition, while the children brought up on the diets suggested by Mr. Rowntree might escape without immediate obvious symptoms of food deficiency other than slight indications of rickets, poorly developed teeth susceptible to decay, and a general physique below their potential optimum. All who have tried to put into practice the modern principles of nutrition, whether on experimental animals or children, would agree, I think, that it is worse than useless to lay down as a standard any diet which is likely to produce imperfect development and suboptimal states of nutrition. It is true that mere pious expressions concerning the make-up of the ideal diet will not enable the poor to buy the food best calculated to promote perfect nutrition. Fixing a dietary standard which approaches the ideal for promoting good nutrition at least draws attention to the urgency of the practical problem of trying to bridge the gap between the ideal and the actual, whereas an admittedly low standard merely encourages complacent individuals and authorities to continue their policy of *laissez-faire*.

Our discussion is concerned with the physiological, not the economic, bases of nutrition, and it would be out of order for me to pursue further the sociological and political implications of dietary standards. It will suffice to remind you that the Health Organization of the League of Nations is deeply concerned with the economic, agricultural, and political problems involved in attempting to supply a sufficiency of health-promoting foods for the populations of mankind. Our own Government Departments are already tackling the same problem, and a perusal of the first report of the Ministry of Health's Advisory Committee on Nutrition will show that these practical aspects of the situation are receiving serious attention.

THE ROLE OF HETEROPHORIA IN BINOCULAR DISHARMONY

WITH SPECIAL REFERENCE TO AIR PILOTAGE*

BY

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To confine this paper entirely to the domain of the air would be like writing the final lines of a book without considering the framework of the first chapter. The condition that we style heterophoria must be age-old, but the contest for mastery of the air is, within practical limits, an event of our generation. Racing through space does not itself produce heterophoria, but heterophoria may severely affect safe aerial manœuvre. Therefore let us consider first the part that heterophoria may play in binocular disharmony upon the ground. Furthermore, let us confine ourselves to this condition, ignoring at once all other visual states that are so wont to wriggle into the picture, such as squints of small degree, transient diplopias that are so often the precursors of insular sclerosis, and pareses and paralyses of the ocular muscles.

Symptomless and Symptom-producing Heterophoria

We cannot have discord where there is no rivalry. The processes of evolution have so shaped the visual pathway that only some check in the maze of development, or some unreasonable assault through the demands of modern life upon the binocular function, can create a symptom-producing situation. We may speak of heterophoria under two headings: (1) inherent (slight; marked); (2) acquired. Leaving out all questions of refractive and pathological states, the one great predisposing cause of inherent heterophoria is *dominant macular reception*. This may occur without rivalry, in which case symptoms as opposed to signs do not arise in later life; or it can be present in a slight degree (in this case with rivalry), thus creating a potential source of trouble, according to the visual destiny of the individual.

Heterophoria may be acquired at any stage in life from school age to the presbyopic period, either superimposed upon a dominant macular reception of slight degree or arising as a condition primarily induced by the circumstances of everyday life. To differentiate the one from the other is sometimes a matter of a little difficulty. In this the age of onset of symptoms helps. The man who has *acquired* heterophoria without the influence of an inherent condition tends to complain of ocular discomfort early in the process. So strong has been his binocular conception that he is awake to the first falter. There is another approach to the problem—namely, by an examination with the stereoscope of the binocular reception rate, and also the appreciation of depth. On the stereoscope such a case will demonstrate rapid alternation with those charts designed for the examination of simultaneous binocular perception, will readily appreciate simple depth, and will proceed to give a good account with the more exacting charts. All this is in direct opposition to the *acquired* heterophoria with an inherent foundation. It is a natural corollary (in these cases) that symptoms are proportionate to the primary strength of the binocular chain. Much that can be labelled heterophoria diagnostically is quite symptomless, and is the outcome of a strong inherent tendency.

* Read in opening a discussion in the Section of Ophthalmology at the Annual Meeting of the British Medical Association, Belfast, 1937.

In the innumerable occupations that shape the intricate design of modern life there are two things that prey for ever upon us. One is the call for prolonged concentration at close range, while the other is a natural worry with regard to the eventual outcome of our endeavours. Any cause that irritates the mind may easily hinder the smooth running of the former and add a new load to the latter. We are now treading the nightmare path of psychology, but not without reason.

The part that heterophoria may play in the induction and maintenance of a psychological state is not sufficiently emphasized. Too many times has the association been demonstrated for any doubt to remain. It is a matter of experience that the most intense headaches can be produced by heterophoria, headaches that act not only as a handicap at work but may actually confine the sufferer to his bed. If the ability to maintain an occupation depends upon detailed and accurate work, the carrying out of which in turn produces the ocular symptoms, the picture is then complete.

It is wrong to hold that all sufferers from heterophoria are constructed with the addition of a strong functional element in their mental architecture; but it is right to maintain that very many symptomatic cases are definitely unstable. A typical example of this is well shown in a female patient, aged 35, who for several years had confined herself to her house. Her condition bordered on panic. She requested that I should leave my consulting-room door ajar so that she could run from the house if she found the strain too great. She had three to four intense headaches every week. These began in the morning and worked up during the day. Her vision was:

Right ... $6/18 \frac{-0.5 \text{ Sph.}}{-0.75 \text{ Cyl.}} = 6/6$ 15°

Left ... ... $6/60 \frac{-1.25 \text{ Sph.}}{-1.25 \text{ Cyl.}} = 6/24$ 70° (partial amblyopia)

She was found to have 14 prisms of hyperphoria. With the addition of suitable prisms (she had had correction without prisms before) she improved greatly. Within a month she was walking in the country and was beginning to tolerate the presence of crowds and traffic. The dragging in her left eye was relieved. She was unsuitable for training.

The Symptom-producing Phorias

Of all the phorias that produce suffering hyperphoria easily holds the field. This is explainable on the grounds that the binocular vision is quickly strained above the horizontal plane. No doubt this constitutes a big factor in the production of miner's nystagmus. The Bishop Harman test demonstrates this very prettily. In vertical latent deviation there is little latitude, and subconscious control rapidly gives place to central conscious effort. Where these two meet there also lies the evil of their plotting. It may be remarked that certain of the hyperphorias are symptomless, which is perfectly true, for they are of the marked inherent type.

Exophoria with weakness of convergence constitutes the second group of symptom-producing cases. Here the occupation of the sufferer influences the picture. I would quote the case of a very busy solicitor who was about to leave his practice on account of his inability to give long hours to the close study of his cases, owing entirely to this condition.

Ocular rivalry cases are a further variety, while cyclophoria enters the field not so much as a primary condition but as an unpleasant addition usually to hyperphoria. It is present as a result of overaction of the torsion group of muscles, and its discovery is a warning not to show undue optimism with regard to prognosis.

Heterophoria in Relation to Flying

It is from this world of our civilization that we are asked to select our pilots of aircraft. Many of the potential causes of disharmony have been met with by the men in their studies and duties upon the ground. The ledger clerk, the draughtsman, the engineer, the man who follows an occupation calling for monocular estimation—all these have encountered the strain for varying periods. It is remarkable how rare it is to discover gross defects. It says much for the strength and the latitude of the binocular function.

The extent of the various deviations allowed for acceptance in the Royal Air Force is the result of long study, but cannot even yet be said to have reached finality. The subject is exceedingly involved. There is, for example, the problem of false panoramic conception, which has produced itself for solution and upon which work is now being done. In the past it was considered that the exophoric had a tendency to stall his aircraft, while the esophoric would come down heavily upon his wheels. But it is not by any means a simple process of fitting theory to facts. When the landing of an aircraft is affected by the presence of heterophoria in the pilot it is more usual for a general mixing of high and low approaches to take place. The explanation lies in the fact that an error in landing of one type results in an overaction by way of correction at another attempt, and as there is no stable point of reference the whole affair becomes erratic.

The cases of real interest are always those of pilots who have flown successfully and then suddenly experience difficulty with the final stages of their approach. An approach which errs within so small a degree as plus or minus five feet can end in a nasty accident, usually by the propeller catching the ground and turning the aircraft over. Repetition of these events calls for a very careful examination of the binocular state. Here it is wise to tread with caution. The disharmonies that heterophoria may produce in air-pilotage are well known and proved, but on these very grounds a false jump to conclusions must be carefully avoided. Every discovered phoria with a history of flying trouble is not for certain the absolute root cause. Mental and physical fatigue; the first indication of some illness of slow onset; a growing dislike to flying; neurasthenia—all these must be eliminated. It usually happens that the pilot with a pure ocular muscle defect is anxious to return to the full duties of his branch, and resents the visual handicap which is confining him to the ground. It may be asked, How does such a state come about in a healthy man on active service? The answer is that heterophoria may occur as a result of prolonged fatigue from concentrated flying, from tropical asthenia, from malaria, or from head injury. It is not by any means a condition that tends to persist once the primary cause, illness or accident, has cleared up, but there undoubtedly are times when heterophoria remains as a genuine state and requires active attention. It is usually found that such a condition is of the inherent type, which has been kept within bounds in a body physically and mentally sound, but that the constitutional upheaval has left its mark in a potentially weak spot. It is necessary always to form an opinion as to the optimum time to attack the condition by exercises. And it is easy

to be led astray. Let me quote two examples where I carried out quite useless treatment. The first was many years ago. The case was that of an officer with much flying experience. He passed through my hands in a purely routine manner. He had heterophoria of the exophoric type, far outside the permitted limits. He underwent a course of training, and admittedly showed much improvement, coming now well within the necessary standards. He had had, however, no particular trouble with his flying. On his return to aircraft he discovered that he had to face the situation from a new angle, and that flying was not nearly so simple. He was thankful when, in due course, he relapsed into his old state, in which he was perfectly happy. He was one of those cases of inherent heterophoria with dominant muscular reception, and it was I who from inexperience produced disharmony. There was another case, that of an officer with heterophoria of the esophoric type. From his history and from the clinical findings there was every reason to undertake training. This went well—in fact, too well. He began to develop gastritis. The clouds broke and revealed his mental landscape. He had acquired a growing distaste for flying. His faulty judgement of distance no doubt added fuel to this, but his training had again prepared him for the air. Therefore he transferred his discomfort lower down. I speak of these cases merely to emphasize the fact that we must always be prepared to stumble over them.

Treatment

It is not proposed to enter into any details, but rather to stress certain points that are wont to be omitted. In the first place, symptomless heterophoria is far better left alone. To obtain the ideal in binocular vision is a very worthy aim, but the sleeping dog is better left asleep.

In symptom-producing cases no time is wasted that is spent on a complete survey of the patient's mental framework. With regard to the order of attack our greatest lever is the stereoscopic sense. The more years one passes in the study of these cases the more one is inclined to relegate a special pathway to the realm of stereoscopic appreciation which, if intact, is ready always to answer to the call of stimulation. To reach it, and to use it to the best advantage, it is essential first to develop equal macular reception and then to work for a space upon simple stereoscopic pictures. I am now experimenting with a rotating stereogram made for me by Messrs. Theodore Hamblin. The idea here is to widen and strengthen the stereoscopic sense through those angles of the perimetric arc that are not specifically employed in this fashion. Usually after two weeks the road is open for the use of the amblyoscope, or one of its near relations.

I feel that the worst service we can do to this promising bud on the tree of ophthalmology is to fret round it with exaggerated care. Let us confine its nomenclature to reasonable proportions and tear aside the veil of mystery that is being drawn about it. To-day ophthalmic surgeons are divided into two groups upon the merits of orthoptic treatment—namely, those who consider it most valuable and those who do not. Both are right. The reason why this division exists is because too little time is given to analysis and too much to empirical treatment. The great variety of binocular disharmonies that are arranged under the group heading of heterophoria are very real conditions, carrying with them often extreme suffering. The relief that can be given by orthoptic treatment in a great number of these cases is too well established for argument.

The Use of Prisms

Prisms for dealing with symptom-producing heterophoria should be limited to two conditions:

1. As a means of helping cases that have occurred as the result of cerebral concussion. Sometimes an eye-shade is necessary as a temporary measure where there is troublesome diplopia. This temporary ocular occlusion can do no harm to the binocular receptive rate in adults. If the prognosis is favourable this does not last much over a month. Then a *full prism correction* is valuable, and may be demanded in both horizontal and vertical directions, at one and the same time. Reductions (in strength) are usually necessary in periods of two to three months. Then after the *safe interval*, which should be six months, possibly longer, training can commence. During the preliminary stages of training the prisms should be retained in balanced proportion to the progress of the case. Then training will take the upper hand, and the prisms can be safely discarded. Should, however, a residual and intractive hyperphoria remain, a safe rule is to prescribe such prisms as will relieve one-half to two-thirds of the uncorrected deviation. The remainder is nearly always mastered by the muscle tone which has been imparted through training.

2. As a means of relieving an inherent or acquired symptom-producing hyperphoria. Sometimes prisms, or indeed operations, may become the only means of affording relief. In other cases most valuable results may be achieved by a combination of training and prism correction. Once more reductions are made in prism strength during treatment. If a complete cure is effected so much the better, but candidly I think this ideal is rarely attained in the higher deviations. Then, again, it may be necessary to take up part of the strain by prisms. Never is it wise to give full balance in this manner, as some *active* vertical adjustment helps to maintain stability. It is most important to distribute the prism power suitably between the two eyes. It is not enough to divide this equally.

Always should the greatest care be exercised in selecting that which can be cured or markedly benefited from that which cannot.

O. Devold, F. Batt, K. Closs, and J. Backer (*Norsk Mag. Laegevidensk.*, July, 1937, p. 899) undertook in 1934 and 1935 a goitre survey of the inland district of Modum in Norway. They examined 4,560 of the 11,000 inhabitants. The measurements of the thyroid followed Hunziker's technique, and in many cases iodine determinations of urine collected over twenty-four hours were undertaken. The iodine content of the drinking water and of the milk and eggs was also estimated, and the findings were compared with iodine analyses of urine, drinking-water, milk, and eggs in Oslo. It was found that the iodine content of the urine and drinking-water was considerably lower in Modum than in Oslo. In 65.6 per cent. of all the persons examined some enlargement of the thyroid was found, the figures for the two sexes being 57.1 per cent. for men and 73 per cent. for women. The largest number of goitres were found in school children; in women it was most common between the ages of 20 and 29 in farming areas. Only 58 per cent. of the whole industrial population showed signs of goitre, as compared with 72 per cent. of the farming population. One reason for this might be that in the farming districts only 15 per cent. of the population ate fish at least once a week, whereas 63.5 per cent. in industrial areas ate fish once weekly or more often. Parous women suffered more often and from larger goitres than did nulliparae. The incidence of goitre increased with decrease in the social status of the inhabitants, and incomplete forms of cretinism were found. The authors conclude that prophylactic medication with iodine-containing sodium chloride would be more rapidly effective than a revolution in agricultural menus to include more sea fish and provide seaweed as cattle fodder and manure.

THE ACTION OF MEAT EXTRACTS AND RELATED SUBSTANCES AS GASTRIC STIMULANTS IN MAN

BY

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Meat extracts cause a profuse secretion of gastric juice in animals, as was first shown in Pavlov's laboratory by Lobassoff (1897). He worked with dogs, equipped with a Pavlov pouch, and showed that the presence of Liebig's extract in the main stomach produced a marked secretion in the miniature stomach. Similar observations have since been made by numerous authors, all on Pavlov-pouch dogs or on comparable surgical preparations (Popielski, 1902; Gross, 1906; Lönnqvist, 1906; Orbeli, 1906; Kryszkowski, 1913; Zeliony and Sawitsch, 1911; Zeliony, 1913; Edkins and Tweedy, 1909; Ciminata, 1925 and 1926; Lim, Ivy, and McCarthy, 1925). But it does not appear to be accepted that similar effects are found in human beings. In many textbooks of physiology and nutrition statements such as the following are met with: "Commercial meat extracts are possibly of value as gastric stimulants."

Experimental Tests

A series of experiments on medical students has been carried out in order to establish this point. The technique of the fractional test meal introduced by Rehfuss (1914) was adopted. Bergeim, Rehfuss, and Hawk (1914) state that water is a strong gastric stimulant in humans, whereas Pavlov (1910) says that water was devoid of any stimulant action in his animal experiments. Apart from this no significant difference between the reaction of the human and the animal stomach has been recorded. It was not anticipated, therefore, that any marked difference in the reaction to meat extracts would be found.

The various test meals were given to the subject on different days and the responses compared. Ryle (1926) has shown that the gastric response of the individual to the same test meal on different days is essentially the same. This was confirmed in several subjects, and therefore any dissimilarity noted in the results from the substances examined is due to their varying stimulating power. The oatmeal gruel meal described by Ryle was used as the standard. The response to this is very constant for each subject. Using water as a standard is unsatisfactory, as the results vary greatly.

The following substances were examined. (1) Beef powder, prepared from dried lean beef. (2) Extracted beef: this is the residue of the meat after the water-soluble extracts have been removed in the manufacture of commercial meat extracts. (3) Direct extract: this is made by extracting meat completely with water and concentrating the resulting liquor. (4) The commercial meat extract known as bovril. (5) Sodium glutamate. This substance has a meaty taste and is used as a flavouring agent. It is not present in meat.

Technique

The tests were performed on a fasting stomach, in the morning before breakfast or in the afternoon after an early breakfast. If the stomach was found to contain more than a trace of food the test was postponed. After intubation the residual contents were removed and the stomach washed out with 200–300 c.cm. of warm water and the test meal administered. Samples were withdrawn as soon as the meal was finished, and subsequently at fifteen-minute intervals until the stomach was empty. In some tests warm water slightly less in volume than the usual bulk of the meal was given, and the substance under examination administered in a concentrated solution through the stomach tube. In this way any stimulation due to the taste of the extracts was avoided. There were no significant differences in the response obtained after administration of the extract in this manner and when the subject was allowed to taste the material.

The following determinations were made on each sample. The free hydrochloric acid and the total acid, and the pepsin, were estimated. In titrating the samples for the estimation of the free acid, *p*-dimethyl-amino-azobenzene, Töpfer's reagent (1894), mixed with half of its weight of methylene-blue, was used as the indicator. The mixed indicator exhibits a magenta colour on the acid side of the change point, a bright green colour on the alkaline side, and a neutral shade of pale grey at *p*H 2.9. The total acid was estimated by titrating to the change point of phenolphthalein. Pepsin was estimated by a modification of Mett's method. The tubes were prepared by the method of Christiansen (1912), and successive batches standardized before use against the preceding batch. 0.5 c.cm. of the unfiltered sample was mixed with 9.5 c.cm. of a phosphate buffer of *p*H 6.8 left overnight, and filtered to remove the mucus and protein matter as recommended by Ege (1924). The *p*H of the filtered material was adjusted to 1.2–1.3 by the addition of concentrated hydrochloric solution. The resulting solution was incubated with the Mett tubes at 35° C. for a varying period, depending on the strength of the pepsin solution. Weak solutions were left for several days. All calculations were based on the length digested in twenty-four hours. Four measurements were made on each sample. According to Patterson and Adler (1932) the pepsin is proportional to the cube of the length of fibrin digested. This measure was used in the present test. The results are shown in Tables I, II, and III.

Results

Table I contains the average HCl values as produced by the various substances. The figures indicate cubic centimetres of decinormal HCl. In Table II are given the

TABLE I.—*Table of Average HCl Values.*

	Resting juice	15 min.	30 min.	45 min.	60 min.	75 min.	90 min.
Gruel ..	0	0.6	13.4	30.0	17.3	18.5	13.0
Beef powder	2	1.0	11.5	24.5	26.5	37.75	32.0
Extracted beef ..	0	0	5.0	10.6	14.2	10.8	16.4
Direct extract ..	0.1	1.0	11.0	29.0	18.0	20.0	8.0
Bovril ..	0	1.0	14.0	37.0	49.0	—	—
Sodium glutamate	0	0	7.0	—	—	—	—

TABLE II.—*Table of Emptying Times of Stomach*

	Average	Expressed as percentage of gruel
Gruel	97 minutes	100
Beef powder	107 ,,	123.6
Extracted beef	84 ,,	96.5
Direct extract	92 ,,	104
Bovril	63 ,,	74.2
Sodium glutamate	36 ,,	44.6

figures for the emptying times of the stomach. In the first column the average figures are shown, and in the second column the figures are expressed as percentages. The emptying time with gruel was called 100 per cent. in each separate experiment. For each individual the time taken for the stomach to empty with the different substances used was expressed as a percentage of that taken with gruel. The results were averaged, and, as will be seen, are not quite the same as the average times. In Table III the average pepsin values are given.

TABLE III.—*Table of Average Pepsin Values*

	Resting juice	15 min.	30 min.	45 min.	60 min.	75 min	90 min	105min.
Gruel ..	0.43	8.3	9.5	9.2	11.3	35.3	11.4	—
Beef powder ..	1.03	1.2	8.8	23.9	30.0	63.4	82.3	42.5
Extracted beef ..	0.5	1.75	7.7	7.8	18.4	7.1	15.8	—
Direct extract ..	0.7	0.17	3.75	4.7	6.9	10.0	5.3	—
Bovril ..	0.15	2.3	7.1	8.7	19.7	—	—	—
Sodium glutamate ..	0.025	1.1	24.2	—	—	—	—	—

Beef powder, which represents whole meat, produces a marked secretion of HCl over a long period. The watery extract is not so powerful, producing a secretion not much greater than that of gruel. But the extracted beef is even less efficient. The most effective stimulant is bovril. Sodium glutamate leaves the stomach so quickly that its effect on HCl secretion is negligible. Beef powder delays the emptying time considerably as compared with gruel. Extracted beef and direct extract are not significantly different in their emptying times from that of gruel. Bovril shortens the time by one-third. Sodium glutamate makes the stomach empty very quickly. The extracted beef produced a very marked flow of mucus; in one case this was so great as to block the stomach tube.

The secretion of pepsin is high when beef powder is administered. Of the substances examined that was the only one which stimulated the gastric mucosa to secrete pepsin. The other substances do not differ greatly from one another in their effect on pepsin secretion, sodium glutamate being a possible exception.

Commentary

In conclusion it can be stated that meat extracts act as stimulants of the gastric mucosa. The gastric secretion so produced is normal in HCl content. Bovril produces a marked stimulation of the gastric mucosa with a stimulation of HCl which at sixty minutes after administration is nearly three times greater than that produced by gruel. It reduces the emptying time by approximately 30 per cent. as compared with gruel. Sodium glutamate causes such rapid emptying of the stomach that it is impossible to draw any definite conclusions as to its effect on gastric secretion.

These results have some clinical significance. Following acute illnesses there is commonly a depression of gastric secretion. The gastric juice is poor in HCl, but there is rarely any deficiency of pepsin. In such cases meat extracts, by stimulating the mucosa to an increased flow of HCl, restore the gastric juice to normal.

Conclusions

1. Meat extracts have a stimulant action on the gastric mucosa.

2. The water-soluble fraction of meat is almost as efficient in stimulating a flow of HCl as whole meat.

3. The secretion of HCl is greater with bovril than with any other substance examined, including whole meat.

4. Whole meat in the form of beef powder is the only substance examined which stimulated a flow of pepsin.

5. The emptying time of the stomach is less with meat extracts than with whole meat. Bovril reduces the time by 60 per cent. as compared with beef powder.

6. Sodium glutamate has little or no stimulant action. The stomach empties very rapidly when this substance is given.

I have pleasure in acknowledging the assistance of the medical students of King's College who were good enough to act as subjects. I am very grateful to Dr. O. G. Edholm, who has worked out the tables and has also prepared the paper for the press.

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The annual report for 1936 of the Health Department of the municipality of Singapore records a continued heavy incidence of enteric fever. During the year 461 cases, including six of paratyphoid, were notified, compared with 424 in 1935. Of these cases, eighty-two were in school children. The notifications were more or less evenly spaced over the months, and there was no localized outbreak. The spread of infection is attributed to carriers among those engaged in preparing food sold by hawkers in the streets, and there is strong presumptive evidence that the hawking of ice-cream and iced drinks is often responsible. More arbitrary powers for dealing with food hawkers have recently been granted, but their full application will not be feasible until the passing of the new Food and Drugs Regulations. With regard to malaria, the report states that anti-mosquito work has been continued on a large scale. The chief undertaking during the year was the cleaning up of the breeding grounds of *A. sundaicus* in three river basins, following a sharp outbreak of malaria in the latter part of 1935. The greater part of the breeding grounds was dissipated by breaking down the containing bunds of numerous fish ponds, thus admitting tidal water. Those still out of reach of the tide were either filled in with debris from the demolished bunds or were connected together by deep drains, with a discharge to bigger drains protected by tidal flaps at their exits in the bunds. Nearly 200 fish ponds and over 500 vegetable ponds were treated by these methods.

TREATMENT OF SPASTIC PARALYSIS

BY

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The system I propose to outline was developed more than twenty years ago, during the war in the course of work done on soldiers convalescent from cerebrospinal meningitis. It was developed quite empirically, and the theoretical principles underlying the method have only recently been applied. Since the war only the more severe spastic cases—for example, those suffering from cerebral diplegia or Little's disease—have been treated. Recently, however, the work has extended to less spastic cases, such as post-thrombotic paralyses.

Aetiology

The causes of spastic paralysis are many. They include birth injury; encephalitis following the acute specific fevers, such as diphtheria, typhoid, or poliomyelitis; syphilis; and infantile cerebral haemorrhage. Arrest of growth or failure of development of the cerebral cortex is responsible for most cases. There are, too, other obscure causes. In any event the result is damage to the cerebral cortex of a greater or less degree, and this is manifested by motor, sensory, and psychic disturbances. Many of the patients seem to be idiots. Over 50 per cent. of our series of 200 cases gave this impression because of dribbling of saliva and inability to control the facial muscles and to express themselves, but after treatment only four have had to be rejected as true idiots (c.f. case reports). Many patients who were apparent idiots showed quite normal intelligence after the spastic condition had been cured.

Sensory Effects

In spastic paralysis the extent of the associated sensory disturbance is not generally realized. It manifests itself, however, in various ways. There is loss of appreciation of the relative intensity of different stimuli—for example, fine differences of heat and cold and touch are imperceptible. Appreciation of spatial relationships may be lost, the patient being unable to identify the precise part stimulated (tactile localization) or to discriminate between two points of stimulation (tactile discrimination). Some interference with the interpretation of proprioceptive impulses, especially in the smaller joints, may be noted. The muscle spasm itself upsets the normal proprioceptive impulses from both muscles and joints. Astereognosis may also be present.

The importance of these sensory disturbances must always be borne in mind. All the phenomena of incoordination are for the most part of sensory origin. It follows that educative therapy must also have a sensory basis. The brain must literally be flooded with a sequence of properly regulated sensory impulses.

Motor Disturbances

There is seldom any loss of the impulse to make a movement, but the muscle spasm and sensory impairment cause gross clumsiness.

The increase in tone may be localized to one group of muscles, but is more usually general. Normal tendon reflexes are exaggerated, and the Babinski and Oppenheimer reflexes and Gordon's reflex and ankle clonus may develop. Receptive areas, stimulation of which gives rise to spasm of the spastic muscles, are situated at the distal parts of the extremities. Any stimulation of these areas in the course of routine treatment must be avoided.

The muscles of the spinal or decerebrate animal, and usually all spastic muscles, respond to a stretch with an increase in tone. This so-called stretch reflex, due to the presence of stretch receptors in the muscle and lying parallel with the muscle fibres, is especially marked in the physiological extensor group of muscles. Because of this reflex response any attempt to move a joint when the muscle tonus is still increased results necessarily in a further increase in the muscle spasm. This must be avoided; the muscle groups should first be inhibited (*vide infra*) before any movements involving stretching are undertaken.

Ataxia in this condition is due to both sensory and motor involvement; it is often marked and of a cerebellar type. There is also decomposition of movement, any action being carried out as if by numbers; thus in trying to bring the heel on to the opposite knee while lying in bed the heel is dragged along until it reaches the knee, raised to the proper height, adducted, and finally placed on the knee. Asynergia is due to the lack of co-ordination between antagonists and agonists. If the patient attempts to flex the elbow the triceps which antagonizes the movement may go into tonic contraction. Dysmetria is shown in that the force employed in any action is ill adapted to the aim of the movement; the hand usually shoots past an object which is to be picked up. Occasionally the spastic paralysis may be associated with some flaccid paralysis, usually of the neck muscles (Fulton, *Arch. Neurol. Psychiat.*, 1934, **31**, 211).

Treatment resolves itself into inhibition of the motor spasm, and intensive sensory, and to a less extent motor, education. The motor education must follow the sensory. The patient may be likened to a baby. There is as yet no appreciable sensory development of the cortex, and so a sensory education together with the inhibition of spasm must precede motor re-education. The simplest actions are taught first and accessory movements added until the finer and more complex muscular efforts are mastered. All the harmful phenomena of the disease are progressive. The exaggerated muscle tone increases, leading finally to contractures and deformities of joints. Sensation becomes more and more impaired, and psychological changes follow in a vicious circle. Thus it is of extreme importance that the patient should begin treatment early.

General Treatment

The general health is supervised and adequate food and rest provided. The patients are told to rest from 2 p.m. to 4 p.m. and to get plenty of sleep at night. If of school age they do not attend school, but are given lessons at home by the mother or else take a correspondence course. School is forbidden because the spasticity is likely to increase in front of others: the awkwardness of their movements often excites jeers from other school mates; they become nervous, their awkwardness increases, and they suffer psychologically. A further point is that the children are often backward and do not get the same benefit from teaching as the normal members of the class. They progress better with individual tuition. The time taken for treatment in the clinics varies from half an hour to an hour each day, depending on the severity of the case.

It should be noted at this point that we do not advise certain forms of therapy for the following reasons: electrotherapy, since it causes muscular contraction and

heightened tone; massage, because it increases the tone of spastic muscles, especially if applied to the receptive areas; and also passive and active movements of the joints of the extremities, for by stimulating the stretch reflex they too cause heightened tone of the muscles. Splinting and bracing is also avoided as much as possible. It is harmful in the extensor group of muscles and the more distal muscle groups, but at times may be used advantageously in inhibiting spasm of a proximal group of muscles, usually flexors—for example, the hamstrings. In these proximal flexor groups the lengthening reaction is elicited and is not harmful. Hydrotherapy is valuable, but the cold douche must be avoided, since it increases tone.

Inhibition of Muscular Spasm

The first essential of treatment is to inhibit the muscular spasm. A warm bath at a temperature of 37° C. is given at the start of treatment. This is a necessary preliminary in any form of education of spastic muscles, and it produces marked relaxation of the spastic muscles. The patient is asked to relax and breathe deeply. At the same time the affected muscles are gently manipulated. This stimulus is a powerful inhibitor of muscle tone. It is important to remember that the most proximal muscle groups of a limb which is in spasm (the deltoid and pectoralis major muscles, etc., in the upper extremity) must be inhibited first; thus the receptive fields are avoided. The muscle groups are treated proximo-distally in succession until they relax, the manipulation being as gentle as possible, especially when the distal receptive fields are approached.

These gentle stimuli cause a state of inhibition of the spasm and what is called the inhibitory after-period develops. This period is gradually extended as treatment proceeds, and generally becomes permanent—that is, conditioned. During this inhibitory phase the muscles may be stretched without evoking the stretch reflexes. The attendant then passively moves the joints, starting very gently with the most proximal joint. At the first sign of return of tone the muscle is again inhibited and the joint again put through a complete range of movement. These movements must be very slow and the patient's attention should be concentrated on them, the attendant saying, "I am abducting the shoulder," or, "I am adducting the shoulder." By this "attention training" the proprioceptive sensations are reinforced and sensory re-education takes place. "The patient's mind must be made to follow the movements of the joints and be educated by these movements. . . . The extremities educate the brain." New nerve pathways are opened up and proprioceptive sensation will slowly return. It is essential, however, that with each passive movement the attendant secures the absolute mental co-operation of the patient.

This routine is slow. Advanced cases may need many weeks of inhibition of the more proximal muscles before the distal groups can be treated and the smaller joints moved without exciting the stretch reflex response. However, in time this can be done, and then sensory education of the more distal joints may be undertaken. Until sensory education is complete nothing but the simplest active movements are permitted. The patient and the parents are taught these principles, and may apply them at all times at home, fatigue only being avoided.

As in Pavlov's experiments, we find that inhibition will readily spread. In patients with dribbling of saliva and incontinence of urine and faeces, if the muscles of the face and neck are inhibited and dribbling ceases it is found that often the bladder and rectum will also be controlled. It is always easier to inhibit successive groups of muscles. Speech returns to some degree without any special training. With continued inhibition and sensory training the muscles develop a state of conditioned inhibition and the spasm disappears. This training may take many years, but during the whole of this time special movements are taught. The first acts taught are those essential to washing, feeding, and dressing. Later on the finer movements such as writing and playing the piano may be acquired.

Special Exercises

Quite apart from the ordinary relaxation exercises, in which the patient is asked to relax or to take a deep breath and relax, deep breathing and sighing exercises are helpful. In another exercise the muscles of the limb are loosely hunched up and released, starting at the shoulder girdle and proceeding down to the fingers. If when the fingers are being moved the muscles of the forearm become spastic the patient is told to relax and the dorsum of the hand is percussed lightly with the attendant's fingers.

The lack of balance, very noticeable in this condition, is to some degree overcome if the attendant can induce the patient to recognize contact between the sole of the foot and the substance of the ground or floor. For this reason in all walking exercises coir matting is used, so that the proprioceptive stimuli will be reinforced by increased cutaneous impulses. Stability is obtained by teaching the patients to climb steps. The weight of the body is forced on to each foot alternately with the patients concentrating all their attention on each movement. Long perseverance in this step-climbing will eventually result in the linking up of the physical balance and mental control. Specially constructed steps covered with coir matting allow the attendant to supervise every movement and give the patient greater confidence. A sand trough is used later, and the greater effort required to keep the balance in the sand further reinforces the sensory impulses and slowly greater control is developed. It is essential to train the patient to get the heel down on the ground, and this is done by the attendant holding each heel. The patient is taught also to stand firmly on both feet and to bend and straighten the legs. The individual control of movements of both the ball and heel of the foot must be taught, and such teaching is accelerated by these methods of proprioceptive reinforcement.

Exercises in Co-ordination

The patient, lying down, is asked to place the heel of one foot on the opposite knee, guided by the assistant if necessary. The movement must be slow and purposive, but the patient must remain relaxed. The child is directed to place his foot in the assistant's hand, which is moved to and from various positions until practically every muscle in the lower extremity has been brought into play. Similar controlled movements are practised with the upper limb. No rhythmic movements or quick cyclic movements are ever attempted.

Often a patient has the appearance of idiocy because the muscles which control the action of swallowing are spastic. Saliva continually dribbles from the mouth, and speech is defective or absent. Early education of these muscles is imperative. Inhibition of spasm is effected, and a fluid pleasant to the palate of the patient must be given at regular intervals in very small doses; sweetened fruit drinks are particularly useful. An effort is made to swallow. Every case has responded to this method. Incontinence of urine and faeces tend to clear up at the same time, due to the spread of conditioned inhibition.

The muscles controlling the movements of the tongue must also be subjected to special exercises. The patient is trained to protrude the tongue, and also to curve it upwards towards the nose and downwards towards the chin. The movement towards the nose is the hardest to perform. All the sounds in which the letters "t," "d," "n," and "w" are involved are the most difficult to utter, and should be concentrated upon. The patient is also asked to point the tongue to either side of the mouth. The child is not asked to put all his mental effort into the movement but is encouraged to relax: the movements are assisted by the attendant, and are attempted only after relaxation of muscle tone has been attained.

A spasm of the muscles of the neck sometimes interferes with the mobility of the lower jaw. It may be noticed that upon waking speech is quite good before full consciousness is established, but immediately consciousness is restored the power of speech is lost. To combat this it is necessary to bring the overcharged muscles to a normal degree of tonicity by tongue exercises. Facilitation is assisted by the continued slow repetition of verses of poetry.

In the finer movements of the small joints of the hand there is often some loss of power. After relaxation of the proximal muscles has been obtained the patient is encouraged to concentrate on mastering these finer movements. When the child first starts to write his hand should be guided by the attendant. Exercises in which the child has become proficient are not repeated each day; attention is centred on the actions he cannot perform. At intervals of two weeks, however, the full routine of exercises is carried through.

Long hours of sleep are necessary, and the child should never be disturbed from his rest, because during sleep there is inhibition of the spasm. This is in accord with Pavlov's theory of sleep. Sometimes there is sleeplessness due to painful spasm. The child may make while sleeping an involuntary movement, which becomes immediately a painful spasm which awakens him. The parents must be trained gently to manipulate such spasms, so that the patient sinks back into a quiet sleep.

Treatment of Fixed Deformities

Most fixed deformities will yield to stretching by special apparatus. Inhibition of spasm must be effected first, and the time of stretching must not exceed half an hour each day and should never cause pain. Some few cases of fixed deformity may need tenotomy (only three in our series of 370 patients). No patient under treatment has ever developed deformity. It is therefore essential to place patients under treatment early. The first manifestations of disease occur at 8 months of age, and the first sign is difficulty in abducting the legs. Treatment should be begun at this early age if possible.

Special surgical boots may have to be worn to combat inversion and eversion deformities of the feet. The toe-caps of the boots are removed to allow free movement of the smaller joints, and to stop spasm consequent on compression of the distal receptive areas. Only the heel of the boot should be fully built up, otherwise there will be some interference with the freedom of toe movement.

Other Forms of Treatment

Ramisectomy has now no part in the treatment of spastic paralysis. There is no sympathetic nervous supply to skeletal muscle other than that to the blood vessels in the muscles (Hinsey, *Physiol. Rev.*, 1934, **14**, 562). In our experience ramisectomy is often harmful, the preliminary flaccidity of the muscles lasting only for a short period. Later the muscles regain their spasticity, and by this time the general condition has often deteriorated. Retention or other disturbances of micturition may follow.

Stoffel's operation of partial section of the motor nerves to a group of muscles, which has been applied especially to the obturator nerve, results at first in a dramatic reduction in muscle tone. Later on, however, the paralysed part of the muscle becomes fibrosed and retracts, spasticity returns, and the proprioceptive muscle sensation is grossly altered. The muscles are even more incoordinate and spastic than before.

The usual re-education by massage and remedial exercises seems to us inadequate. It is only the extreme attention to detail and incessant application that leads to results such as have been obtained in the Kenny clinics. The ideals of treatment of each form of educational therapy are the same—that is, relaxation of the spasm and co-ordinative exercises—but it is in the fulfilling of this desire and in the strict application of detail that the usual routine breaks down. Several clinics, notably in America and England, are striving after the ideal, but they do not go quite far enough and their methods are not sufficiently intensive. For example, one method advocates the training of co-ordination by swimming exercises in a warm pool. The warmth inhibits the spasm, and the water takes the weight off the limb and the stretch reflex is not evoked so easily. This is quite true, but the swimming is an active form of motor education. The effort of movement causes an increase in the central excitatory state and the muscles regain their hypertonicity. Education of the spastic child must start at the simplest actions and gradually progress, just as does a baby. Rhythmic exercises and cycling exercises also start at too advanced a stage, and so defeat their object. A spastic patient may be taught in a short time to ride a bicycle and yet be totally incoordinate in using the lower limbs. Of course a degree of progress is made and good work is being done in these few interested clinics, but elsewhere these patients are often looked upon as hopeless cases.

Illustrative Case Reports

Case 1.—A child, aged 8, of Townsville, Queensland, had had spastic paralysis from birth; labour was prolonged, and the infant very cyanosed. Had orthodox remedial therapy treatment from the age of 1 until the age of 8. On examination in March, 1933, he could not stand up alone, walked on the toes with his feet wide apart, and continuously fell. He was unable to get up after falling. There was incontinence of urine and faeces, and saliva dribbled from the mouth. His speech was explosive, and he could not feed, wash, nor dress himself. He appeared to be subnormal mentally. Contractions of the tendo Achilles and muscles of shoulder girdle were noted, and there was flaccidity of wrists and hands.

By November, 1934, the child was almost normal. He could walk normally, even when blindfolded. Incontinence of urine and faeces was no longer present, and there was no dribbling saliva. He could wash, dress, and clothe himself, and could use a pencil in writing and speak normally.

Case 2.—A youth, aged 18, of Townsville, Queensland, was spastic from birth. On examination in July, 1935, both arms and legs were found to be affected. He could walk, but only with the typical difficult scissors gait. When he sat on a chair there was a spasm of the hamstring muscles, the lower legs would coil underneath the seat, and he would fall forward on his face. He could feed and dress himself only with great difficulty, and saliva dribbled from his mouth.

On re-examination in January, 1937, after eighteen months' treatment, he could walk normally and control his facial

muscles. He could do general work and even fine work with his hands. He now earns his livelihood assembling wireless sets.

Case 3.—A girl, aged 7, of Sydney, New South Wales, whose spasticity was noticed at the age of 4 months, was flaccid until a movement was attempted, and then there was a tremendous explosion of incoordinate muscular energy. Her hands would be retracted to the back of her neck. Oculogyral spasm was present, dribbling of saliva, and incontinence of urine and faeces. She was thought mentally subnormal, but had treatment from the age of 4 months up to 7 years, when she was given up and regarded as hopeless. She was then treated privately for the following three years, during which time she learnt to read and write, and to sing and play the piano, and could walk with the aid of a stick. Treatment then ceased for ten years. Has had six months' further treatment in 1936, subsequent to the opening of a clinic in Brisbane, and can now walk without the use of a stick.

Case 4.—A child, aged 4, of Brisbane, had paralysis of a mixed flaccid and spastic type from birth. There was marked spasticity of the legs, but flaccidity of neck and arms. This patient was unable to lift his head from his chest, had incontinence of urine and dribbling of saliva, and could not speak. Though pronounced an idiot, he was admitted to the Brisbane clinic in June, 1935.

On re-examination in January, 1937, he could hold his head up normally, and was beginning to speak and feed himself. Fixed contractions of the hamstrings were being reduced gradually. The incontinence of urine and dribbling of saliva had stopped, and intelligence was quite good. Treatment has been continued.

Case 5.—A patient from Townsville had marked astereognosis associated with spasticity. In 1934 the patient had sustained severe head injury, for which decompression was performed. A flaccid paralysis of the right leg cleared up, leaving spastic paralysis of the right face and arm associated with extreme astereognosis. He could not discriminate between a golf ball and a small nut placed in the hand. He had standard remedial therapy for one year without any improvement, but recovered completely after clinic treatment for twelve months.

Case 6.—A child, aged 18 months, had been spastic from birth; the prognosis was regarded as hopeless, and spastic contractions of the arms and legs were already developing in spite of treatment. Dribbling of saliva was present. Babinski responses were present with ankle clonus on both sides. Treatment for twelve months resulted in marked improvement. The reflexes are now normal, there is no dribbling of saliva, and the patient is much brighter mentally. We believe that this child will be normal by the age of 7.

Results of Treatment

The patients we have dealt with on the lines indicated above have been the very worst spastic cases. Even the very worst patients, who on examination appeared to be idiots with marked spastic contractures, have sometimes proved to be of quite normal intelligence and capable of the finest co-ordinative movements such as those involved in dancing and piano playing. Two hundred cases have been treated. Many of them are the rejects from all over the world, and at the beginning of the work only those cases that were pronounced hopeless by a medical committee were treated. No published results we know of can compare with those achieved in Australia.

The treatment requires, above all, energy, enthusiasm, and the maintenance of a cheerful outlook. These factors are best achieved where trained persons are working together, competition and similarity of ideas sustaining the mutual interest. It is found in the clinics that two years' training in both flaccid and spastic types of paralysis is essential before real proficiency is attained. At the end of this time the trainees are examined, and if successful are granted the clinic diploma.

The notes on special exercises have been taken from Elizabeth Kenny's *Infantile Paralysis and Cerebral Diplega* (1937, Sydney).

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Clinical Memoranda

Ileo-caecal Volvulus in a Mental Patient

It is well known that anomalies in the later stages of intestinal development give rise to conditions in the right side of the abdomen which may lead in later life to a variety of morbid consequences (Waugh, 1920). According to Dott (1923), normal fixation and downward elongation of the ascending colon occurs during the third stage of rotation of the gut, at or about the twelfth week of intra-uterine life. In a proportion of cases, however, deficient fixation and excessive downward elongation of the caecum and ascending colon takes place at this stage of development, giving rise to a mobile colon so that the caecum may occupy one of many abnormal situations. The case reported is an instance of acute obstruction developing as the result of an unduly mobile caecum (Marnoch, 1913–14).

CASE RECORD

The patient was a single woman, aged 40, of poor physique and nutrition, and with a history of pulmonary tuberculosis since adolescence, who was admitted to the Murray Royal Mental Hospital on April 19, 1936, in a state of acute agitated depression.

In December, 1936, as a result of refusal of food, she began to lose weight rapidly, and had to be tube-fed twice daily. On January 21, 1937, during the epidemic, she developed influenza, with a subsequent lighting up of the old tuberculous pulmonary lesion, and from then until the date of her death she ran a remittent pyrexia. During this period she became markedly emaciated.

At 6.30 a.m. on February 16, on returning to bed from stool, she complained of severe pain in the lower abdomen. On examination the abdomen was tender and tense, and there was a large tympanitic swelling occupying the right iliac fossa and hypogastrium, and extending almost to the umbilicus. The patient was restless and obviously in great pain. She collapsed and died at 11.55 a.m. Although a tentative diagnosis of acute intestinal obstruction was made, it was considered that operative intervention was not justified on account of the patient's extreme weakness and acute phthisis.

Post-mortem Findings.—On opening the abdomen the grossly distended caecum, dark purple in colour but still lustrous, filled the lower right portion and extended well over to the left side. The volvulus was reduced with great difficulty, and it was then found that the lowest four feet of ileum had passed anterior to the displaced caecum and become incarcerated in the pelvis. This portion of small intestine was, like the caecum, intensely congested and gangrenous. The mesentery of the lower ileum was continued on to the caecum and ascending colon. There were several old tuberculous scars in the lower ileum, one of which, one inch proximal to the affected bowel, formed an annular cicatrix which considerably narrowed the lumen. The large intestine distal to the volvulus was collapsed, and there was a notable absence of intra-abdominal fat. Both lungs were extensively affected by tuberculosis, but the other viscera showed no evidence of disease.

It is probable that the events leading to the condi occurred in the following sequence. Mobilization

intestine in this case was no doubt exaggerated by the somewhat rapid absorption of fat from starvation and phthisis. When the patient got out of bed the whole ascending colon probably sagged, until, together with the caecum, it assumed the shape of the letter J. It is then easy to imagine how a loaded or distended ileum might be forced down into the pelvis by the effort of straining at stool. By reason of the attachment of the abnormal mesentery, the downward displacement could take place only anterior to the caecum, and thus produce a volvulus.

We wish to thank Dr. W. D. Chambers, physician-superintendent, Murray Royal, Perth, for his kind permission to publish this case.

James Valentine, M.B., Ch.B., D.P.M.
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James Murray's Royal Mental Hospital, Perth. Assistant Physicians.

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An Unusual Cause of Volkmann's Ischaemic Contracture

A boy, aged 8, while playing fell on a nail, which penetrated the volar aspect of the right forearm just below its middle; a dressing was applied at his home, but on the fourth day the temperature rose and pus exuded from the puncture. He was taken to the surgical out-patient department, where anti-tetanus serum was given and the wound cleaned. He attended for dressings regularly for fourteen days, by which time the wound had closed. It was observed, however, that he was developing a contracture of the fingers; consequently he was transferred to the section for orthopaedics.



Showing extension of fingers on flexion of wrist; also scar of puncture.

Condition on Examination

There was no evidence of wasting in the forearm. A small closed bluish spot with a slight halo around it was seen on the ventral aspect of the forearm. This spot, with about one inch of skin around it, was attached to the underlying deep fascia. The muscles in the middle third of the forearm around the wound were found to be indurated. Sensations were not diminished, and pronation and supination were not affected. The hand showed a typical deformity of Volkmann's ischaemic contracture. On attempting to extend the wrist the metacarpo-phalangeal joints became dorsiflexed, whilst the interphalangeal joints became flexed and resisted forcible extension.

The patient was admitted to the wards, and after attempts at manual correction it was found advisable to intevene surgically, and the operation of stripping the flexor muscles from the internal epicondyle of the humerus was performed. The incision was extended further downwards to the site of the scar.

Operation

Macroscopically the muscles at their origin looked healthy; lower down in the middle third the deep fascia was fibrosed and hard, a specimen of this being removed. The muscles underneath looked brown and oedematous, and a piece was taken. The hard epitrochlear gland found in the upper part of incision was also removed, and all three specimens were sent for miscroscopy. The fingers were then stretched and were individually placed on finger-splints. The whole hand was now hyperextended and placed on a cock-up splint. The wound healed by first intention. After regular massage and stretching the patient was discharged one month later and attended as an out-patient. The splints were removed a month later, the hand having regained its normal movements. He was seen regularly once a week for three months, when he was discharged as cured.

The specimens taken were examined by our chief pathologist, Dr. H. Barsouma, who reported:

"1. *Deep Fascia.*—This is thickened, as also are its blood vessels. There is a fair amount of round-cell infiltration (plasma cells and lymphocytes), especially perivascular in distribution.

"2. *Muscle.*—There is a definite increase in the fibrous tissue between the muscle bundles, with a slight amount of small round-cell infiltration. The muscle fibres themselves show a certain degree of hyaline change.

"3. *Lymph Gland.*—This reveals marked fibrosis, especially in the central part; the periphery shows the lymph follicles with their germ centres practically unaffected."

Conclusion

Volkmann's ischaemic contracture is nearly always due to a fracture round about the elbow-joint, the determining factor being obstruction of the venous return due to either extrinsic or intrinsic causes—extrinsic such as tight bandaging, and intrinsic such as pressure by blood clot. Brooks and Jepson's work shows the intrinsic cause due to a combination of events: venous obstruction, serum exudation, and swelling of soft structures pressing on vessels and nerves. The unusual origin of the case is a subject for discussion. Brooks and Jepson's theory can be explained in such a case. The sepsis which had set in, the outlet being small, had produced swelling and induration of the soft parts, causing pressure on vessels and nerves, and venous obstruction. Sir Robert Jones, however, has declared that ischaemic contracture is due to acute venous obstruction and does not occur where the obstruction is gradual. Here also the original puncture might have injured the vein and produced clotting, which extended to the main vein, causing acute venous obstruction.

The interest of this case presents itself not only in the most unusual cause but also from the medico-legal point, for it shows that ischaemic contracture may take place in a forearm irrespective of fracture or compression by bandage or splint.

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Reviews

INTERRELATION OF DIGESTION AND HEALTH

Digestion and Health. By Walter B. Cannon. (Pp. 160; 14 figures. 6s. net.) London: Martin Secker and Warburg. 1937.

Professor W. B. Cannon, who has contributed greatly to the better understanding of the physiology of digestion, has had the happy idea of rewriting in popular form the lectures which he gave at the centenary celebrations of Beaumont's classical work, and publishing them in an interesting book on the interrelation of digestion and health. William Beaumont, a Connecticut Yankee serving as a United States Army surgeon, persuaded a former patient to come and serve him. This man had had a severe gunshot wound of the left upper abdomen, resulting in a gastric fistula. During the years of their relationship as master and man, physician and patient, Beaumont made a series of observations on the gastric secretion of his patient under varying conditions of health and illness, temperance and intemperance, placidity and anger, which laid the foundation of a sound knowledge of stomach digestion. Since his student days Professor Cannon has been interested in, and prosecuted researches into, the physiology of digestion, and has particularly contributed to the application of *x* rays to the understanding of digestive problems. His Beaumont Lectures on "Some Modern Extensions of Beaumont's Studies on Alexis St. Martin" contained an account of these and related researches, and are now submitted in a more popular form in the book under review.

Beaumont's early observations showed that the sight or smell of appetizing food not only caused the mouth to water but brought about a flow of gastric juice as well. Hunger is associated in our minds with an ache or gnawing pain referred to the lower chest region. It is not a general sensation; it does not even increase progressively if one goes without food; hunger strikers cease to feel hungry after a few days. It is a pang which has been shown to synchronize with contractions of the stomach. These contractions, more or less rhythmical, are influenced in various ways. They are stilled by taking of food. Sleep does not check them; indeed, they may interfere with sleep and produce restlessness. Chewing movements will stop hunger pangs. Not only swallowing, but great emotional excitement arrests the digestive functions, checking the muscle grippings associated with hunger. Smoking weakens and may completely stop them; strong alcoholic beverages have the same effect. Vigorous exercise inhibits them, probably by contraction of the abdominal wall such as follows tightening the belt. Why the stomach when empty contracts with so much greater power than when engaged in digesting a meal is probably associated with the blood content of glucose; the injection of insulin, which is succeeded by a fall of blood sugar, is a valuable stimulus to hunger in patients who are enfeebled or ill. Thirst appears to be a different phenomenon, though it can be even more insistent, more intense than hunger, and lead more rapidly to distress and death. The feature of thirst which practically all observers agree upon is the unpleasant sensation of dryness in the mouth and throat. Cannon's theory is that when the water supply of the body begins to run low from dry external conditions, excessive sweating, profuse diarrhoea, the salivary glands, because they require water to produce saliva, are particularly affected. If they fail to pour out their product in sufficient amount the back of the mouth becomes dry and sticky, and thirst is experienced. The theory is substantiated by experiments showing that all methods used to lessen the water content of the body—sweating, haemorrhage, and avoidance of drinking—were accompanied by a reduced output of saliva.

Digestion is of course essential for the maintenance of bodily vigour. Ordinarily we are only vaguely aware of the processes of digestion occurring inside us. When well supported and permitted to have their own way the stomach and intestines do their work well. Most of their difficulties come from the outside. Stress or emotion may bring about an abolition of movements in stomach and intestines. Cannon relates this to the extrusion of adrenaline into the general circulation as a result of pain, fear, and preparation for fight or flight which he has previously drawn attention to, since adrenaline, by stimulating the sympathetic nerve endings, brings about an inhibition of movement in stomach, intestine, and colon. He quotes a patient of Alvarez who continued ill for a week with much disturbance of digestion and only recovered when the doctor learned that she was worried about a bill and, as a therapeutic measure, paid the bill. This is the only sentence that could be taken exception to in recommending this admirable book to the general public for perusal.

PHARYNGEAL DISEASES

Les Maladies du Pharynx. Clinique et Thérapeutique. By G. Canuyt. Avec la collaboration de MM. Reverchon and Truffert, et le concours de Ch. Wild. (Pp. 790; 216 figures. Broché, 180 fr., cartonné toile, 200 fr.) Paris: Masson et Cie. 1936.

The pharynx might appear a somewhat restricted region to be made the subject of an immense volume of nearly eight hundred pages, but Professor Canuyt has undertaken this great task with the collaboration of the late Professor Reverchon of Lille, Dr. Truffert of Paris, and Dr. Ch. Wild, his own pupil at Strasbourg. They have had other assistance in special chapters. Professor Gery writes fully on the histopathology of tumours, Dr. Gunsett on treatment by radiation, and several others contribute sections on the relation of diseases of the pharynx to general medicine. It need scarcely be said that in a work so immense the subject is approached from the broadest standpoint, and special sections are devoted to the teeth, and especially to disorders connected with and arising from the wisdom teeth. There is even a section full of interest and good sense on forensic medicine as it concerns the specialist; this appears to indicate an increasing disharmony between Medicine and the Law in France, and it is presumably therefore all the more necessary to call attention to risks and liabilities whereby harsh penalties may be incurred.

The inflammatory diseases af the pharynx, nasopharynx, and tonsils are naturally described in great detail. It is interesting that there is a strong inclination to the view that Vincent's angina does not exist as a pathological entity, but is an epiphenomenon which masks some other pathological condition. Paul Chevalier is quoted to the effect that there is always some underlying malady. This may perhaps be going too far, but it emphatically calls attention to something which is not always understood in the nature of Vincent's angina. Dr. Truffert is anxious to suppress the term Ludwig's angina because it is not an angina and because Gensoul described the condition completely in the *Journal Clinique des Hôpitaux de Lyon* six or seven years before Ludwig. "Phlegmon septique du

plancher de la bouche de Gensoul" is the nomenclature adopted in this book.

The histopathology of malignant disease receives an elaborate general description, and tumours are described separately under the three rubrics of the tonsil, the nasopharynx, and the laryngopharynx. The various methods of treatment are described in detail, both surgical and physical, but there is a reluctance to quote any evidence on the results obtained. However bad these may be they should be frankly given so that some estimate, however imperfect, may be formed of their value. There is an inclination to resort to simple excision in all operable cases, but the section on the surgery of the laryngopharynx is unexpectedly found to be disappointing.

The authors say that they have tried to avoid "redites," and some repetition in a book so designed is inevitable, but there is much that might have been eliminated without spoiling the form of a magnificent collection of essays. Although the book is rather larger than it need have been, Professor Canuyt and his friends have made a splendid and permanent contribution to French medical literature, and in particular it forms a lasting memorial to Professor Reverchon.

BUCHANAN'S ANATOMY

Buchanan's Manual of Anatomy, Including Embryology. Edited by J. E. Frazer, D.Sc., F.R.C.S. Sixth edition. (Pp. 1,772; 1,042 figures. 35s.) London: Baillière, Tindall and Cox. 1937.

The sixth edition of *Buchanan's Anatomy*, the last issue of which was edited by Professors Wright, Parsons, Frazer, and Barclay-Smith, has now appeared under the sole editorship of Professor J. E. Frazer. The present issue of this work retains much of the original character which has gained for it a well-merited and firmly established place among British textbooks of anatomy. Previous editors have contributed their particular characteristics to the whole, which contains a fund of information not included in any book of the same category, and which is the outcome of many original observations and work of the writers themselves. Professor Frazer's special contribution is the section on embryology, including general embryology and the development of special organs. His treatment of this subject is unique, and he has amply illustrated it by diagrams and rough sketches founded on microscopical sections and his own models of human embryos which aid in effectively explaining the text.

The terminology used in this edition is the revised nomenclature, which has been adopted by the Anatomical Society of Great Britain and Ireland, with the addition of certain of the older historical names which are still in common use. These are usually mentioned once, when the subject is introduced, or recorded in the glossary. The book as a whole may be regarded as conservative in type, and one which is much needed by students of the present time when the traditional methods of the older surgical anatomists are apt to be set aside in order to make room for the introduction of more recently acquired knowledge on special subjects which is perhaps better dealt with in monographs on the particular organs and systems concerned. There are some, however, who would like to see a closer association of microscopical with macroscopical anatomy than is customary and the introduction of good illustrations representing the structure of important organs such as the mammary or lymphatic glands into the textbooks which the student is using at the time when he gains his first acquaintance with these organs in the dissecting room. A closer association of pure with applied anatomy is, moreover, at the present time more than ever desirable, a condition which can only be attained by a combination of a professed anatomist working hand in hand with surgeons or physicians who are actively engaged in professional work.

In conclusion we should like to express our high appreciation of Professor Frazer's valuable contributions to the manual, and more especially the permanent record which he has made in it of so much of his life's work on human embryology. *Buchanan's Anatomy* will be a valuable help, not only to the student as an introduction to the study of anatomy, but also to teachers and practitioners.

BRIGHT'S DISEASE

Bright's Disease and Arterial Hypertension. By Willard J. Stone, B.Sc., M.D., F.A.C.P. (Pp. 352; 31 figures. 22s. 6d. net.) Philadelphia and London: W. B. Saunders Co. 1936.

In this useful book Dr. Willard J. Stone has correlated his notes on the course and progress of his patients with Bright's disease with the literature of the subject. It is found that the diseases of which he treats occupy the third place among the causes of death in the United States. The author is clinical professor of medicine in the University of Southern California, and his book lays main emphasis on the clinical features of the groups of cases which make up the disease. In the past the clinician has often been too much dominated by anatomical and histological considerations, or, on the other hand, has adopted a purely clinical classification without reference to the underlying pathological state. The author has found useful a division of Bright's disease into acute and chronic forms with certain subdivisions. Among the acute forms there may be the usual haemorrhagic type or an acute degeneration following diphtheria, pregnancy, or septicaemia. The chronic forms are arteriosclerotic with primary hypertension, haemorrhagic with secondary hypertension, and degenerative. The discussion of these groups in detail, with a series of illustrative cases, is preceded by chapters on the physiology of the kidney and estimation of renal function. The main symptoms of Bright's disease are dealt with, the phenomena of water balance in the body and its upset in oedema, acidosis and alkalosis, and uraemia. All this is readable and up to date.

The main part of the book comprises a detailed description of the clinical features of renal disease, and may be recommended as a fair discussion of present-day knowledge. The photomicrographs of typical kidney lesions collected at Pasadena Hospital under the author's supervision illustrate well the anatomical basis of the various forms.

THE AUTHOR OF THE PURPLE ISLAND

Phineas Fletcher: Man of Letters, Science and Divinity. By Abram Barnett Langdale. (Pp. 230. 15s. net.) New York: Columbia University Press; London: H. Milford, Oxford University Press. 1937.

The Purple Island is full of interest to medical men, yet few have read it and fewer still could pass an examination on the life of Phineas Fletcher (1582–1650), who wrote the poem. Isaac Walton recommended him "as an excellent divine and an excellent angler. The author of the Piscatory Eclogues in which you shall see the picture of this good man's mind, and I wish mine to be like it." But it is *The Purple Island* which is of especial interest to doctors, for it deals allegorically with anatomy and physiology, and it would be interesting to ascertain how Fletcher came by the knowledge of his facts. Mr. A. B. Langdale points out that it contains things new and old. Phineas was almost exactly contemporary with Dr. William

Harvey, the discoverer of the circulation of the blood; both came from Kent, both were educated at Cambridge, Harvey at Caius, Fletcher a Fellow of King's College. Did they know each other and did Fletcher owe anything to Harvey? Mr. Langdale gives a fair summary, but only incidentally. In the Common Rooms at Oxford and Cambridge there was much good scientific talk during the first half of the seventeenth century. The Reverend John Ward, vicar of Stratford-on-Avon, records in prose some of the things he heard at Christ Church: Fletcher may have chosen to throw his recollections into a more poetical form.

The greater part of Mr. Langdale's book deals with the lineage, life, and surroundings of Phineas Fletcher. For this purpose he has gone to original documents for information, and has visited the villages and places where Fletcher worked and drew his inspirations as a poet, first in Kent, then at Cambridge, and finally in the Fen country. The result is most satisfactory. Phineas is no longer *nominis umbra*, but emerges as a somewhat quarrelsome parson and poet of genius who was indebted to Virgil, Ovid, and Spenser. Mr. Langdale is just but rather unkind when he gives in one appendix, "A Tabulation of the Passages in Fletcher's Works revealing Self-repetition," and in another, "The Apparent Sources of Occasional Passages in Fletcher's Works." There is a good bibliography and a sufficient index.

CHRONIC MILIARY TUBERCULOSIS

Chronic Miliary Tuberculosis. By Clifford Hoyle, M.D., M.R.C.P., and Michael Vaizey, M.B., M.R.C.P. (Pp. 140; 18 figures. 12s. 6d. net.) London: H. Milford, Oxford University Press. 1937.

Dr. Hoyle and Dr. Vaizey have had the opportunity of following up ten patients who, on clinical grounds, appeared to suffer from chronic miliary tuberculosis. In only one of the fatal cases, however, was a necropsy carried out. This form of tuberculosis, though extensively studied abroad since 1923, particularly in France, Germany, and Spain, has up to quite recent times attracted no attention in this country. Hoyle and Vaizey therefore undertook the laborious task of reviewing the whole literature of the subject. From the reported cases they collected 110 which to them appeared genuine examples of the condition. The attractively produced little monograph thus contains full details of their own cases and brief notes of the others. Basing themselves on these 120 cases, they describe the clinical and radiological features, the laboratory investigations, the clinical and radiological course, and the morbid anatomy and physiology. They then discuss diagnosis and treatment.

When it is realized that many tuberculosis workers still believe that miliary tuberculosis is rapidly fatal, and that a chest skiagram showing "miliary shadows" amounts to a death verdict for the patient, it will be admitted that the authors deserve our thanks for bringing chronic miliary tuberculosis so effectively into the clinical field in England. But there is at the same time a real danger in the publication of their work as a monograph. Chronic miliary tuberculosis is but one rare form of chronic disseminated tuberculosis, which in some degree or other plays an important part in the natural evolution of tuberculosis as a disease in nearly every individual. The danger, therefore, is that the effect of this book may be to focus attention not on the study of the development of the disease as a whole and on the importance of the chronic disseminated phase, but on the clinical aspects of chronic miliary tuberculosis alone.

To one error in the book we must draw attention. Pagel and Henke did not "emphasize minute cavities as a particular feature"; what they described was a special form of chronic disseminated tuberculosis associated with extensive small emphysematous bullae caused by the shrinking miliary nodules. This is so distinctive that Pagel has given a separate name to this condition—"disseminated emphysematous tuberculosis."

Notes on Books

A second edition has now appeared of Sir LANCELOT BARRINGTON-WARD'S *Abdominal Surgery of Children* (H. Milford, Oxford University Press, 25s.). This well-produced book, founded on the author's work at the Hospital for Sick Children, Great Ormond Street, was reviewed on its first appearance in our issue of March 31, 1928. Some chapters have been rewritten, others amplified, and all have been revised. Brief appendices now appear on anaesthesia and on intravenous saline therapy, the one by Dr. Niel McDonald, the other by Mr. J. C. R. Hindenach.

Volume i of the official *Report of the Ninth International Congress of Military Medicine and Pharmacy* has now been published. It contains the papers read at Bucarest last June and summaries of their contents in various other languages are appended. The topics dealt with in this volume include: the organization and functioning of the health services in combined operations by land and sea forces; the transport, hospitalization, and treatment of gas casualties; the organization and functioning of the surgical service in the case of mobile troops; the employment of colorimetric methods in analytical investigations in laboratories; the question of the dentally inefficient in peace time and warfare, including the provision of dentures and other treatment; and the special methods of feeding the sick and wounded required by various circumstances arising both in peace and in war. This volume presents a comprehensive review of modern methods of dealing with some urgent questions of the day, and is of unusual importance even outside the medical circles of the fighting forces.

Principles of Pharmacy, by Professor H. V. ARNY and Dr. R. P. FISCHELIS, is a well-established textbook; it first appeared in 1909, and has now reached a fourth edition (W. B. Saunders, 35s.). This volume of some 1,000 pages is divided into six parts, which deal with pharmaceutical operations, the galenical preparations, inorganic and organic chemistry, pharmaceutical tests, and dispensing. It thus provides a systematic survey of the knowledge needed by the student of pharmacy. The short history of pharmacy contains an interesting analysis of the American drug bill. The total bill is estimated at 715 million dollars. Drugs dispensed by hospitals and doctors account for only 7 per cent. of this total, while drug store sales are reckoned as 87 per cent., one-quarter of the latter representing the sum spent on prescribed remedies, and three-quarters that spent on self-medication. The sale of "patent medicines" in the U.S.A. is estimated at 335 million dollars. The final section, on dispensing, also contains much of common interest to the professions of medicine and pharmacy, since it discusses at some length the dispensing of illegible prescriptions and of prescriptions containing hopeless incompatibilities or probable errors in dosage. In general the volume gives a very clear account of its main subject and much information in a wider field.

The Johns Hopkins Press of Baltimore has reprinted the German original of Paul Langerhans's *Contributions to the Microscopic Anatomy of the Pancreas*, with an English translation and introductory essay by Dr. H. Morrison. The price of the book is 4s. 6d., and it is obtainable in this country from the Oxford University Press.

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RAMON Y CAJAL: HIS CONTRIBUTION TO MEDICINE

The recent issue by the American Philosophical Society of Santiago Ramon y Cajal's autobiography, translated into English by Dr. E. Horne Craigie,[1] should appeal to a far wider circle of readers than that composed of neurologists and laboratory workers. The story is one of a man of exceptionally strong personality, who forced his way into international fame, in spite of an unfavourable environment, by unremitting toil controlled by the full power of his intelligence. It is not to be inferred, however, that the acquisition of fame was the goal of his ambitions; it was a by-product that often caused some anguish of mind when, by the award of some high international honour, his work was badly interrupted. Cajal's love of country nevertheless compelled him to accept such honours, and even, in the earlier stages of his career, to seek recognition abroad when he found that papers published in Spanish were not read by the medical world.

For lack of space the fascinating story of Cajal's life cannot be outlined here. The first volume of his autobiography is devoted to his early life, and in it he describes his boyish escapades and his harsh upbringing as well as many interesting details of life in Spain. His career might be said to have started when in 1877 he was installed at Zaragoza as auxiliary professor in anatomy and began to turn his attention to histology. It is astonishing to learn that teachers in biology and pathology habitually disregarded the microscope at that time, the instruments being kept carefully locked up in their cases. It is characteristic of Cajal that he not only used the microscope fully, but spent his hard-earned savings in buying the best instrument available. His interest in the histology of the central nervous system was shortly afterwards aroused when Simarro, the famous neurologist of Valencia, showed him some Golgi preparations. Cajal was already an amateur photographer of much ability, and it may be assumed that his knowledge of the chemistry of silver salts inspired his application of this new metallic method to the problems of histology. At all events he wasted no time in trying it in his own laboratory and in carrying it through modifications that yielded finer results than any obtained before. In particular he found that embryological material provided especially beautiful and clear results. Publications now followed one another in rapid succession. Unfortunately, however, these attracted little attention abroad, and their author realized that he must make his results known by other means. A vital step was taken in 1889, when he demonstrated his preparations at a meeting in Berlin of the German Anatomical Society. He describes how the supercilious attitude of the gathering towards a mere Spaniard and his work was transmuted to admiration through the single-minded generosity of Kölliker, who, in spite of his age and supreme eminence at that time, could take the trouble to examine and appraise the work of this newcomer. The support of this great man was of the greatest consequence: it meant acceptance by the world outside Spain, and Cajal's public was assured for all future publications. Honours followed—the Croonian Lectureship in this country in 1894, accompanied by the conferment of an honorary degree at Cambridge, and a lectureship in the United States in 1899 form but a small part of the distinctions which culminated in the award of the Nobel Prize in 1906. Cajal died in 1934 at the age of 82.

His contribution to medical science falls into two main divisions. First and foremost stands his work on the histology of the nervous system. He demonstrated this with a clarity that had never before been achieved, using modifications of the silver technique introduced by Golgi. The theoretical consequences of this work were of great significance. His results led Cajal to endorse wholeheartedly the neurone theory of Waldeyer, the supporters of which held that the propagation of the nervous impulse took place through contact between the processes of adjacent neurones. This was opposed by the supporters of the so-called "reticular" hypothesis, which postulated that propagation of the nervous impulse depended upon the continuity of cytoplasm between neighbouring neurones, which thereby formed a kind of syncytium. The controversy between these two schools was long and bitter; it was largely due to Cajal's vigour and the precision of his results that the neuronist eventually held the field. Much of the argument centred around the changes which take place in the nerve fibres in Wallerian degeneration and the subsequent regeneration of these fibres. This subject was studied in minute detail by Cajal,

[1] *Recollections of My Life: Santiago Ramon y Cajal.* Memoirs of the American Philosophical Society, vol. viii, Parts I and II. 1937. London: H. Milford. (22s. 6d.)

and we are fortunate in having an English version of this work.[2] It is well known that regeneration of nerve fibres fails to take place within the central nervous system: the abortive attempts made towards this end and the regression of the sprouts put forth from the central stump are described in these two volumes.

The structure of the neuroglial elements of the central nervous system and their demonstration by the famous gold chloride sublimate method are perhaps more often associated with Cajal's name than his earlier studies on the neurones, although it is clear from his autobiography that the latter were regarded by him as his principal achievement. However, the application of these new glial methods to embryological material revealed a series of developmental changes in the morphology of the neuroglial cells that was later adapted by Bailey and Cushing to the study of the gliomata. It was found possible to classify these tumours into types corresponding to stages in the embryological development of the neuroglia, a brilliant piece of work that has proved to be of practical as well as of academic importance, since upon it depends all modern work in neuro-surgery. It has now been abundantly demonstrated that both prognosis and treatment of the gliomata depend upon histological identification of the tumour disclosed at operation; some require radical removal whilst others are better treated by irradiation.

The last stages of Cajal's career saw him established as an acknowledged master with a school of energetic and often brilliant pupils in a magnificent institute provided by a grateful Government. In the present unhappy state of Spain all this has inevitably come to a standstill. We can only hope that means will be found to rebuild the splendid new school when fighting comes to an end, and that this revival may come soon.

[2] *Degeneration and Regeneration of the Nervous System.* Translated by R. M. May. Two vols. 1928. London: H. Milford. (50s.)

THE INTERVERTEBRAL DISKS AND BACK PAIN

As a result of man's erect posture the spine is subject to exceptional stresses and strains. It must be strong and at the same time supple, a requirement which has been met by the specialized structure of the intervertebral disks. These disks are made up of three components: (1) cartilage plates adapted to the upper and lower surfaces of adjacent vertebral bodies; (2) the fibrous annulus; and (3) the nucleus pulposus, which represents the remains of the chorda dorsalis (notochord) and is enclosed by the fibrous ring. In 1896 Theodor Kocher[1] reported a case of rupture of the intervertebral disk between the first and second lumbar vertebrae in a young man who had succumbed to multiple injuries after falling from a height of one hundred feet and landing in the standing position. There was no fracture of the spine. This was one of the first cases to arouse interest in intervertebral disk lesions. A comprehensive radiological study of the chief lesions which we now know to affect the disks has recently been made by A. Craig Mooney.[2] One of the most interesting of these lesions, and one that has attracted much attention recently, is the extrusion of disk substance into the spinal canal. The extrusion consists of a herniation of nuclear tissue through a fissured annulus. The restraining action of the posterior longitudinal ligament affords some protection to the contents of the spinal canal, but this is not always enough: the herniation may project into the canal and, becoming vascularized from the spongiosa of an adjacent vertebral body, undergo calcification or ossification.

Herniation of the intervertebral disk has been recognized only quite recently, though for many years cases have been recorded in which the spinal cord has been compressed anteriorly by what have been regarded as chondromas originating in the intervertebral disks. Masses projecting backwards into the neural canal have also been variously described as myxochondromas, fibromas, loose cartilages, fibrochondromas, Schmorl's nodules (Knorpelknötchen), etc., and it is highly probable that all of these have in reality been examples of disk herniation in which the extruded pulposus has, in some cases at least, undergone secondary changes. Alajouanine and Petit-Dutaillis[3] drew attention to the condition in 1930. In 1934 W. J. Mixter and J. S. Barr[4] of Boston, Massachusetts, gave an account of nineteen cases of herniation of the nucleus pulposus into the spinal canal with compression of the cord or cauda equina. In the same year M. M. Peet and D. H. Echols[5] reported two further cases, and more recently W. J. Mixter and J. B. Ayer[6] have collected a series of thirty-three examples of the condition. Further accounts are also given this year by J. S. Barr[7] and P. C. Williams.[8] The commonest site of the lesion is between the fourth and fifth lumbar vertebrae. The patients present themselves with low back pain and loss of mobility of the lower part of the spinal column, symptoms which

[1] *Mitt. Grenzgeb. Med. Chir.*, 1896, 1, 415.
[2] *Brit. J. Radiol.*, 1937, 10, 339.
[3] *Presse méd.*, 1930, 98, 102.
[4] *New Engl. J. Med.*, 1934, 211, 210.
[5] *Arch. Neurol. Psychiat.*, Chicago, 1934, 32, 924.
[6] *New Engl. J. Med.*, 1935, 213, 385.
[7] *J. Bone. Jt. Surg.*, 1937, 19, 323.
[8] Ibid., p. 343.

lead these patients more frequently to the orthopaedic clinic, the physician, or the gynaecologist than to the neurological surgeon. There may be complaint of pain radiating into the buttock and down the leg suggestive of sciatica, and sensory and motor signs so slight as to be overlooked, with little more than some loss of sensation and a depression of the ankle-jerk. A curious clinical feature is the fact that the symptoms are not constant and that remissions occur. Pain is the most constant and prominent symptom, and it has been suggested that although the disk itself has no nerve supply the posterior longitudinal ligament, which takes the strain, is supplied with sensory nerve fibres. Diagnosis is confirmed by cerebrospinal fluid studies and radiography after the introduction of lipiodol—by a technique which requires the use of a larger quantity of oil than usual and a tilting *x*-ray table. It is noteworthy that plain *x*-ray photographs of the spine generally fail to show the abnormality.

An important question is the relation of this condition to injury. A rupture of the annulus fibrosus or of the cartilage plate must presumably take place before extrusion of the nucleus pulposus can occur, and a history of antecedent injury was obtained in nearly 80 per cent. of the cases from the Massachusetts General Hospital. Mixter and Ayer remark that the discovery of this new clinical and pathological entity introduces a fruitful source for industrial and accident compensation. The most common cause of injury in the recorded cases has been the lifting of heavy weights, and injury to intervertebral disks has also been reported by C. N. Pease[9] as a result of lumbar puncture. Paraplegia has followed spinal manipulation of these cases, presumably by increasing the herniation. Any attempt, therefore, to suggest that this disk herniation may be that pathological process undemonstrable by *x* rays but held by the osteopaths to be the basis of their practice and corrected by it is quite untenable. Treatment by laminectomy and removal of the herniated mass, either by an extradural or intradural route is claimed to give uniformly good results. Spinal fusion may also be required if the laminectomy has been extensive and has necessitated the removal of one or more of the articular facets. Among the large group of patients variously labelled as cases of radiculitis, lumbago, sciatica, fibrositis, myalgia, and backache of apparently gynaecological origin it is not improbable that some may be suffering from disk lesions. Many of these patients with low backache are a bane to the life of a busy practitioner, and he should bear in mind the possibility that the lesion causing the pain may be herniation of a disk.

[9] *Amer. J. Dis. Child.*, 1935, 49, 849.

THE PANCREATROPIC HORMONE

The presence in the anterior lobe of the pituitary of hormones which act on the other ductless glands is now generally recognized, but it is by no means clear what effect the pituitary has on the pancreas. One group of workers hold that an anterior pituitary hormone stimulates the islets of Langerhans and may even lead to an increase in islet tissue. Another group speak of a diabetogenic or anti-insulin hormone, and state that pancreatic diabetes (in depancreatized animals) will not occur in the absence of the anterior pituitary. The former group claim to have demonstrated that injection of anterior pituitary extracts produces a fall in blood sugar and a multiplication of islet cells. The significance of such a finding, if confirmed, is obvious. According to one view the islet cells, once they have developed during foetal life, lose all relation to the surrounding parenchyma and lead a separate existence as true endocrine glands, with a layer of connective tissue separating them from the acinar cells of the pancreas. Another view is that the islets arise by differentiation of pancreatic acini, that they function for a time as endocrines, and later return to their previous exocrine function. Yet a third theory regards the islets as arising from the centro-acinar cells of the pancreas. The histologist Maximow says: "It seems fairly well assured that the pancreas, even in the adult, is provided with undifferentiated cells which can give rise to new acini and, to a great extent, to new islands." Morphologically, therefore, there is no strong reason why new islets should not be formed in the diabetic—unless it is just this power of regeneration which is lost. Anselmino and Hoffman, in their original work, used extracts of fresh anterior pituitary lobes and obtained rapid new formation of islets and increase in size of those already present; but they did not indicate whether the new formation was due to metaplasia of acinar cells or to division of already existing islet cells. In a recent publication Chrzanowski and Grzycki[1] report results obtained from the injection into rats of aqueous extracts of anterior pituitary. Such extracts produced no effects on either the islet or the acinar tissue of the rat pancreas, nor was there any evidence of the new formation of islets. But on passing the aqueous extracts through an ultrafilter and treating the ultrafiltrate with an acetate buffer solution of *p*H 5.2, and submitting it to further ultrafiltration, they obtained a filtrate which on neutralization had a marked effect on the rat pancreas. A few injections produced a loss in the normally sharp contours of the islets, with a definite increase in islet tissue. The authors state that under the influence of these injections there was clear evidence of new formation of islets, and adjoining ones could be seen in the process of joining together by a bridge of newly formed tissue, the latter rapidly undergoing mitosis until a giant islet was formed. The parenchymatous tissue appeared to be unaffected. The new islet tissue is stated to originate from certain isolated, lightly staining parenchymatous cells, and to a less degree from the centro-acinar cells. Chrzanowski and Grzycki attribute the inactivity of the aqueous extracts to the inhibitory

[1] *Klin. Wschr.*, April 3, 1937, p. 485.

action of another pituitary hormone, probably the anti-insulin hormone described by Lucke, which can be separated from the pancreatropic hormone by ultra-filtration. These results, in essence, confirm the claims of Anselmino and his co-workers. It is interesting, however, to note that another communication from the same university[2] categorically denies that extracts of beef pituitary, prepared by the method of Anselmino and his colleagues, contain a pancreatropic hormone. The extracts were administered twice a day to rats, guinea-pigs, and rabbits for periods up to eight days, and the blood sugar and the histology of the pancreatic islets were both studied. In no case could evidence of a pancreatropic hormone be obtained, and the authors ascribe the findings of other workers to the variability of the form and distribution of the islets. As to the production of giant islets, they state that these are found in the glands of untreated animals. It is clear that the difficulty is one of rigid control, but the weight of evidence would seem to be on the side of those who claim the existence of the pancreatropic hormone.

NERVOUS MECHANISMS IN ANGINA

In the differential diagnosis of coronary occlusion pulmonary embolus has sometimes to be considered, for pain or oppression in the chest, dyspnoea, cyanosis, and shock are common to both. A previous history of effort angina would suggest myocardial infarction; and any obvious thrombophlebitis or a recent abdominal or pelvic operation would support the diagnosis of pulmonary embolus, as also would the predominance of dyspnoea and cyanosis over pain. The electrocardiogram may also help, but it is well known that in pulmonary embolism it may show changes indicating altered myocardial function. It is held by D. Scherf and E. Schönbrunner[3] that these result from a reflex coronary constriction from impulses arising in the lung and conveyed along the vagus, and apparently on their view the discomfort or pain in the chest is due to coronary constriction. Explanation of these effects on the basis of anoxaemia caused by the pulmonary obstruction is rejected, as they claim to find changes in the electrocardiogram even with a small embolus. In experiments on ten dogs they found alteration of the T-waves after lung embolism in three, alteration of the QRS complex in four, and no change in the remaining three. Division of both vagi before the experiment is said to prevent any change in the electrocardiogram, and also to lessen the severity of the symptoms after pulmonary embolism. The practical application of this work is, according to the authors, in the use of nitrites in pulmonary embolism to relieve coronary spasm resulting from the pulmo-coronary reflex. Confirmation of Scherf's and Schönbrunner's observations appears desirable before their recommendation is accepted. Observations after total thyroidectomy in cases of severe angina throw some light on the nervous pathways concerned in this condition. That pain was relieved so soon after operation that it could not be attributed to a lowered metabolism suggested that injury to some of the cardiac nerves in the neck accounted for this—an explanation that was strongly supported by the fact that after hemi-thyroidectomy the relief was limited to the operated side. A clinical investigation of the problem and anatomical dissections to determine the nervous relations of the thyroid gland have been made by A. A. Weinstein and H. E. Hoff.[4] In three patients they mapped out areas of superficial and deep hyperaesthesia on the chest wall, and by constant testing during operation under local anaesthesia they demonstrated that this hyperaesthesia disappeared either at the moment the gland was shelled out from its bed, when the inferior thyroid vessels were ligated, or when the stellate ganglion was injected with novocain. The choice of patients for this demonstration does not seem to have been very suitable: all three had rheumatic heart disease; only one had angina; and the other two were suffering from congestive failure. The dissection carried out on sixteen cadavers showed that in 70 per cent. the superior cardiac nerve, arising from the superior ganglion of the cervical sympathetic, was closely applied to the posterior surface of the thyroid gland, and that in 20 per cent. the middle cardiac nerve either lay on the gland or was close to the inferior thyroid vessels. Both these nerves are believed to carry afferent fibres from the heart, and their division or injury during thyroidectomy would serve to explain the amelioration of anginal pain sometimes observed immediately after operation. However, like the anatomical relations, the relief is inconstant, and moreover only temporary, either because of recovery in injured nerve fibres or because of compensation by alternative routes. The observations throw light on the nerve paths concerned in angina, although it is clear that they give no encouragement to operations on the cervical nerves undertaken deliberately for the relief of this condition, and such methods have now been generally abandoned.

LICHEN URTICATUS

Few children pass through their infancy without suffering to some slight degree from "heat spots," and in a great many cases these lesions are sufficiently numerous and persistent to call for medical advice. This eruption, which is one of the plagues of childhood, has been labelled with many different names, but the two under which it is most commonly known are lichen urticatus and papular urticaria. The problems of its aetiology and treatment still remain unsolved. It has often been designated teething rash by the lay public, but there is little evidence that it is caused by teething, which is after all a physiological and not a pathological process. Many attempts have been made to prove that it is due to dietetic errors; in fact, it is sometimes known as chronic alimentary urticaria; but this theory is by no means proved, and its various supporters differ greatly in the importance which they ascribe to various factors. Some regard it as due to the ingestion of an excessive amount of carbohydrates; others to proteins; and it has been held that breast-fed infants never suffer from it. These different theories are mutually contradictory. One factor there is that has an undoubted influence—that is, temperature. All observers are agreed that the

[2] *C.R. Soc. Biol.*, Paris, 1937, 124, 823.
[3] *Klin. Wschr.*, March 6, 1937, p. 340.
[4] *Surg. Gynec. Obstet.*, 1937, 64, 165.

eruption is much commoner in summer than at any other time of the year, and Hallam has been able to obtain in almost every case complete remission of the eruption, however severe, merely by taking the children into hospital even although they continued to be supplied with their ordinary diet by their parents. It is suggested by Tate that the explanation of the benefit of merely sleeping in hospital is the fact that hospital wards are commonly kept at a much lower temperature than many private dwellings. For many years workers have striven to establish some connexion between lichen urticatus and calcium metabolism, and calcium in various forms has been a favourite remedy with many paediatrists. The results of this treatment, however, have been by no means satisfactory. In recent years it has been established that the parathyroid gland is intimately concerned with calcium metabolism, and Drs. Pilsbury and Sternberg[1] report considerable success in the employment of parathyroid extract given subcutaneously in doses of 10 to 25 units at weekly or bi-weekly intervals. At the same time they also administered internally calcium lactate, calcium gluconate, or dicalcium hydrophosphate, and the usual forms of local treatment. They claim good or excellent results in 85 per cent. of their cases, while in another series in which parathyroid extract was not given only 38 per cent. responded satisfactorily. They ascribe these results to an elevation of the level of the calcium content of the blood and consider that such increase in blood calcium may either produce a sedative effect or may correct some underlying fault in calcium metabolism. They discuss in some detail the theory that the nature of the disease is allergic, but they consider that the evidence in support of such a view is extremely meagre.

HEALTH IN THE UNITED STATES

A recent Bulletin issued by the Health Organization of the League of Nations[2] contains a report by a group of European experts in hygiene setting forth impressions which they gained in the course of a visit to the United States during 1935. The report is mainly concerned with public health in its relation to social problems which have lately been engaging the attention of administrators in the Union. After an introductory reference to the geographical, economic, racial, and other features of the country, notice is taken of the prevalence of certain disease conditions, and the recommendations of the Committee on the Costs of Medical Care are cited. The Federal, State, and local authority agencies for the protection of the public health are passed in formal review. It is observed that in America compulsory pasteurization does not meet with such strong opposition as it has encountered in Great Britain and Denmark. During their stay in Chicago the visitors were confronted with sanitary problems which were new to them, including the existence of by-passes between pure and raw water supplies. Of the articles devoted to selected topics one is concerned with the social security movement, the need for which was thrown into high relief by the economic depression which reached its crisis in 1933. In this connexion the report quotes President Roosevelt's message to Congress. "People," he said, "want decent homes; they want to locate them where they can engage in productive work; and they want some safeguard against misfortune." A committee appointed by the President made useful recommendations, which were substantially incorporated in the Social Security Act of 1935. This Act established a system of Federal grants to States for the promotion of welfare services not only by way of old-age pensions and unemployment allowances but also, in the domain of health, by the development of maternity and child welfare activities and of schemes for crippled, homeless, and neglected children. It made provision also for assisting States and local authorities to establish and maintain adequate general public health standards, including the training of personnel for State and local health work. Another article in the report deals with the teaching of preventive medicine in the medical curriculum. It is stated that there is in America a lively appreciation of the importance of instruction of this kind, but that in the time available to the visitors it was difficult to determine to what extent the idea received practical application. The medical examination of entrants, they say, as carried out at some universities, followed by periodical examinations, may convey to the student's mind some dim suggestion of a preventive purpose, but at certain American medical schools special methods have been devised to bring him face to face with the morbific environment of the patient upon whose case he is preparing his clinical report. He is made to demonstrate to himself that, given adequate preventive measures, his patient in all probability would not have been stricken at that time with the particular disease from which he is suffering. The report adds that this method of "clinical case studies," as it has been called at Vanderbilt and Yale, has had the remarkable effect of inspiring the student of medicine at these universities with enthusiasm for public health.

[1] *Amer. J. Dis. Child.*, 1937, 53, 1209.
[2] *Quart. Bull. Hlth. Org. L. o. N.*, 1936, 5, 747.

THE EDUCATIONAL NUMBER, 1937

No. 4000 of the *British Medical Journal*, dated September 4, 1937, will be the annual Educational Number. Its contents, as in previous years, will include a full account of the requirements of the General Medical Council and of the universities and other licensing bodies in Great Britain and Ireland, as well as information about the opportunities offered by the various medical schools and other teaching institutions and the fees charged by each. The details given have been revised and brought up to date by the authorities concerned. These sections, the object of which is to furnish a handy guide to intending students of medicine, are supplemented by articles intended for newly qualified practitioners on such matters as postgraduation study (with special reference to the British Postgraduate School at Hammersmith), the public medical services at home and abroad, tropical medicine, psychological medicine, and the various special diplomas. The opening article for our forthcoming Educational Number, written by Sir David Wilkie of Edinburgh, is entitled "Education in Surgery for General Practice."

ANAESTHESIA IN GENERAL PRACTICE

This is one of a series of articles, contributed by invitation

LOCAL ANAESTHESIA

BY

C. W. MORRIS, O.B.E., M.B., B.S., D.A.

The outstanding feature of local anaesthesia is that it enables a patient to undergo an operation without loss of consciousness—a feature shared with spinal anaesthesia. It is obvious that the retention of consciousness may be both an advantage and a disadvantage. Local anaesthesia, however, supplies the best answer to the patient suffering from some minor surgical complaint who states that he is perfectly willing to undergo the operation but cannot face a general anaesthetic. Owing, however, to the great progress made in recent years in general anaesthetics, in which both the safety and the comfort of the patient have been increased, the employment of local anaesthesia has become somewhat restricted.

With the exception of certain special conditions local anaesthesia finds its chief usefulness in minor surgery. For this reason it is invaluable to the general practitioner. This does not imply that it should be limited to minor surgery, as it is safe to state that every operation can be, and has been, performed under this form of anaesthesia. It still can be regarded as a useful alternative to general anaesthesia for most operations and the anaesthetic of choice for many. A local anaesthetic may with advantage be employed in the following circumstances.

1. Used alone, or after preliminary medication with morphine and hyoscine, in minor surgical conditions such as removal of sebaceous cysts, adenoma, lipoma, excision of scars, removal of small foreign bodies, etc.

2. In more extensive operations: (*a*) when the patient dreads a general anaesthetic; (*b*) when the patient's condition is such that a local anaesthetic would be less dangerous than a general.

3. In combination with general anaesthesia to obtain relaxation and lessen the amount of general anaesthetic given.

4. When the practitioner is single-handed and has to act as both anaesthetist and surgeon.

Contraindications include such conditions as sepsis round the site of the injection and patients who dread being "awake" during an operation. Young children are not considered good subjects, although it is interesting to note that a local anaesthetic is advocated for Rammstedt operations.

Among the advantages are ease of administration, absence of extensive preparation of the patient, freedom from unpleasant after-effects, and last, but by no means least, safety. The surgeon must remember that the patient is not unconscious and that the area of anaesthesia is limited; gentleness must therefore be of the highest order.

Local Anaesthetic Agents

Many drugs are available which appear to give good results. As my experience has been chiefly with novocain that drug only will be referred to here. It may be used in dilutions of 1/2 per cent. to 2 per cent., and unless otherwise stated it will be assumed that 1/2 per cent. is the strength referred to throughout this paper.

Novocain solutions can be repeatedly boiled for sterilization and as much as 200 c.cm. of the 1/2 per cent. solution be injected with safety. The addition of adrenaline hydrochloride (1 in 1,000) in the proportion of three drops to each fluid ounce of the solution gives two advantages: the duration of the anaesthesia is increased, and there is less haemorrhage in the field of operation. Where adrenaline may be harmful on account of its action on the circulation, as in toxic goitre, novocain and "cobefrin" may be used. "Cobefrin" is claimed to have no adverse effect on the circulation, and certainly produces a satisfactory ischaemia.

Instruments and Method

A good syringe capable of being sterilized—one of 10 c.cm. capacity is a handy size—and an assortment of needles ranging from fine hypodermics to those of from two to three inches in length are needed. Longer needles may be used but they are rather more difficult to direct. A "continuous-flow" type of syringe saves time when an extensive area requires infiltration.

Local anaesthesia may be produced by (1) local infiltration, (2) nerve blocking, or (3) a combination of the two. Before the injections are started the patient, if at all nervous or if the area to be infiltrated is extensive, should be given a hypnotic. For adults morphine 1/6 to 1/4 grain or omnopon, if preferred, combined with hyoscine 1/150 grain will prove helpful. The more powerful basal narcotics, as avertin or nembutal, are not as useful as one might suppose, for should the patient be only lightly under these drugs he may resent the discomforts of the infiltration and become restless and difficult to control. The area to be infiltrated, the syringe, needles, solution, and the hands of the anaesthetist must be prepared with the care that is given to any surgical operation.

First of all a wheal is raised in the skin with a fine hypodermic needle at the proximal end of the area requiring anaesthetization; through this wheal a larger and longer needle is thrust and the infiltration carried on under the skin. If the infiltration is done gently and slowly the discomfort is reduced to a minimum. In loose skin the area of subcutaneous infiltration can be followed with ease and the exact spread of the solution accurately determined. Subsequent insertions of the needle should always be through the anaesthetic area, so limiting the pain to the first prick of the hypodermic needle.

While infiltrating, care must be taken to avoid direct injection into the circulation. This may be guarded against by taking the following precautions. As the needle is pushed forward under the skin the plunger should be pressed down to send a stream of the solution before the needle point. This will tend to push aside small vessels and lessens the possibility of injection into their lumen, or of causing a haematoma. When in the proximity of large vessels the plunger should be withdrawn slightly from time to time to see that no blood is aspirated into the syringe. Perhaps the safest way is to thrust the needle to the limit of the area and infiltrate only while it is being slowly withdrawn. It is possible that the failure to observe these precautions have been responsible for the rare accidents which have been reported.

For conditions such as small cysts, or when skin incisions only are required, a single broad line of infiltration is all that is necessary. For larger tumours an elliptical area surrounding the tumour must be infiltrated

and some of the solution placed deep to it as well. A liberal amount of the novocain solution will contribute to the success of the anaesthesia. When a large area has been treated in this way a short wait of from ten to fifteen minutes before operating will allow the solution to soak well into the tissues. Some anaesthetists advocate the gentle massaging of the infiltrated area to assist the diffusion. A pin or towel-clip can be used for testing the degree and extent of anaesthesia obtained and the result noted by watching the reaction of the patient's face. This is better than asking him whether he is hurt, as that suggests pain and increases his apprehension. This subcutaneous infiltration method may be elaborated and applied for a large variety of operations.

For fingers and toes the method is slightly changed; a nerve block is effected by ringing round the base of the digit. Here again a wheal is raised on the dorsal aspect at the base of the finger or toe and the circle of infiltration completed by employing a longer needle. In this case it is safer to use very little, if any, adrenaline with the solution, as the ischaemic effect of the adrenaline is very marked when injected in this way. I have seen a finger apparently bloodless when adrenaline had been injected, and although no ill effects followed, the risk of sloughing must have been considerable. After five to ten minutes the whole finger becomes anaesthetized, and a large number of minor operations may be carried out without pain to the patient. This method of anaesthetizing fingers must not be adopted in cases of whitlow when the inflammation involves the base of the finger.

When General Anaesthesia is Contraindicated

In the second class are included a large number of operations which may be performed under local anaesthesia owing to the condition of the patient contraindicating a general anaesthetic. In this class it is usual whenever possible to give a preliminary hypnotic. Some typical cases will be described.

RIB RESECTION FOR EMPYEMA

Here the patient may be seriously ill from an antecedent pneumonia, or pneumonia may still be present. The portion of rib to be resected is determined, and it is helpful to outline it with an indelible pencil. A wheal is raised at the dorsal extremity of this marked area and a two-inch needle is thrust down till its point touches the surface of the rib. The needle, detached from the syringe for greater mobility, is then pushed down till the lower border of the rib is detected, and the point is then directed into the subcostal groove; 5 c.cm. of the solution is then injected to block the intercostal nerve and render that segment of the chest wall analgesic. The periosteum along the outer surface of the rib is then infiltrated, and finally the skin along the proposed incision is thoroughly dealt with. The infiltration must be sufficiently wide to include the intercostal space both above and below the selected rib. Some three to four ounces of the solution may be necessary to produce complete analgesia.

One warning may be given to the surgeon. The rib must be cleanly cut through and no wrenching or traction made, else pain is transmitted to the unanaesthetized parts of the chest wall.

DRAINAGE OF BLADDER

Another example in this class is the drainage of the urinary bladder in cases of prostatic obstruction. Here again the patient may be in a condition in which a general anaesthetic is not considered advisable. A line of anaesthesia is laid down extending from just below the umbilicus to the symphysis pubis. The skin and fat are thoroughly infiltrated and the linea alba between the two recti injected, and the two muscles as well. As in all operations under a local anaesthetic, should the patient complain of pain while the operation is in progress a pause may be made and the sensitive layer or part directly infiltrated. If the opening of the bladder causes discomfort a syringe full of the solution can easily be injected into its wall.

GASTROSTOMY

An emaciated and cachectic patient undergoing an operation for gastrostomy may benefit by having it performed under a local rather than a general anaesthetic. A subcutaneous band of infiltration is placed along the left rectus muscle, starting from just above the costal margin and extending down to the umbilicus. The rectus sheath and muscle are deeply infiltrated, and an attempt is made to infiltrate the peritoneum below. Should this layer escape the solution and prove painful it may be directly infiltrated during the operation. The stomach wall does not require infiltration and the patient will complain of no pain while it is opened provided there is no undue traction. The solution should be used freely, and as much as four or five ounces may be necessary to obtain good anaesthesia.

TRACHEOTOMY

A tracheotomy or laryngotomy may be easily and quickly performed under local anaesthesia, and in some cases it may be the only anaesthetic that can be given with safety. For this purpose a 1 per cent. solution of novocain and adrenaline should be employed. A subcutaneous band of infiltration is placed down the middle line from the cricoid to the manubrium sterni. Before the trachea or the larynx is opened 1 c.cm. of a 10 per cent. solution of cocaine should be injected between the cartilaginous rings of the trachea, or in the case of a laryngotomy through the cricothyroid membrane. This will help to check the paroxysmal coughing that otherwise occurs when the tracheotomy or laryngotomy tube is first inserted.

THE INGUINAL REGION

For operations in the inguinal region, such as for herniae, varicoceles, and hydroceles, the following technique, slightly modified to meet each operation, will prove serviceable. The usual small preliminary wheal is raised at a point one and a half to two inches internal and above the anterior superior spine of the ilium. Through this wheal a larger needle is thrust downwards and outwards towards this bony point. Some 20 c.cm. are injected deeply under the aponeurosis of the external oblique and down between the internal oblique and transversalis muscles till the needle makes contact with the ilium. This should block the hypogastric branch of the ilio-hypogastric nerve and the ilio-inguinal nerves as they lie between these layers. Without withdrawing the needle from the skin its direction is now changed to lie parallel to Poupart's ligament, and some 20 c.cm. injected widely under the aponeurosis of the external oblique, and lastly the subcutaneous area reached through this puncture infiltrated. The needle is withdrawn and inserted through the now analgesic skin over the internal abdominal ring, and 20 c.cm. are injected under the aponeurosis through the internal oblique as it covers the inguinal canal and into the cord itself, infiltrating these structures thoroughly and blocking the genital branch of the genito-crural nerve. The subcutaneous area is injected last, as this enables the deeper infiltration to be more easily carried out. One more injection over the lower part of the inguinal canal

will reach the external abdominal ring, where the cord must be infiltrated as it crosses the pubis. On completion of the infiltration the patient should be allowed to lie quietly for some twenty to thirty minutes, while the solution is taking effect, before the operation is started.

Many operations, such as evulsion of the phrenic nerve in cases of active phthisis, colostomies or caecostomies in patients dangerously ill with obstruction, may be performed with advantage under a local anaesthesia, but space does not permit of giving details of each case.

OTHER CONDITIONS

In the third class mention may be made of blocking the lower intercostal nerves, as already described, with 2 per cent. novocain and adrenaline on one or both sides.

An extensive field blocking of the abdominal wall with 1/2 per cent. novocain and adrenaline may be combined with nerve blocking or employed alone. These measures should be carried out while the patient is under gas and oxygen, and when successfully performed contribute markedly towards obtaining muscular relaxation and so limiting the amount of ether or chloroform that has to be used.

Other uses of local anaesthesia include its employment in dental work and its recent application for injection of fractures, while cocaine or its substitutes are largely utilized for nose, throat, and eye operations.

The few examples of the application of local anaesthesia given in this article, while by no means exhaustive, may serve to show its value both to the whole-time anaesthetist and to the practitioner, and may encourage its employment by those who have as yet not been tempted to try it.

Local News

ENGLAND AND WALES

West Riding Medical Charitable Society

The one hundred and ninth annual meeting of this long-established Yorkshire charity was held at Harrogate under the chairmanship of Dr. Edgecombe. The objects of this society are to help medical men who have fallen on evil times and to give financial assistance to the dependants of members who die without having made provision for them. Of late years the society has interested itself to a greater extent than formerly in securing adequate education for the children of its members. In some twenty different centres of the West Riding one or two stewards are elected to report on the financial condition of the applicants for help, and in many cases they are able to give that personal information which is such a valuable supplement to mere documentary evidence. Any grants that are made are handed to the stewards, who are given discretionary powers in the dispensing of the money. Membership now numbers 1,261, and the financial condition of the society is very sound. The invested funds amount to £55,577, and the ordinary income is about £3,100, which represents the amount derived from investments and the one guinea annual subscriptions of members. At the annual meeting just held grants amounting to £2,713 were awarded, and a special grant of £50 was again made to Epsom College towards their fund for the provision of foundation scholarships for the sons of medical men. Dr. Wardrop Griffith, who has acted as honorary treasurer of the society for the last sixteen years, has resigned that position, and will be succeeded by Mr. Harold Collinson. At the end of the meeting the president, Dr. Edgecombe, asked Dr. Griffith to accept from the officers and stewards of the society an antique silver loving-cup as a token of their appreciation of his devoted service during his sixteen years' tenure of the office of treasurer.

Nutrition in Lancashire

The annual report for 1936 of the county medical officer of health and school medical officer to the Lancashire County Council Education Committee includes an interesting paper dealing with the nutrition of children at a council school. Some ten years ago a shop in the vicinity of this school greatly increased its turnover by providing fried chipped potatoes for children who were unable to go home for dinner. It then occurred to the head master to arrange for a well-cooked and varied midday meal at the school itself, and this scheme, by careful organization and by the delegation of the greater part of the housekeeping, marketing, and finance to the children, soon worked so smoothly that the head master found less than an hour a week to be adequate time for its supervision. The school in question serves a fair-sized village with a surrounding agricultural district. Medical surveys of 147 children, of whom rather less than a third were "school-fed," demonstrated that with the exception of one case these children were in better condition than the "home-fed." There were no badly nourished children in the "school-fed" group. The beneficial effect of the school midday dinner was most marked among the older children, who had in most cases been "school-fed" for two or three years. These striking results were obtained in a district where there is little poverty, and are attributed not to a calorific superiority but to a greater variety of diet in the school regime, for the home dinners were too frequently either stew or chipped potatoes. It is suggested that even more satisfactory results would be obtained by the application of this scheme in really poor districts.

Harlow Wood Orthopaedic Hospital

On July 28 Mr. R. H. Bernays, Parliamentary Secretary to the Ministry of Health, opened the new ward and extensions of the Harlow Wood Orthopaedic Hospital at Nottingham. These will provide twenty-one beds for male patients, rooms for about eight private patients, and additional accommodation for nurses. The total number of beds in the hospital is now approximately 155. Before the ceremony the eighth annual meeting of the hospital was held under the presidency of the Duke of Portland. The president of the hospital, the Duchess of Portland, in proposing the adoption of the annual report, said that the waiting list was larger than it had been at any time since the opening of the third ward three years ago. Mr. Bernays, in seconding the proposal, was impressed by the happy union of voluntary effort with support from employers, employees, and local authorities. He hoped that the progress made at Harlow Wood might be an incentive to the initiation of similar co-ordinated schemes in other areas. Mr. S. A. S. Malkin, supporting the adoption of the report, said that the Midland Colliery Owners' Mutual Indemnity Company had offered to give £5,000 as a contribution towards the provision of additional beds for the treatment of injured miners. This was an indication that what had been done in the past by the hospital had not only been beneficial to the men but had been a success from the financial point of view. Referring to co-operation between hospitals, he said that he hoped to see in the Nottingham area a grouping of hospitals with a joint contributory scheme, so that every patient could be admitted to the hospital best suited to deal with his or her case. Lieut.-Colonel G. A. Lewis, chairman of the Midland Colliery Owners' Mutual Indemnity Company,

handed to the president a cheque for £2,500, being the second instalment of the Company's gift of £5,000 for the provision of the new ward.

National Council of Social Service

The seventeenth annual report of the National Council of Social Service, 26, Bedford Square, London, W.C.1, has just been published under the title of *Voluntary Service* at the price of 1s. The report, which is well illustrated, gives among other things an account of the work it has done in promoting community centres in the new housing estates. It is now seven years since the National Council first took the initiative in forming a new estates community committee to consider the problem of social development in the new housing estates which surround the larger towns. It is pointed out that the evolution of the community life of the new housing estate cannot be effective without the participation of three agents: the local authority, the established voluntary bodies in the town, and the residents of the estate. It is reported that during the year no fewer than twelve local authorities have started schemes for community centres. Under the heading "The Challenge of Unemployment" the report refers to the need of the unemployed for organized help of the community, which may be given in many forms. The National Council is particularly concerned with that form which centres round the occupational club, of which there are now about 1,450 in England and Wales and Scotland. In these occupational clubs physical training has always had its place, and during the past year a special grant from the Ministry of Labour has enabled the National Council to develop it on a wider scale, a number of well-qualified instructors having been appointed.

Correspondence

The "Other Half" of Medicine

SIR,—The other day, at a psychiatric clinic where I work, I saw a patient suffering from a severe anxiety neurosis of nearly three years' duration. The documents attached to his case-sheet included a copy of a report from a distinguished physician on the staff of a well-known London teaching hospital, addressed to the patient's general practitioner, who had asked for advice. It ran as follows:

"I can find no evidence of organic heart disease in this case, and an electrocardiogram showed nothing beyond a simple tachycardia. Indeed, his symptoms could not possibly arise from the heart, and I agree with you that they are probably entirely of nervous origin. As you say, there may be some psychological factors at work which are the root of his trouble. I should favour reassuring him and continuing with the regular doses of bromide or luminal. Sometimes glucose taken between meals helps cases of this sort, and you might try it."

That type of logic surpasses belief. The case is a psychological one; therefore let us treat it by physical means! One did not have to be an orthodox Freudian to infer that the trouble might likely turn out to be psychosexual in origin on eliciting from the patient the information that he had his first anxiety attack on the day before his wedding (he had been "courting" for nine years). In the course of the interview it soon became clear that current and perfectly conscious and remediable sexual errors were responsible for the man's illness.

It is my belief that the advice which I gave to the patient and his wife will result in the spontaneous resolution of his symptoms within six months, without further psychotherapy. It is true that I spent an hour and a half on the case, and that it only takes a minute or two to prescribe bromide and luminal. But which is the better medicine?

In my introduction to my translation of Kretschmer's *Textbook of Medical Psychology* I said: "Medical psychology is not just a psychiatric 'sideline'—although it must provide the foundations for all sound psychiatric teaching—*but the 'other half' of medicine itself.*" That this truism is not appreciated by even the most distinguished exponents of the science and art of medicine in this country is a crying scandal. I should rejoice to be able to address the following letter to Dr. X:

"To-day I examined your patient, Mr. Smith. I agree with you that the patient is suffering from a (probably operable) cerebral tumour. I therefore recommend a course of psychoanalysis."

—I am, etc.,

London, W.1. E. B. STRAUSS.

Blood Alcohol and Drunkenness

SIR,—The question of the relation between the alcohol content of the blood and drunkenness has been much to the fore recently, and we have received a number of inquiries concerning the methods employed in determining blood alcohol. For some time past we have been investigating the extent to which figures for blood alcohol may be relied upon in assessing the extent of drunkenness, and, while this investigation is as yet incomplete, we feel that there are a number of points which it would be of value to bring to the notice of those interested in the subject.

First, there is the question of the method to be employed. There are two methods in common use: (1) Widmark's[1] micro-method, using one or two drops of blood; and (2) Southgate's[2] method, in which 2 to 5 millilitres (ml.) of blood are normally used. We ourselves use a modified Southgate apparatus and adapt the technique for either one drop or 2 to 5 millilitres of blood. It should be noted that the large-scale method is inherently more accurate than the micro-method. The Widmark method suffers from the drawback that the quantity of blood available is small. In all work of this nature both duplicate and control experiments must be performed, together with tests for interfering substances, such as acetone, so that the larger quantity of blood available for the Southgate method is preferable.

To illustrate the type of results obtained with our modified Southgate apparatus the following successive experimental determinations by both micro- and macro-technique are given. Alcohol content present in samples approximately 200 mg. per 100 ml.

Samples taken	Alcohol found
1. 0.1 ml. urine	202 mg. per 100 ml.
2. 0.1 ml. „	193 „ „
3. 0.135 g. blood	181 „ „
4. 0.146 g. „	176 „ „
5. 0.147 g. „	210 „ „
6. 0.152 g. „	186 „ „
7. 2.0 ml. „	187 „ „
8. 2.0 ml. „	187 „ „

Experiments 3 to 8 were performed on the same sample of blood.

[1] *Die theoretischen Grundlagen und die praktische Verwendbarkeit der gerichtlich-medizinischen Alkoholbestimmung.* 1932.
[2] *Biochem. J.*, 19, 737. (See also Evans and Jones, *Analyst*, 54, 135.)

Secondly, there is the question of material. Either blood or urine may be used, and it has been established that the ratio of alcohol in blood to that in urine varies narrowly about a mean figure of 1:1.35. In view of the common aversion of laymen to giving blood and the greater ease of collection of urine, especially in cases of drunkenness, we have found it very much simpler to work on urine. The quantity of urine available, moreover, makes it more easy to look for interfering substances.

Thirdly, it must be emphasized that it is the amount of alcohol absorbed into the blood which determines the extent of the intoxication rather than the absolute amount consumed. It has been established that part at least of the greater tolerance of the habitual drinker is due to his lower rate of absorption. Even taking this into account, it can be stated for any individual that a given blood alcohol concentration indicates a certain *minimum* alcohol consumption, and it is in this that lies the whole value of the test. The habitual drinker, of course, requires a larger consumption to produce a given concentration than does the occasional drinker.

Fourthly, there appears to be a feeling that certain cases will show strongly anomalous figures for alcohol concentration, and some people have an uneasy suspicion that they themselves might be regarded as under the influence of drink with a comparatively low alcohol consumption. We have not found this to be the case. It is generally accepted, and we have confirmed, that an alcohol concentration between 100 and 150 mg. per 100 ml. is the threshold concentration required to produce definite clinical symptoms of drunkenness. Our experiments all indicate that moderate consumption in an average person produces concentrations of the order of 45 to 80 mg. per 100 ml. in one and a half hours, which is well below the threshold. We have not attempted in our experiments, nor do we think it possible, to differentiate between anything more than the very broad stages of drunkenness, and in our opinion it is undesirable to classify intoxication any more precisely.

Moreover, persons charged with being under the influence of drink to a sufficient extent as to render them incapable of having proper control of a vehicle do not fall within the "doubtful" zone at all. In some typical police cases we found the following figures:

Blood alcohol	Percentage of cases
Below 100 mg. per 100 ml.	6
100—150 " "	11
150—200 " "	24
200—250 " "	47
Over 250 " "	12

Of these, those in the group under 100 mg. per 100 ml. were found "Not guilty," so that the fears of the innocent are unfounded in fact. Finally, we must emphasize that the blood-alcohol test does not penalize the guilty, except in so far as it renders the defence more difficult, but it is of enormous value to an innocent person. A person who has had a glass of beer and is charged on the strength of the odour of alcohol in his breath, or whose defect is due to disability or disease, has in the blood-alcohol concentration test a perfect answer to the charge.—We are, etc.,

J. DAVIDSON, M.B., Ch.B., F.R.C.P.Ed.
L. C. NICKOLLS, M.Sc., F.I.C.
Metropolitan Police Laboratory, Hendon, Aug. 19.

Treatment of Giant-cell Tumour of Bone

SIR,—If Dr. G. R. Osborn (*Journal*, August 14, p. 351) had been present at the discussion in Belfast he would have heard that there was general agreement upon three points:

1. That a tumour of bone could only be diagnosed with certainty by means of a biopsy.

2. That such a biopsy should consist of a free exploration of the tumour with pathological investigation carried out at leisure and not hurried in the operating theatre, for bone pathology is notoriously difficult, and there are few pathologists qualified to give an opinion in a difficult case.

3. That an osteoclastoma (benign giant-cell tumour) is capable of cure by the simple and safe surgical procedure of curetting.

The importance of these principles is emphasized by the case that Dr. Osborn quotes. This unfortunate man was subjected to *x*-ray treatment without any steps being taken to arrive at an accurate diagnosis. The tumour appeared to enlarge in spite of the treatment. An operation was then performed—a biopsy with immediate frozen sections from which a diagnosis could not be made, so the limb was amputated. Had he fallen into the hands of a surgeon who worked on the lines I have mentioned he would have had an early biopsy and a correct diagnosis, and his limb would have been saved by curetting.

I do not deny that radiation can arrest and cure an osteoclastoma, and there are cases in which inaccessibility or other reason may render this the treatment of choice. But why should the simple and safe surgical method which has been in use for forty years be abandoned for the much more dangerous method of radiation?

Those who advocate the use of radiation in the treatment of non-malignant tumours forget, perhaps, that they are using a method which must have an effect upon the other cellular elements besides those of the tumour. Skin, muscle, vessels, nerves, joint capsule, etc., must all be affected by the radiation, and the osteoclastoma requires, I believe, a heavy dosage. There is a real risk of interfering with function and, in a young person, with growth. A case which came under my observation at St. Bartholomew's Hospital some years ago emphasizes this point.

A young girl, a patient of a surgical colleague, had a tumour of the sacrum, which was diagnosed by biopsy as a benign giant-cell tumour. It was not considered practicable to open up thoroughly and curette, so radiation treatment was given and the growth arrested. But some years later she came to the orthopaedic department because of trouble first in one and later in the other hip-joint. It was then found that her sexual development had failed completely, no doubt because of the effect of the radiation treatment upon the pelvic organs; and she had a progressive slipping of the epiphysis of the head of the femur in each hip (adolescent coxa vara) with progressive arthritic changes such as are practically unknown in this deformity until much later in life. There is strong reason to believe that the development of the coxa vara and the subsequent degenerative changes in the hip-joints were also the result of the radiation treatment.

Dr. Osborn also suggested that the combination of radiation with biopsy is apt to render the tumour malignant. It is difficult to understand his reason for this. If a biopsy has not been done in the first place, there is nothing to prove that the tumour was not malignant from the start. Does Dr. Osborn suggest that merely cutting into an innocent tumour can render it malignant? If not, then the treatment by radiation is the only possible factor that can produce malignancy—surely another reason

against use of this method of treatment for an innocent tumour. I think that most surgeons will prefer to keep to the knife.—I am, etc.,

London, W.1, Aug. 19. R. C. ELMSLIE, M.S., F.R.C.S.

The Vocal Cords in Singers and Speakers

SIR,—One had hoped, in reading the report of the recent discussion on this subject, to have heard something, as Mr. R. R. Woods suggested, of the abnormalities of the larynx as seen by the stroboscope. Those who have witnessed the demonstrations of Stern in Vienna of this method—which is essentially suitable for the investigation of the larynx of the vocalist—will have been surprised to observe in a larynx apparently normal to ordinary indirect laryngoscopy one cord, for example, limping slowly along whilst the other moved normally.

It would be of interest to hear Sir Milsom Rees's experiences with the method in his unique field.—I am, etc.,

Manchester, Aug. 15. W. BRYCE MCKELVIE.

SIR,—All interested in the subject of singing and the care of voices of singers will welcome the further contribution by Sir Milsom Rees in your issue of August 7 (p. 292). The unique experience which Sir Milsom Rees has had through his long association with Covent Garden and the opportunities which he has had of observing the vocal habits of primitive tribes give him the right to speak with an authority which may be claimed by few others. Yet one feels that his statement that there is no such thing as a natural singing voice cannot be accepted unreservedly.

The larynx is primarily a sphincter mechanism guarding the lungs against the invasion of foreign material, and, secondly, it is a mechanism to maintain intrapulmonary pressure, fixing the thorax and helping to stabilize the pectoral girdle during violent movements of the upper extremity. The use of the laryngeal mechanism for the production of purposive sound is a much later adaptation, and has subsequently given rise to both speaking and singing. Anyone who is interested in this subject should read that excellent work by Negus, *The Mechanism of the Larynx*. The act of speaking or singing involves a highly specialized nervous and intellectual mechanism, and one cannot ignore the place which the intellect holds in both these arts. A child learns to speak by hearing the speech of others around it, and it is my belief that people learn to sing for the same reason. The sound pattern in singing is more difficult to imitate than the sound pattern in speech, as singing depends upon the appreciation and imitation of both pitch and tone. That there is a marked difference between the singing of primitive tribes and of cultured races does not cause a great deal of surprise, because the standard of development and the size of vocabulary of the primitive tribe is poor in comparison with the power of speech and the vocabulary of the cultured races. I believe that it is a fact that some of the pigmy races have such a limited vocabulary that they cannot communicate in the dark, as they are then unable to supplement their lack of articulate speech by a language of signs.

If there should be this difference in such an important and necessary function as speech between the savage and the cultured races it is not remarkable that a luxury art, such as singing, should remain undeveloped in primitive people. The increase in the range and quality of the singing voice in the civilized races must, I think, be due to the wider range of instrumental music, which serves as a pattern for the voice to imitate. Sir Milsom Rees points out that the savage tribes sing to the accompaniment of the tom-tom. I wonder whether this is the only sound pattern which the natives have to copy? I suppose that one can take it for granted that the actual anatomical mechanism is present in the less civilized races just as it is presumably present in the higher apes, and the essence of the problem is whether there is a faculty lying dormant which can readily develop under the influence of a suitable musical environment.

I am prepared to agree that nobody sings instinctively; but nobody speaks instinctively. It would be very unusual for anybody to attain the highest level of artistic attainment in any branch of the arts without some training, and I think the difference between training which is directed towards the acquirement of a specialized technique in any art should be clearly differentiated from the training which is primarily directed to the development of a natural aptitude for that art. It is the natural aptitude, which in singing is probably nothing more than a highly developed gift of mimicry, which makes a natural singer.

Granted that the vocal mechanism is a universal endowment, the most important difference between singers and non-singers lies in the brain and not in the larynx. One must agree with Sir Milsom Rees that probably the best singers are yet to be heard, but it seems to me that progress in this direction must inevitably be slow unless the essential problems of voice production are tackled by the combined efforts of the laryngologist and the teacher of singing—a point which I stressed in my paper at the Annual Meeting in Belfast. It surprises me not that vocal disabilities exist so frequently in professional singers and speakers, but rather that the vocal mechanism survives so well, in view of the many different methods of teaching which exist and the rather chaotic state of the subject at the moment. I wonder, too, how such apparently frail structures as the vocal cords survive the exacting demands made upon them in some of the heavier operatic works.—I am, etc.,

Manchester, Aug. 16. VICTOR LAMBERT.

Anaesthesia in General Practice

SIR,—Dr. H. Garner-Evans (*Journal*, August 14, p. 355) is to be congratulated on his happy experiences with pernocton, but it must be remembered, as indeed he himself suggests, that the defects of an anaesthetic may not be revealed until a really large number of trials have been made. Large numbers of administrations of pernocton have been carried out, chiefly on the Continent, and the record of them proves that although there is no question of its efficiency there is considerable doubt as to its safety when compared with the other commonly used barbiturates.—I am, etc.,

London, W.1, Aug. 18. J. BLOMFIELD.

Elongation and Dilatation of the Colon

SIR,—I have read the report of Professor J. R. Learmonth's "last word" on elongation and dilatation of the colon with great interest (*Journal*, July 24, p. 154). With due respect to his position in my alma mater at Aberdeen, I venture to point out that elongation and dilatation are usually only part of a late picture, found so frequently in patients who suffer from disabilities which, judging from the results of treatment, must be ascribed to faulty colonic function. This faultiness is most usually due to developmental abnormalities affecting the colon mechanically, and apparently producing elongation as well as dilata-

tion, which tend to disappear when the mechanical disabilities are adequately treated. In a few of my cases I have had opportunity to establish the fact of such reduction by direct inspection.

The degree of certainty with which one can relieve distressing symptoms (both intra- and extra-abdominal) in cases of colonic insufficiency which is not due to ordinary organic disease, and which react unsatisfactorily to medical therapy, is astonishing. It convinces me that these very common developmental abnormalities are the most important factors in the production of such symptoms. In particular, the evacuation of the colon attained is usually so satisfactory that patients speak of the act with enthusiasm!

I am fully aware of the hostile attitude towards surgical treatment of these conditions prevalent in the British Isles and elsewhere. Sir William Arbuthnot Lane, by advocating treatment which in many cases could only be described as disastrous, "queered the pitch" which he had so carefully prepared. The inadequate measures put forward by others, planned to relieve only parts of the trouble, met with the discouraging degree of failure which one would nowadays expect. In spite of all that the results of the treatment which I advocate (gradually evolved over a period of twenty-five to thirty years) make me wish that some other surgeons would fairly put it to the test. There is indeed ample material available. For that reason I have described the operation very fully in my book *The Colon as a Health Regulator* (Macmillan Company of Canada, Toronto—represented by Macmillan and Co., Ltd., London), which was reviewed in the *Journal* of June 19 (p. 1259).

My book is concerned chiefly with the recording of actual facts. The facts in relation to the results of treatment are so encouraging, and in some cases so surprising, that I am hopeful that those who are interested in the subject will read my book before they accept Professor Learmonth's dogmatic condemnation of surgical intervention when faulty colonic function has to be treated. I am convinced as to the efficacy of proper surgical treatment in these colonic cases. The propriety of the treatment is evidenced by the relief which it affords in the matter of local symptoms (both subjective and objective) and in giving a feeling of general well-being previously absent. One can speak, just as Professor Learmonth does, of "dramatic immediate improvement in function," and very few patients fail to maintain that improvement.

Armchair criticism is to be deprecated in the discussion of this matter, as it is in other practical problems. The fact is that very few can speak with justifiable conviction about the full surgical treatment I recommend because they have not tried it! Most of my patients have undergone careful and prolonged medical treatment by various doctors without relief. A recent very miserable one brought to me a dossier of prescriptions, diet sheets, regulations for daily life, etc., more than an inch thick. He had consulted twenty-two doctors, and had been to a special clinic in Paris—without any benefit. Yet within ten days of operation his outlook on life had become completely changed and has remained so. His remarks are exuberant with regard to his general health and the action of his colon! A similarly affected patient, operated on seven years ago, has been seen unexpectedly, owing to an injury, since I decided to write this letter. His enthusiasm concerning my treatment of his abnormal colonic conditions has not lessened, so that the effect of the operation need not be ephemeral, as some destructive critics would have it!—I am, etc.,

Montreal, Aug. 11. HENRY M. W. GRAY.

SIR,—In a note on *The Colon as a Health Regulator* by Sir Henry M. W. Gray (*Journal*, June 19, p. 1259), it is said that one statistical statement "does not accord" with another statistical statement. The first statement refers to the number of deaths—namely, four—in the series of 205 operations, while the second refers to the number of cases in which complete failure has to be recorded—namely, 1 per cent. in the series. As these figures deal with two entirely different computations the question of "accord" does not arise: on the other hand, there is no contrariety between them. The last sentence, "Other claims unsupported by figures may be even wider of the mark," can have no bearing whatever, as your reviewer up to this point has failed to prove anything wide of the mark.

The impression is inescapable that your reviewer indulges in fault-finding in questioning the data of the book, with the evident intention of disparaging this work, but those who know the character and reputation of the author will give no credence to such misleading statements. The really unfortunate result of such "notes," appearing as they do in a publication of the high standing of the *British Medical Journal*, is that they may turn medical men away from a study of the book and thereby, I am convinced, deprive many patients of the often very great and permanent relief that only the treatment outlined in this book can afford. Having had the opportunity of examining numerous patients submitted to the author's operation, I can assure your readers that Sir Henry is distinctly conservative as to the beneficial results attained. —I am, etc.,

W. M. MACNAB, M.B.

Victoria, British Columbia, Aug. 1.

SIR,—In reply to Mr. E. G. Slesinger's letter (*Journal*, August 14, p. 352), we must express our regret at having inadvertently misrepresented his views on the surgical problems of the elongated pelvic colon. In extenuation we can only say that we were misled by the very words which he quotes from his original paper: "The following remarks are therefore not intended to suggest that elongation of the pelvic colon necessarily results in the production of symptoms, but rather to point out that in certain cases such elongation produces results sufficiently severe to call for relief. . . ."

These remarks seemed to us to indicate that Mr. Slesinger believed that certain cases of uncomplicated dolichosigmoid were capable of producing symptoms requiring surgical treatment. While we are in complete agreement with many of Mr. Slesinger's published views, there is, nevertheless, a considerable divergence in our respective attitudes to some aspects of the subject; the chief difference is that we do not believe that dolichosigmoid in the absence of certain complicating factors can ever require surgical intervention.

Our opinion still coincides with that of Mr. Garnett Wright (*Journal*, April 28, 1928, p. 712), that the production of bands on the outer surface of the mesentery is due to plastic peritonitis set up by repeated attacks of partial strangulation, and not to a natural reaction of the body to the strain of an overloaded sigmoid colon. The cases referred to by Mr. Slesinger in his letter to the *Journal* of July 15, 1933 (p. 129), in which a peculiar type of constipation was produced by a prolapse of the loaded pelvic colon and consequent abnormal angulation at the pelvirectal junction, do not appear to us to require surgical intervention. Our own standpoint is that radical surgical measures should be reserved for patients in whom the clinical and radiological features present a characteristic

syndrome, as summarized by us in our letter to the *Journal* of August 7 (p. 293), and that such cases are by no means rare.—We are, etc.,

D. LIGAT.
St. Leonards-on-Sea, Aug. 18. T. D. OVEREND.

Insects and Disease

SIR,—I have read with interest Major-General W. P. McArthur's lecture (*Supplement*, August 14, p. 126), in which he states that the fever which afflicted Cromwell's troops in Ireland was typhus fever. I give you the true facts, leaving your readers to judge whether the disease was typhus fever or imported plague. On January 30, 1649, King Charles I was executed. In July of that year an English ship arrived in Galway with uniforms and supplies for the few hundred Royalist soldiers of Ormond's army quartered there. This vessel was said to carry in those supplies "the contagious infection of the plague in its first appearance in Ireland. . . . Plague broke out immediately." The *Annals of Galway City* (Historical Manuscript Commission, Tenth Report, Appendix, Part V, p. 500, London, Eyre and Spottiswoode, 1885) gives the following:

"That this Toune of Galway, the last year being the mayoralty tyme of Sir Walter Blake, Knight, was visited with the contagious infection of the Plague which continued from July one thousand six hundred and fortie nine till spring after."

"That all members of the toune have met in the country and have consented to a tax of two thousand marckes sterling towardes the charges of physitians and providing of all other necessaries requisit for the purifing and clensing of the said toune which was with all earnestness pursued by these intrusted with that charge."

The city once freed from infection, the inhabitants returned; Galway had lost 3,900, Dublin 30,000, from the plague. But despite all these sanitary methods, Galway City experienced later a second visitation. Colonel Lawrence, an officer of Cromwell's army, in his *Interest of Ireland* (Part II, pp. 86–7) writes:

"Plague and famine had so swept away whole counties, that a man might travel twenty or thirty miles and not see a living creature, man, beast, or bird; our soldiers would tell stories of the place where they saw a smoker, it was so rare to see either smoke by day or fire or candle by night."

Lawrence estimated that five-sixths of the Irish population had perished, an estimate adopted by Prendergast in his *Cromwellian Settlement of Ireland* (1863). The plague ran its course until 1653. Twelve years later, in 1665, it raged in London. General Ireton died of plague in Ireland. One would not expect that he would suffer from louse infection (typhus), and beasts and birds do not die of typhus fever or of "Buchan's malaria." Yet Galway City for nine months successfully resisted the Cromwellian siege, a proof of its powers of resistance, even with the loss of its best fighting men in two visitations of the plague.—I am, etc.,

Athenry, Co. Galway, Aug. 16. C. H. FOLEY.

Injection of Umbilical Vein in Retained Placenta

SIR,—Mr. David Currie, in his paper in the *Journal* of July 10 (p. 58), once more emphasizes the dangers of manual removal of the placenta—45.2 per cent. morbidity and 15.4 per cent. mortality are indeed staggering figures. Since the publication of his first paper (1932), in which he pleaded for a more extended use of cord injection, I have been employing this method with certain modifications for the treatment of retained placenta. Starting at St. Mary's Hospital, London, in that year, I have continued to use this form of treatment in the obstetric unit of Hong Kong University.

The technique is even simpler than that advocated by Mr. Currie, and has been reported elsewhere (1936). All that is required is a 200 c.cm. metal ear syringe. This is filled with warm sterile saline or water. The cord is re-cut and the nozzle of the syringe is pushed into the umbilical vein. One can tell if the nozzle is inserted in the vein, for when it is in this vessel it can be easily pushed down the cord. The nozzle being held firmly in the cord with the left hand, the contents of the syringe are rapidly injected. An assistant refills the syringe and a further 200 c.cm. are quickly introduced. Following this, Credé's manœuvre is attempted. In one case 800 c.cm. were injected without any deleterious effect before the placenta was expressed. One of the causes of failure of this treatment is the presence of a contraction ring.

The method as outlined above is so simple that even a midwife can undertake it. There are occasions when medical aid is not at hand and a midwife has to deal promptly with a major emergency. Rather than wait till the doctor's arrival and severe exsanguination of the patient, the midwife could at least try cord injection before putting her hand in the uterus to remove a retained placenta. In the Tropics manual removal of the placenta is even more hazardous than in England, for many of the patients who come to hospitals for their deliveries are suffering from a marked degree of secondary anaemia, malnutrition, infections, etc.

Lack of conservatism in obstetric practice is now recognized as a contributory factor in the high maternal mortality which is found in certain countries. Mr. Currie is to be commended for reviving a conservative method of treatment which has been allowed to remain in desuetude for a century.—I am, etc.,

Hong Kong, Aug. 6. W. C. W. NIXON.

Currie, D. W. (1932). *Lancet*, 1, 1087.
Nixon, W. C. W. (1936). *Chinese med. J.*, 50, 1832.

Tennis Elbow

SIR,—In the past the term tennis elbow was used in rather a vague sense, and many authorities included under it a heterogeneous collection of disabilities in the region of the elbow-joint and forearm. In order that the results of treatment may be of more comparative value it is necessary to have a standard definition of the term. Tennis elbow must, in virtue of its name, stand for the commonest cause of disability in the elbow of a tennis player.

According to Mr. G. P. Mills (*Journal*, July 31, p. 212) the commonest condition in his series of fifty-eight cases was one characterized by radio-humeral tenderness, presumed to be due to the nipping of the frayed edge of the coronary ligament. He does not mention what proportion of the cases were tennis players, however. In my own experience another condition is responsible for the majority of cases of tennis elbow, and is best designated as traumatic periostitis at the origin of the extensor carpi radialis brevis muscle. Both conditions may occur, and often do occur, in people other than tennis players. Mr. Cyriax, in the *Journal of Bone and Joint Surgery* (October, 1936) points out no fewer than twenty-six pathological conditions that have been described as responsible by various authors, all of which goes to show that tennis elbow is an incredibly bad term. Nevertheless, in order

to establish that traumatic periostitis of the extensor carpi radialis brevis is the responsible condition, may I give a brief description of its principal features.

1. It is in my experience the commonest of the disabilities occurring in the elbow of a tennis player.

2. It is brought on by the excessive use of the extensor carpi radialis brevis muscle, as in the fixation of the wrist in slight dorsiflexion to obtain the maximum grip on the racket.

3. It is localized to the site of origin of the muscle.

4. The pathology as shown by operative exploration is best described in stages. First, there is a tear at the site of origin of the tendon from the periosteum, with extravasation of fluid forming a localized oedema; the effusion of blood is slight owing to the relative avascularity of the tendon; secondly, the oedema or clot is organized, and forms a fibrous tissue adhesion. If the condition is extensive it may give rise to such a marked periosteal reaction that it will show in an x-ray film.

The localization of the site of the disability is dependent on the following factors:

(*a*) The pain occurs on increasing the tension in the extensor carpi radialis brevis muscle—for example, by active contractions as in lifting or gripping with the forearm pronated, or by passive stretching as in flexion of the wrist with the elbow extended. Mr. Cyriax points out a useful test: "Active extension of the wrist by a patient with tennis elbow causes him more pain when it is resisted by pressure on the heads of the metacarpals than when the pressure is applied on the tips of the extended fingers."

(*b*) The pain occurs at the site of origin of the extensor carpi radialis brevis muscle, and may in some cases be accompanied by pain in the line of the muscle itself.

(*c*) Tenderness is maximal at the origin of the extensor carpi radialis brevis muscle—that is, just *above* the capitellum on the anterior aspect of the humerus, and not strictly localized to the radio-humeral joint line or the epicondyle itself.

The results of treatment indirectly confirm the pathology, and treatment itself naturally depends on the pathological stage of the condition. In the acute stage rest from tennis is the main line to be adopted; occasionally manipulation dispersing the localized oedema will relieve the tension and so abolish the pain. In the second stage, the stage of adhesions, manipulation may rupture these tender structures and effect a cure. Lastly, open operation, whereby the periosteum is elevated from the bone in the affected region, can undoubtedly be successful in a still larger proportion of cases.

It is for reasons contained in the above description that I think the term traumatic periostitis should be accepted as synonymous with tennis elbow, and other cases, such as nipping of the frayed edge of a coronary ligament, ligamentous strain, bursa formation, arthritis of the elbow-joint, generalized fibrositis, or any of the other twenty-six pathologies which have been suggested, should be diagnosed under their appropriate headings.—I am, etc.,

Norwich, Aug. 10. G. K. McKee.

Malaria Control

Sir,—In the *Journal* of June 5 (p. 1175) there appeared a letter by Dr. W. M. McDonald on the use of quinine. If the figures given are correct, then each person would have had, on an average, a dose of 140 grains. At a daily dose of 5 grains that would be sufficient for thirty days and no more. But some of that quinine was used for curative purposes in large doses, so that the average of 5-grain prophylactic doses must have been taken for less than thirty days. It is obvious then that the quinine was not used properly as a prophylactic; the population could not possibly have had the daily dose of 5 grains over the necessary period of months.

This problem of quinine is very old, and also tiresome. From an extensive experience in such areas I am convinced that quinine is a most valuable prophylactic; and one wonders why there is so much doubt about. The figures given in this letter afford a perfect explanation. They seem to me to be a terrible admission of the failure of the *measures*, but scarcely concern the method, as the method was not followed. That is exactly what one finds in these malarial areas; where the people take their daily dose regularly and at the proper time they do not get malaria, or very seldom. It is the people who pretend to take it regularly but who certainly do not do so who go down; then they take very large doses and become seriously ill.

I suggest that Dr. McDonald's letter shows conclusively that it is the administration which is at fault and not the method. I consider that the agitation against the use of quinine as a prophylactic does a vast amount of harm. No one will decry the other measures, such as drainage, etc., but it is not often easy to apply them; whereas the quinine can be used everywhere and by everyone, with few exceptions.—I am, etc.,

Surrey, Aug. 15. W. F. Cooper.

P.S.—Actually, I am about to leave for a district where everyone is troubled with mosquitos, where malaria is quite bad. I do not even have nets. But then everything is drained, and if one fly or mosquito is found the boys have to turn out and hunt the source. So that it may be seen that I adopt every other means, as well as quinine, to live in comfort and health. It is when one goes about that one requires and finds the benefit of quinine.

Squint and Heterophoria

Sir,—In the discussion on squint and heterophoria in the Section of Ophthalmology at the Annual Meeting I was reported to have pointed out "the dangers involved in too radical operative disturbance of the extra-ocular muscles" (*Journal*, August 7, p. 285). It was what I think is a mechanically incorrect, and not a radical correction, to which I object. I consider that in squint the place of insertion of the muscles into the eyeball is not at fault; that advancement or recession operations cannot result in harmonious action of the recti and oblique muscles; and that the right operative procedure to correct the deformity is to lengthen a muscle that is too short by longitudinally splitting it into three strands and tenotomizing the two outer strands (lower and upper), and to shorten a muscle that is too long by dividing the tendon the necessary distance back from the eyeball and suturing tendon to tendon.—I am, etc.,

Londonderry, Aug. 19. J. W. Killen.

Spa Treatment in Hot Weather

Sir,—Professor A. J. Clark's paper on individual variation in response to drugs (*Journal*, August 14, p. 307) has inspired the following notes.

Dealing with spa waters as an external application the ratio of dose to body weight is negligible, but amongst other factors affecting response is the state of the weather at the time of treatment. I had a good opportunity of observing the reactions of twenty-one patients during the period of hot weather from July 30 to August 14. The cases included eight of osteo-arthritis, five of gout, four of muscular rheumatism and fibrositis, two of fibrositis and neuritis, and two of colitis.

All the gouty cases did well, and all but one were able to stand full treatment, most of them having immersion baths and

vapour baths on alternate days. Three of the osteo-arthritic group had to have their treatment times and the temperature of the water and packs reduced considerably, and even then complained of feeling unduly tired, with an increase of pain in the joints. They were all of similar age and condition. The remaining five cases of osteo-arthritis stated that they liked the hot weather. The muscular rheumatism group also stood the treatment well, but two cases of sciatica (fibrositic type) were quite content to be immersed in water at 98° F., and have treatment on alternate days only. The weather made no difference to the cases of colitis.

The blood pressure and pulse rate were taken before and after treatment, and were found, as usual, to come down where high and go up a little where low. The general feeling of well-being, with increased appetite, was apparent in all except the three osteo-arthritics, who still felt fatigued on reduced treatment. Though the cases are taken haphazard as they came to me, there was no obvious reason for this—for example, dental or other sepsis or other disease—in these three patients. One of them comes regularly in the colder months for osteo-arthritis of both hips, and can then stand full treatment with benefit.

The following two cases of osteo-arthritis and two cases of gout show in the first case of each condition normal reaction to normal treatment, and in the second cases the modifications necessary on account of the warm weather.

Case 1.—Age 64: osteo-arthritis knees, lower lumbar vertebrae, and fingers (Heberden's nodes); blood pressure, 180/100; pulse 76, regular. Treated by mineral water, 20 oz. daily; deep bath at 102° F. with undercurrent douche to back and knees at 110° F. for last half of bath; fifteen-minute bath followed by full pack to waist line for fifteen minutes. Three baths a week on alternate days. Mud packs to back and knees for fifteen minutes; short needle douche at 101° F., followed by thirty minutes' massage to thigh muscles and back. Three treatments a week. After a week's treatment the patient was walking better, with more movement of the lower spine and no pain; blood pressure 160/97; standing treatment well.

Case 2.—Age 68: osteo-arthritis hips and sacro-iliac joints, and slightly in the dorso-lumbar region; blood pressure, 170/100; pulse 66. Treatment was as above. After second treatment complained of feeling sick and tired; gave day's rest, and prescribed electric reclining bath at 100° F. for fifteen minutes, with sponging of forehead during bath and pack, which was only used for hips; three baths a week. No complaint of sickness or undue fatigue, and patient was able to finish course, with general improvement in walking and less stiffness on getting out of chair after sitting.

Case 3.—Age 70: gout; blood pressure, 190/105; pulse 78, regular. Chronic tophi in feet and wrists. Treated by deep-flowing water baths at 102° F. for fifteen minutes, followed by light pack, cold towels to chest, neck, and forehead for fifteen minutes; three treatments a week on alternate days. Vapour baths in cabinet to 110° F. for fifteen minutes. Cold sponging to forehead during bath, and small Leiter's coil to precordium with ordinary tap-water running through, followed by needle douche for three minutes, cooled down to 98° F.; light pack; three a week. After three treatments the blood pressure fell to 170/100, and after ten to 160/100; pulse 70. This patient had our normal treatment and did well.

Case 4.—Age 63: gout; blood pressure, 160/95. Recent acute attack of gout in great toes; first on the right side and then, while still on colchicum, potassium iodide, and much-restricted diet, attacked the left great toe as well. The acuteness had disappeared, but there was still some tenderness remaining ten days after all swelling had disappeared. Deep bath prescribed as above. Patient felt very tired after the bath, and disinclined to get up for dinner that evening. On seeing him the next morning he still complained of feeling tired. Prescribed a day's rest and a vapour bath next day, which I superintended at 11 a.m. Blood pressure before treatment was 150/90; pulse 60, regular, and of fair volume. Vapour bath (cabinet), temperature gradually increased to 110° F. in five minutes, kept at this for seven minutes; cold sponging forehead, and Leiter's coil to chest; two minutes' needle douche cooled down to 95° F.; no pack. Rested under cool sheet for fifteen minutes. Directly after bath blood pressure was 150/90; pulse 56. Had an hour in bed and got up for lunch, and went for a drive in the afternoon. Next morning he said he felt well; continued this mild vapour bath daily, except Sundays, for nine days. All tenderness had disappeared, was walking well and feeling better in every way.

The number of cases observed were too few to generalize on, but the personal factor was well brought out. I rather think that the patients who could stand full treatment in hot weather got quicker benefit than they would have done in cold weather.—I am, etc.,

Bath, Aug. 18. A. GORDON WATSON.

Insulin Hypoglycaemia

SIR,—In view of the letter from Dr. H. S. Pemberton in your issue of July 24, may I be allowed to draw attention to an abstract in the Epitome (*Journal*, June 19, No. 490, p. 98) of a paper by R. Freudenberg. His subject is the administration of insulin shock therapy for schizophrenia. He

"draws attention to the parallel between vitamin B_1 deficiency and insulin shock. Experimentally it has been shown that in both conditions there is a lessened intake of oxygen in the grey matter of the brain. . . . Freudenberg has found that the administration of vitamins B_1 and B_2 and adrenal cortex hormone has succeeded in interrupting coma in non-reversible cases of insulin shock. . . . The author claims that the administration of vitamins B_1 and B_2 is a valuable therapeutic agent in making insulin shock therapy safe."

No information is given as to whether the obvious extension of this experiment to diabetes has been tried, but it seems that vitamin B might possibly prove of use in such cases as those mentioned by Dr. Pemberton, and even more so in cases treated by protamine zinc insulin, where delayed overaction of the insulin is so hard to counteract.—I am, etc.,

Bathford, Aug. 9. A. G.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

John Hart-Mercer, M.B., Ch.B.Ed. has been elected to the Gwynaeth Pretty Studentship for three years from October 1, and he has been awarded the Nita King Scholarship for the same period.

At a congregation held on July 30 the following medical degrees were conferred:

M.D.—*J. D. Procter, W. B. A. Lewis.

M.B., B.CHIR.—*E. M. Evans, *P. Kidd, *C. R. Morison, *G. O. Richardson, *G. M. Fleming, *C. D. Anderson, *H. A. Brook, *T. P. H. McKelvey, *E. F. Aubert, *I. A. Guest, *P. F. Barwood, *J. O. Collin, *W. H. Ekin, *M. T. Parker, *E. A. Pask, J. F. H. Bulman, R. C. B. Barbor, F. S. Cosh, E. B. French, H. Haigh, J. P. Reidy, W. B. Waterfall, R. C. S. Dick, C. J. S. Sergel, R. W. Watts, J. P. Singer, C. T. A. Burgess, J. N. Fell, J. C. Gilson, E. A. G. Goldie, C. E. D. H. Goodhart, J. N. Horne, R. W. Markham, J. H. Moir, A. K. Pardhy, K. M. M. Sheldon, H. R. Wynne, L. G. Braddon, A. C. Cunliffe, W. G. Murray-Browne, R. C. Neville, M. Feiwel, C. M. Dickins, T. P. Myles, C. G. Scorer, P. H. Willcox, R. F. Ashwin, R. Edwards, N. F. Coghill.

* By proxy.

During the month of July the titles of the degrees of M.B., B.Chir. were conferred on M. B. Billington and G. M. S. Caldwell of Newnham College, and that of M.B. on E. M. Wright of Girton College.

POSTGRADUATE COURSES FOR INSURANCE PRACTITIONERS*

The following are particulars of postgraduate courses for insurance practitioners at the British Postgraduate Medical School, Hammersmith, London. These courses have been arranged jointly by the Insurance Acts Committee and the Ministry of Health. Those practitioners wishing to participate should apply at once to the secretary of their local panel committee for a form of application.

SEPTEMBER COURSE

This course will begin on Monday, September 20, and end on Saturday, October 2. The subjects are as follows: principles of the examination of patients; pain in the foot; common types of anaemia, diagnosis and treatment; ante-natal examination; common skin diseases; pneumonia; nephritis; enlarged prostate and cystitis; common diseases of ear, nose, and throat; diagnosis of nervous diseases; eye conditions in general practice; allergic diseases; chronic rheumatism; children's diseases in general practice; abdominal pain; infectious diseases; demonstration of local anaesthesia; surgery of the chest; migraine and headache; toxaemias of pregnancy; psychiatry in general practice.

The lecturers include: Professor Thomas Beattie, Mr. Robert Milne, Dr. Janet M. Vaughan, Professor James Young, Dr. R. T. Brain, Dr. J. L. Livingstone, Dr. Horace Evans, Mr. Terence Millin, Dr. George Bray, Dr. Charles W. Buckley, Mr. V. Zachary Cope, Dr. J. S. Anderson, Mr. John Hunter, Dr. Macdonald Critchley, Professor F. J. Browne, and Dr. Henry Yellowlees.

OCTOBER COURSE

This course will begin on Monday, October 18, and end on Saturday, October 30. The subjects are as follows: principles of the examination of patients; ante-natal examination; rheumatoid arthritis; possibilities and limitations of radiotherapy; demonstration of local anaesthesia; common types of anaemia, diagnosis and treatment; convulsions and similar conditions; frequency of micturition; diagnosis of nervous diseases; common diseases of throat, nose and ear; psychology in general practice; common skin diseases; obstetric injuries, immediate and remote effects; acute pyogenic infections, including those of the hand; pulmonary tuberculosis; children's diseases in general practice; toxaemias of pregnancy; dyspepsia; cholecystitis; the acute abdomen; eye conditions in general practice.

The lecturers include: Professor F. R. Fraser, Professor James Young, Mr. G. F. Stebbing, Dr. Janet Vaughan, Dr. Macdonald Critchley, Mr. V. W. Dix, Dr. J. R. Rees, Dr. R. T. Brain, Mr. V. B. Green-Armytage, Mr. Charles Donald, Dr. R. C. Winfield, Professor F. J. Browne, Sir Arthur F. Hurst, Dr. Charles Miller, and Mr. H. C. Edwards.

NOVEMBER COURSE

This course will begin on Monday, November 15, and end on Saturday, November 27. The subjects are as follows: principles of the examination of patients; physiotherapy; dyspepsia; pyuria; asthma; common types of anaemia, diagnosis and treatment; injuries and infections of the hand and wrist; endocrine disturbances in gynaecology; diagnosis of nervous diseases; common diseases of throat, nose, and ear; convulsions and fits; heart failure; haemorrhoids and varicose veins; difficult labour; streptococcal infections and recent therapy; common skin diseases; infectious diseases; acute abdominal emergencies; common respiratory diseases; children's diseases in general practice; eye conditions in general practice.

The lecturers include: Professor G. Grey Turner, Dr. A. E. Clark-Kennedy, Mr. J. Swift Joly, Dr. G. W. Bray, Dr. Janet Vaughan, Mr. J. P. Hosford, Dr. P. M. F. Bishop, Dr. J. Purdon Martin, Dr. Paul Wood, Mr. C. Naunton Morgan, Mr. Leslie Williams, Dr. Leonard Colebrook, Dr. R. T. Brain, Dr. W. Gunn, Mr. Philip Turner, and Dr. W. E. Lloyd.

* Details of grants payable by the Ministry of Health to insurance practitioners who wish to take these postgraduate courses will be found in this week's *Supplement* at page 153.

Medical News

The annual dinner of Westminster Hospital Old Students will be held at the Park Lane Hotel, London, on Saturday, October 2, with Mr. A. F. MacCallan in the chair. The inaugural address of the school will be given at the Caxton Hall, London, on Monday, October 4, at 3 p.m., by Sir Seymour Hicks.

An anonymous donor has offered the Royal Northern Hospital, Holloway, London, a gift of £40,000 provided that a similar amount is contributed by others interested in the work of London's seventh largest general hospital. This munificent gift is made in connexion with the special appeal for £350,000 for the reopening of wards and for the renovation and rebuilding of certain parts of the hospital.

The ninth annual conference of the National Smoke Abatement Society will be held at the Philosphical Hall, Leeds, on Thursday, Friday, and Saturday, September 30, October 1 and 2. The programme includes discussions on town planning and smoke abatement and education and smoke abatement, and papers will be read by representatives of the regional committees. Full particulars can be obtained from the secretary of the society, Chandos House, 64, Buckingham Gate, Westminster, S.W.1.

The fifth session of the Australasian Medical Congress was opened by Sir George Murray, the Lieutenant-Governor, at Adelaide on August 23. Four hundred and fifty medical delegates from all parts of Australia and New Zealand are attending the Congress. Oversea representatives include Professor Grey Turner from England and Dr. C. E. G. Beveridge from the Sudan. The congress is meeting for six days under the presidency of Sir Henry Newland. On the afternoon of August 23 the Chief Secretary, Sir George Ritchie, laid the foundation stone of the Institute of Medical Research, to which Dr. E. W. Hurst has been appointed director.

The tenth Congress of French-speaking Gynaecologists and Obstetricians will be held in Paris from September 30 to October 2, under the presidency of Professor Mocquot.

We learn from the *Pharmaceutical Journal* that new regulations imposed by the National Health Administration of China prohibit in all advertisements, circulars, labels, or wrappers of patent medicines any wording or meaning suggestive of the futility of professional medical treatment, or any contemptuous or detrimental remark about the medical profession.

Dr. H. M. O. Lester, Deputy Director of Sleeping Sickness Service, Nigeria, has been awarded a Carnegie grant for visits to the Congo, Tanganyika, the Southern Sudan, and other parts of Africa to study methods of sleeping-sickness control.

The King has granted Dr. Robert Scott Taylor authority to wear the Insignia of the Third Class of the Brilliant Star of Zanzibar conferred upon him by the Sultan of Zanzibar in recognition of valuable services rendered by him.

Dr. Jean Charcot, drowned when the *Pourquoi Pas?* foundered off the coast of Iceland, has been succeeded by Dr. Louis Martin, director of the Pasteur Institute, as a member of the French Academy of Sciences. Dr. Charcot is succeeded in the French Academy of Medicine by the author Dr. George Duhamel.

The Egyptian Medical Institute of Cairo, which is the oldest and largest European institute in Egypt, has elected as its president Professor Mecchi, director of the Italian Hospital and head of the Royal Society of Medicine at Cairo.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are
EDITOR OF THE *BRITISH MEDICAL JOURNAL, Aitiology Westcent, London.*
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The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh;* telephone: 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin;* telephone 62550 Dublin).

QUERIES AND ANSWERS

Ultra-violet Irradiation

"ULTRA-VIOLET" writes: I would be much obliged for information as to the present position of ultra-violet medication for people who are in tolerably normal health, but who for one reason or another are run down, overworked, etc. Is it likely to be of any assistance to them, and is there any objection to its frequent use over a period of years?

Vaccine Reactions

Dr. C. M. HEANLEY (Hassocks, Sussex), in reply to "Rural G.P." (*Journal*, August 14, p. 358), writes: What is meant by "persistently overdosed"? After experiments in South Africa doses of 6,000 to 7,000 millions of pneumococci at seven-day intervals were recommended as a suitable prophylactic. The trouble may be due to other organisms, perhaps in a blocked maxillary, frontal, or ethmoidal sinus, and not to the vaccine.

Cancrum Oris

Mr. G. H. PEAKE (Guildford), in reply to Dr. Hope Trant (*Journal*, July 3, p. 48), writes: I saw many cases of cancrum oris among the natives of Madagascar, and treated them by burning the base of the ulcerated surface very thoroughly with fuming nitric acid. My first case was that of a child aged 2. The sore, which began on the inside of the upper lip (left side), had perforated right through it; it did not appear to be painful, as the child was suckling well. There was a sanious and stinking discharge. Under light anaesthesia the wound was thoroughly cauterized with pure nitric acid. Four days later this was repeated, as the sore had spread. Five days after that a large piece of the superior maxilla came away with several teeth. The cavity was again thoroughly burnt. The wound was washed several times daily with lotio hydrarg. perchlor., 1 in 4,000, and stimulants were given. Three days later the wound had much improved and there was no sign of any further spread, but a new focus had started on the inner side of the right upper lip. The whole was cauterized again. This application checked the disease and the sore healed rapidly. Though the hole in the lip (and upper jaw) had been very extensive, the lip contracted and almost closed, leaving very little deformity. Out of seven subsequent cases treated in the same way one patient died. In this case the condition started in the left ear and the child died of exhaustion with cerebral symptoms.

LETTERS, NOTES, ETC.

Dangers of Glass Ampoules

Lieut.-Colonel H. H. KING, C.I.E., I.M.S. (ret.), writes: While in charge of a laboratory in India I noticed that when ampoules in which a vacuum had been created were filled with vaccine the inrush of vaccine carried in small particles of glass from the breakage of the stem. On examination of the deposit from several ampoules many of the glass particles were found to be minute enough to pass through an ordinary small hypodermic needle, and they could thus be injected into a patient along with the vaccine. If there are any manufacturing or other laboratories using this method of filling ampoules they should know of this danger. I notice that some firms are putting out ampoules containing two solutions separated by a glass partition that has to be broken before the two substances are mixed. Has the possibility of the dissemination of small splinters of glass in these ampoules at the time of breakage been examined?

An Unusual Treatment

"BEN TROVATO, M.D.," writes: In an entertaining book of naval reminiscences entitled *My Mis-spent Youth*, I came across the following passage: "One of the younger midshipmen who had a rather high-pitched voice, was observed not to be developing properly. A special drill was invented. He was stood on the end of the gun-room table, facing outwards and quite stiff, and then his feet were knocked forward. He fell three or four feet with a jarring thud. A few weeks of this treatment had the desired effect." I should like to know whether this inexpensive but slightly barbaric treatment of the undescended testicle is one more proof of the resourcefulness of the Royal Navy, or whether it is traditionally practised by other communities to whom gonadropic hormones are not available.

Holidays for Factory Girls

We have received the following appeal, signed by the Countess of Sandwich, Miss Lilian Braithwaite, Miss May Wynne, Mrs. Mary M. Paget, the Bishop of London, the Chief Rabbi, and Lady Loch, on behalf of the Factory Girls' Holiday Fund. "Will you allow us to make to your readers an urgent appeal for the Factory Girls' Country Holiday Fund? It has helped hundreds of the poorest of London's girls and women to go away for the August Bank Holiday week, the only clear week they could get in the whole year. Many more are hoping to get away during the next weeks; but at present our funds are exhausted. A large number of the girls sent away are hardly more than big growing children, having recently left school for work in factories and warehouses. This summer holiday means even more than a health-giving change of air and surroundings. Boarded with kindly cottagers living in their own well-ordered little houses, the girls and women exchange with country folk experiences which make life fuller and more complete. Those from London gain, too, a new interest in nature—in the cultivation of flowers, and fruit, and vegetables, and in the care of animals. Think what this means to people who live for the rest of the year in crowded dwellings and stuffy streets, often far away from parks and large open spaces! A summer holiday means much to most of us. To them it means a benefit which is almost indescribable. Will your readers help us to save these girls from bitter disappointment? Gifts will be thankfully received and acknowledged by the honorary treasurer, Mrs. Slater, Lowood, Hindhead, Surrey, or by Miss Canney, 75, Lamb's Conduit Street, London, W.C.1."

Corrigenda

In the paragraph on Messrs. Hewlett's preparation of para-aminobenzenesulphonamide at page 217 of the *Journal* of July 31 the name of this product was given as "P.B.A.S." This should have read "P.A.B.S."

Dr. L. G. MILLAR PAGE writes: In my letter on prominal in epilepsy (*Journal*, August 21, p. 393) I said: "Dr. Millman has reported a reduction of one-third in the number of fits in a year under prominal. . . ." This should have read: "Dr. Millman has reported a reduction *to* one-third in the number of fits. . . ." Or, more correctly, to quote Dr. Millman, "The total number of fits under prominal treatment is shown to be approximately one-third of the number during a similar period under luminal therapy."

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

169 Nutrition in Children

W. Kornfeld and E. Nobel (*Wien. klin. Wschr.*, June 25, 1937, p. 959) discuss the value of the modern methods of determining the state of nutrition in children. They come to the conclusion that the simple classification based on body weight and the usual measurements of height are satisfactory when applied to large numbers. In the case of children who require special supervision, however, other additional methods of examination, such as the investigation of the condition of the skeleton, of the muscles, and of the adipose layer are necessary. For the purpose of investigation children of average height and normal weight should be grouped together, those of average height but under weight forming another group, those of excessive or reduced height but of normal weight a third, and so on. These groups should then be investigated in detail and the findings correlated with the social conditions.

170 Iodine Poisoning

W. B. Seymour (*Arch. intern. Med.*, June, 1937, p. 952) reports a fatal case of exfoliative dermatitis due to the application of tincture of iodine to the skin. The patient was a man, aged 52, who was suffering from bilateral pulmonary tuberculosis. Treatment by artificial pneumothorax was instituted. The preparation of the skin consisted in the application of full strength tincture of iodine (*U.S.P.*), followed by the removal of the iodine with 70 per cent. alcohol. The sixth application was followed by a morbilliform eruption over the whole body, which became confluent on the back, but disappeared in three days. Ten days later iodine was again applied. The next day there was a generalized morbilliform eruption and the prepared area was a fiery red. By the sixth day after the last application of iodine the skin was peeling from the body in large sheets, leaving great denuded areas which exuded serum, so that the bed was constantly wet. There was a thick purulent discharge from the eyes and a profuse flow of viscid mucoid saliva from the mouth. Death occurred the same day. At necropsy, the tracheal mucosa was desquamated. The oesophageal mucosa had also desquamated and formed a cast of the lumen. Microscopical examination of the skin showed complete desquamation of the epithelium. In the corium there was a scant, diffuse infiltration of cells, consisting mainly of lymphocytes and polymorphonuclear leucocytes, with an occasional eosinophil cell. The author discusses the question of whether the iodine-tuberculosis relationship might have been responsible for the reaction, but believes that other factors must be considered. The fact that no reaction appeared until six applications of iodine had been made suggests a process of sensitization. The literature is surveyed and fourteen cases of hypersensitivity to cutaneous applications of iodine are quoted. The mortality rate was 46.9 per cent.

171 Nervous Sequelae of Artificial Pneumothorax

G. Poix and A. Jacquet (*Presse méd.*, May 19, 1937, p. 745) have come to the conclusion that the position of the patient during the production of an artificial pneumothorax may be responsible for the nervous lesions of embolic origin sometimes met with. It was noticed that left hemiplegia caused by a gaseous embolus often developed during the production of a right-sided pneumothorax. Such nervous lesions as convulsions or paralysis were found on the opposite side to the insufflation. Experiments have been carried out to show the course followed by gaseous emboli in the branches of the aorta following a change in the patient's position, and the results confirmed the original hypothesis. When a right-sided pneumothorax is created, the patient is usually lying on the left side, and if an embolus develops it would be expected to follow the direction of the innominate trunk, producing paralysis or convulsions on the left side. This has been found to be the case in thirteen instances. If the patient is in the dorsal or ventral position the left side is usually affected, but in inducing a left-sided pneumothorax with the patient lying on the right side the embolus follows the left common carotid, and nervous lesions appear on the right side. This has also been confirmed in actual cases. When injection is carried out below the clavicle or in the inter-scapulo-vertebral space with the patient in a ventral or dorsal position, the embolus passes along the innominate trunk with localization on the left side, and this was observed in six cases. If the patient departs from the horizontal position the emboli may escape from the cavities of the heart, and may cause delayed symptoms or death. The result of these observations is of value in determining the correct position when producing artificial pneumothorax. If nervous lesions develop during the procedure the patient should be placed either in the prone ventral position, in the horizontal position, or in the Trendelenburg position.

Surgery

172 Acute Pancreatic Necrosis

F. Bernhard (*Beitr. klin. Chir.*, June 9, 1937, p. 513) states that while acute pancreatic necrosis as an immediate sequel to biliary tract operations is so well known that many surgeons have been led to abstain from stretching the papilla of Vater, little attention has been paid to its occurrence months or years afterwards. The removal of gall-stones has been erroneously thought to confer immunity from acute pancreatic disease. Bernhard found, however, six cases of acute pancreatic necrosis occurring since 1900, and following 1,000 choledochotomies and 5,000 cholecystectomies. Nevertheless, surgical treatment of cholelithiasis does diminish the risk of acute pancreatic disease. The surmise that in such cases a stone in the common duct has been overlooked at operation is supported by their greater frequency after cholecystectomy than choledochotomy; in about one-half of the relevant cases in the literature in which exploration of the common duct was carried out at operation or necropsy after acute pancreatic necrosis one or more stones were found. Some reduction in the incidence of this condition would be achieved, Bernhard believes, if after removal of the gall-bladder the common duct were more often opened, explored, and drained. In diagnosis, late post-operative acute pancreatic necrosis may easily be confused with acute biliary peritonitis from perforation of the drainage site or the stump of the cystic duct. This catastrophe usually occurs within the first three months, but may happen as late as three years after operation. In the latter case, however, bile pigments appear quickly and abundantly in the urine and the diastase excretion is but little raised.

173 Anastomotic Ulcer

R. Alesandri (*Zbl. Chir.*, June 12, 1937, p. 1394) analyses 118 cases of post-operative jejunal ulcer seen at the Surgical Clinic in Rome in the past twenty years. The majority of cases occurred in males, aged between 25 and 50, following an operation for duodenal ulcer. In ninety-one cases gastro-enterostomy had been performed, and in twenty-one resection; statistics showed that peptic ulcer

in the jejunum occurred least often after retrocolic gastro-enterostomy in the former and after the Billroth II operation in the latter. The author is convinced that resection of the ulcer-bearing area is the only method which holds out hope of radical cure and prevention of relapses and complications. He has performed the radical operation fifty-three times, on fifteen occasions for post-operative jejunal ulcer. The operation giving the best results has been Billroth II—namely, gastroduodenojejunal resection and end-to-end jejuno-jejunostomy followed by retrocolic end-to-side gastro-enterostomy. The upper limit of the operation is the entrance of the left gastric artery into the stomach wall. The ulcer-bearing area is removed. Following this operation jejunal ulcer occurred in only 1.8 per cent. of the cases. The mortality of radical operation for post-operative jejunal ulcer is 15.3 per cent., and is higher than that of more conservative measures owing to technical difficulties, adhesions, penetration of the ulcer into the colon, mesocolon, or mesentery, and, rarely, perforation. In many cases, too, the patient requires immediate operation while in a low state of health. The author is convinced that the mortality figure of this condition would fall if the Billroth II radical operation was always performed.

174 Malignant Hypertension

L. Friedman and A. A. Eisenberg (*N.Y. St. J. Med.*, June 15, 1937, p. 1131) discuss their results in seven cases of bilateral partial adrenalectomy performed for malignant hypertension. As the aetiology of essential hypertension is controversial and medical treatment merely symptomatic this empirical adrenal surgery was attempted. From 1903 onwards an endeavour has been made by Josue, Vaquez, and later, Crile, to stabilize vasomotor control through the suprarenals, but with disappointing results. A more direct attack was suggested in 1934 by De Courcy by a partial bilateral adrenalectomy with an interval of from three to four months between each operation. The patients operated on were persons between the ages of 20 and 43, with blood pressures in the region of 250/150 mm. Hg and defective urea clearance. All complained of headache, dizziness, nausea, and retinal change; four had myocardial and three kidney damage. Of these seven, only one is alive, with improved health; two died from adrenal insufficiency, one acutely, the other after six months, two from cerebral haemorrhage, and two from subsequent disease. In five cases there was immediate symptomatic improvement, with a fall in the systolic pressure and improved urea clearance; three persons felt that the operation had been worth while. The amount of gland removed in five cases was more than one half, and proved to be within the safety limit; in the sixth, adrenal insufficiency, followed with low blood pressure, rapid pulse, high fever, and later coma. The glands examined showed marked thickening of the capsule and trabeculae, and microscopically hypertrophy of the arterial media.

175 Urinary Complications of Chronic Appendicitis

J. Salleras and A. von der Becke (*Urol. cutan. Rev.*, June, 1937, p. 395), who record two cases in men aged 35 to 45, state that appendicitis is not always a local disease, but like all infectious disorders may affect the whole organism and give rise to reflex phenomena in the urinary system which are toxic or infective in character. Nephritis, albuminuria, and haematuria may be manifestations of appendicitis lasting from a few hours to from two to five days, rarely longer, and disappearing abruptly. The haematuria, which may be renal, ureteral, or vesical, appears in all forms and at all stages of acute or chronic appendicitis. In chronic appendicitis the haematuria precedes the appendicular signs, is variable in amount, and usually has no sequelae. It may be macroscopic or microscopic, painful or painless, and it does not aggravate the prognosis. Surgical treatment is necessary, and consists solely in the removal of the appendix.

Therapeutics

176 Cryptorchism

E. Dahl-Iversen and U. Starup (*Hospitalstidende*, June 15, 1937, p. 657) report from the Rigshospital in Copenhagen their encouraging experiences with a gonadotropic hormone prepared from the urine of pregnant women and given to four boys between the ages of 12 and 16. In two of these cases the retention of the testicles was unilateral, and in the other two bilateral. The authors' survey of the recent literature of this subject shows that nineteen different writers have published 265 cases of undescended testicles treated with hormones. In 208 of these cases accurate reports have been published, and they show that complete descent, associated with growth of the testicle, occurred in 129 cases, or 62 per cent. Partial descent and growth of the testicle was achieved in twenty-five cases; the remaining fifty-four were unaffected. Several of these failures might be explained by the age of the patients—20 to 30—or by some previous unsuccessful operation. Bilateral cases react better to hormone treatment than unilateral cases, presumably because the latter usually depend on some mechanical obstacle to descent, whereas bilateral retention is more commonly due to some endocrine disturbance. In fourteen out of twenty-eight cases in which the physical development was perfectly normal, apart from the failure of the testicles to descend, there was no reaction, whereas there were good results in the overwhelming majority of the cases presenting well-defined clinical evidence of some endocrine insufficiency. The authors conclude that the hormone treatment of undescended testicle must now be considered superior to operative treatment, and they prefer to start treatment about the age of 14 to 15. Their lowest age limit is 12 years, since hormones given under this age are liable to induce precocious puberty.

177 Vitamin C Therapy in Pneumonia

E. Bohnholtzer (*Dtsch. med. Wschr.*, June 25, 1937, p. 1001) prefaces the account of her clinical experiences with arguments justifying the treatment of pneumonia with vitamin C or ascorbic acid. Among them is the observation that pneumonia is most frequent at those seasons in the year in which vitamin C deficiency is greatest. In addition to certain cases of bronchopneumonia and chronic pneumonia, she treated sixteen patients suffering from fibrinous pneumonia. Ascorbic acid was given by intramuscular injection and, later in the disease, by the mouth. This treatment was controlled by ascorbic acid analyses of the urine. During the first few days 400 or 500 mg. were injected three times daily until the temperature had fallen to normal or the appearance of ascorbic acid in the urine showed that the saturation point had been reached. Then, and until recovery, 100 mg. of ascorbic acid were given three times a day by the mouth; the sodium salt of *l*-ascorbic acid was given as this salt is better tolerated than pure ascorbic acid. Other treatment was limited to expectorants and drugs with an action on the cardiovascular system. In no case could ascorbic acid be demonstrated in the urine before treatment was instituted, and it was noted that with the same dosage the interval between the beginning of this treatment and the first appearance of ascorbic acid in the urine was longest when the disease was most severe. In a fatal case of bronchopneumonia this interval was as long as six days. In most cases the first appearance of the ascorbic acid in the urine coincided with a fall of the temperature. Even after the first injection there was often an encouraging response indicated by an improvement in the respiration and in the patient's symptoms, and it was remarkable that all the sixteen cases of fibrinous pneumonia yielded little or no sputum. The fall of the temperature in eight cases was by crisis.

Neurology

178 Dementia Praecox

W. M. VAN DER SCHEER (*Nederl. Tijdschr. Geneesk.*, July 3, 1937, p. 3120) during the last eighteen months has treated eighteen carefully selected cases of dementia praecox at the Groningen University Psychiatric Clinic with the insulin shock treatment advocated by van Sakel of Vienna. The method consists, first, in inducing a hypoglycaemic coma by intramuscular injection of insulin, and then, after it has lasted from one to one and a half hours, in injecting 100 grammes of 30 per cent. glucose intramuscularly, or 50 grammes intravenously. The treatment is continued for two or three months, with a rest day once a week. Of the eighteen cases so treated, seven recovered, five remained unchanged, and six showed some improvement but not complete recovery.

179 H. ARNESEN (*Tidsskr. norske Laegeforen.*, June 1, 1937, p. 569) has investigated the subsequent careers of 815 patients treated for dementia praecox at the Gaustad Asylum in Norway over the period 1915–29. Forty-three of the patients could not be traced, as many of them had accepted work abroad. Of the remaining 772, as many as 143 had recovered, while the rest were dead or still ill. If to this recovery rate of 18.5 per cent. be added a small percentage of the patients who could not be traced, it may be assumed that some 20 per cent. of all the patients recovered. Of these patients only one had been discharged as well, while 106 left the asylum as improved and thirty-six as not cured. A classification of the 143 recoveries according to the nature of the dementia praecox showed that forty-nine of the patients had suffered from catatonia, sixty-three from paranoia, eight from hebephrenia, and twenty-three from forms of dementia praecox that were difficult to classify. After a study of the history of each case ending in recovery the author comes to the conclusion that neither a bad family history nor sexual manifestations give ground for a bad prognosis. Sunstroke, shock due to operations, etc., and economic and social factors also do not seem to influence the prognosis, but drunkenness affects it badly. Prognosis is comparatively good when the origin of the dementia praecox is psychogenic, even when the dementia has lasted a very long time. Among the recoveries there were four patients who had been ill for more than twenty years, and one for more than thirty.

180 Insulin Shock Treatment of Schizophrenia

G. EWALD (*Med. Welt*, June 26, 1937, p. 899) points out that the new treatment of schizophrenia with insulin shock has been received with scepticism owing to the large number of former unsuccessful methods of treatment. He believes that schizophrenia is due to a lesion of the central and autonomic nervous systems, and that Sakel's induction of shock is the most important factor in the new method. He does not believe that this treatment is dangerous provided due care is taken. The amount of insulin capable of producing a state of shock must be found by experiment in each individual. At the beginning of the treatment patients complain of intense hunger; then they fall into a stupor. When a comatose state is reached half a litre of 35 per cent. dextrose is introduced through a stomach tube, and the patients awake in from fifteen to sixty minutes. Usually they are then pleasant, but later relapse into their previous condition. At the end of the course these relapses become less frequent and less well marked. Psychotherapy and regulated work are useful adjuvants in treatment. Epileptic seizures occurring during shock require the immediate injection of adrenaline or intravenous dextrose. Care must be taken in the introduction of the tube and in the prevention of choking from tenacious sputum or vomitus. After an experience with thirty-five cases Ewald comes to the conclusion that although there are many failures no treatment has hitherto effected so much good in so short a time in patients with long-standing schizophrenia. Early cases react best to insulin shock, but it is impossible to say how long the cure will last. In all cases of acute or subacute schizophrenia a course of insulin shock should be tried. This method combines intensive irritation of the higher centres, with laying down of fat in the body, which increases the vitality and strength of the patient. It combines the effects of an artificial interference and a biological reaction.

181 H. SALM (*Münch. med. Wschr.*, July 2, 1937, p. 1046), in a series of eighty cases of schizophrenia treated by insulin shock, has had several patients whom it was impossible to rouse from their coma by giving carbohydrates and adrenaline in large quantities. In some instances the patients were roused but were confused, sleepy, vomited repeatedly, and had a high temperature. Hypoglycaemia does not explain these untoward results, but the author believes that it may give rise to cerebral lesions which are not relieved by the administration of carbohydrates, and are due to a local disturbance of the carbohydrate metabolism in the brain cells. Confusional states and continued sleepiness are due to disturbances of the mid-brain, and are comparable with the clinical picture of epidemic encephalitis. Similarly, the occurrence of sweating and an alternating rapid and slow pulse are due to a disturbance of the extrapyramidal centres. In a case examined at necropsy haemorrhages were found in the region of the third ventricle, in the substantia nigra, and in the vegetative centres which regulate sleep, warmth, blood circulation and pressure, and sweating. These complications cannot be foreseen, and must be treated seriously, since they often end fatally in spite of massive doses of sugar and adrenaline. It is essential to maintain the circulation, and if the pulse remains good and the general condition is maintained, the patient will probably awake, even after a period of several days.

182 Direct Irradiation of Cerebral Tumours

C. A. ELSBURG, L. M. DAVIDSON, and C. G. DYKE (*Bull. neurol. Inst. N.Y.*, 1937, **6**, 1, 32) have made a preliminary report on the technique and results of the direct application of *x* rays to cerebral tumours exposed at operation. Most of the tumours of the glioma group can only be partially removed at operation, their deep subcortical ramifications being untouched. Their sensitivity to *x* rays varies enormously; the posterior fossa medulloblastomas of childhood give a response to deep *x*-ray irradiation after decompression, which appears to be better than removal, while in others, such as the astrocytomata and the glioblastomata, results are usually disappointing. With present methods not only is the liability to necrosis of the scalp and bone great but the tumour receives insufficient irradiation. In order to eliminate these disadvantages a very high voltage was used, and irradiation of irremovable and partially removable tumours was carried out in the operating theatre by direct application of the rays to the cortex through a layer of cellophane. A 200,000 volt 25 milliampere oil-cooled apparatus was used, and an elaborate portable lead screen was arranged in the theatre. In order to establish the maximal safe dose experiments were carried out on monkeys. It was found that over 4,000 *r* units caused definite neuronal destruction, but 3,000 *r* units could be used with impunity. Both the cerebrum and cerebellum were irradiated, smaller doses being used for the former as it was found that cerebral symptoms were more readily evoked, although some of the symptoms were very late in onset. In some cases in which no cerebral symptoms occurred there was depilation and bone necrosis on the side opposite the point of entry of the rays. In the applica-

tion of this technique to man eighteen cases of cerebral tumour were irradiated at operation, and although it is too soon to draw decisive conclusions, the method would seem to justify further trial and study.

183 Shivering

R. Jung, J. Doupe, and E. A. Carmichael (*Brain*, 1937, **60**, 1, 28) have investigated the physiology of shivering in man. They recorded the changes in the blood temperature of normal and abnormal subjects by means of a thermocouple inserted 5 cm. above the anal sphincter; the skin temperature was raised by means of radiant heat lamps and lowered with a blast of air from the fan of a vacuum cleaner directed through an ice container. The relation of shivering to the sensation of cold air on the skin and to the changes in blood temperature was observed. The authors were able to show that shivering occurred with a stable or a rising blood temperature. In a case of transection of the spinal cord they found that the application of cold to the anaesthetic legs and trunk caused no shivering, while the same stimulus given to the normally innervated skin readily induced this phenomenon. The hyperaesthesia to cold of a tabetic did not facilitate shivering. Destruction of the spinothalamic tracts abolished shivering below the level of the chordotomy, whereas damage to the pyramidal tracts had no effect. The character of the clonic movements of shivering was altered by lesions of the cerebellar tracts and by loss of deep sensation. On the other hand, lesions of the cerebral hemispheres had no effect, except on the spastic limbs, which showed the clonic shivering movements more easily. By lowering the blood temperature of a paraplegic patient and immersing the legs in cold water it was shown that shivering only began in the absence of an external sensation of cold when the fall in blood temperature had caused the patient herself to feel chilled. In a normal subject under similar circumstances shivering occurred much earlier. Thus by clinical observation the investigators were able to show that the efferent pathway for shivering lay in the anterolateral columns, and that the affector stimulus was a sensation of cold, either on the surface of the body or as a result of lowering the blood temperature considerably. There was no evidence that shivering is dependent on changes in blood temperature regulating a shivering centre.

Obstetrics and Gynaecology

184 Vitamin C Deficiency in Pregnancy

G. Gaehtgens and E. Werner (*Klin. Wschr.*, June 12, 1937, p. 843) recall that comparative estimations made on the blood of the umbilical vein and artery have proved that the foetus absorbs vitamin C from the placenta. Using the test recently described by Jezler and Kapp—an estimation of the time necessary to bring about the increased urinary excretion of vitamin C after the daily administration of 300 mg. of ascorbic acid—they found that in about 62 per cent. of healthy primiparae and 70 per cent. of healthy multiparae there was a relative vitamin C deficiency. Five or six days instead of four were required for "saturation." After correction for the amount of vitamin C excreted in the milk—6 to 8 mg. per cent.—they found no evidence that lactation, as such, brings about an increased necessity for vitamin C over and above the relative deficiency which previously existed during pregnancy.

185 Conservative Subtotal Hysterectomy

Voiquenne (*Scalpel*, Liége, May 29, 1937, p. 673) points out the disadvantages of carrying out a total hysterectomy in a young woman when a less radical procedure would suffice. Menstruation plays an important psychological part in a woman's life, and the suppression of the ovarian hormones upsets the endocrine equilibrium. It has been found that following a subtotal hysterectomy the menopause occurs before the age of 40 in 80 per cent. of cases, while normally this takes place before that age in only 5 per cent. of women. It is strongly urged that conservative treatment should be carried out whenever possible, and at least one ovary should be left in cases of chronic infection of the uterus and adnexa, and other diseases of the pelvic organs. The various procedures possible are discussed and details are given of a series of twenty-nine cases in which "fundic" hysterectomy was performed. This operation aims at retaining enough ovarian tissue and uterine mucosa for function to be preserved. Of the cases reviewed the end-result was excellent in sixteen instances, or 55 per cent. In these cases the patients were completely cured, and menstruated regularly. The result was considered satisfactory in a further five cases in which menstruation was irregular or had ceased, but there were no other signs of the menopause. In three cases the menopause had occurred, and in three others further intervention was necessary. There were two post-operative deaths, a mortality of 5.5 per cent.

Pathology

186 Culture of the Gonococcus

R. Winkler (*Derm. Wschr.*, July 3, 1937, p. 845) reviews the conflicting reports that have been published concerning the optimal conditions for the culture of the gonococcus. He mentions as additional sources of diagnostic difficulty the facts that occasionally strains are encountered which give results positive in smears and negative in cultures, and that the natural form is said to be a monococcus—the diplococci being a result of exuberant growth of fresh cultures. Anaerobic cultures have recently been recommended, and Winkler strongly confirms their value. Testing the A, C, and D plates of Neumann (*Arch. Derm. Syph.*, Wien, 1936, p. 173), which are respectively aerobic, made airtight with plasticine, and containing 10 per cent. CO_2 as a result of the addition of a fragment of CO_2 snow, he finds that in practice the technique may be simplified by using the A and D plates only. He divides gonococci into (1) aerophile, growing only on A or on ascitic-agar plates; (2) aerophobe, growing only on C and D; and (3) aerolabile, which grow irrespective of oxygen concentration. The three groups are equally common, and some 30 per cent. of all strains grow on C and D plates only. His clinical tests, like others recently reported, show that about one-quarter more cases of gonorrhoea can be recognized when direct microscopic is combined with cultural examination. He prefers blood-water agar plates to ascitic-agar, largely because gonococcal colonies do not produce haemolysis, which facilitates macroscopical decision as to which colonies to examine microscopically. The colonies are conical, non-confluent, bluish-white, and in time they turn yellow or brown.

187 Blood Sedimentation

A. B. Robins (*Amer. Rev. Tuberc.*, June, 1937, p. 763), in reviewing the literature on the blood sedimentation reaction, comes to the conclusion that it is a complex physico-chemical phenomenon depending principally on the relation between cells and plasma. In the opinion of most observers the important factors in the reaction are alterations in the plasma proteins. In a series of fifty-seven cases of chronic non-tuberculous pulmonary disease investigated by the author the erythrocyte sedimentation reaction was found to vary with the changes in the clinical condition of the patient. The variations seemed to run parallel with the extent and severity of the infectious process as manifested in the inflammatory reaction produced. Comparative studies of the value of the erythrocyte sedimentation reaction, the total white blood cell count, the polymorphonuclear percentage, and the ratio of segmented and non-segmented forms of polymorphonuclear cells seem to indicate that the sedimentation rate is the most sensitive index of the clinical course.

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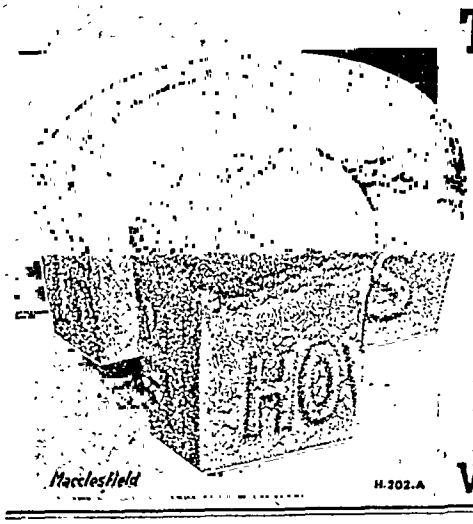
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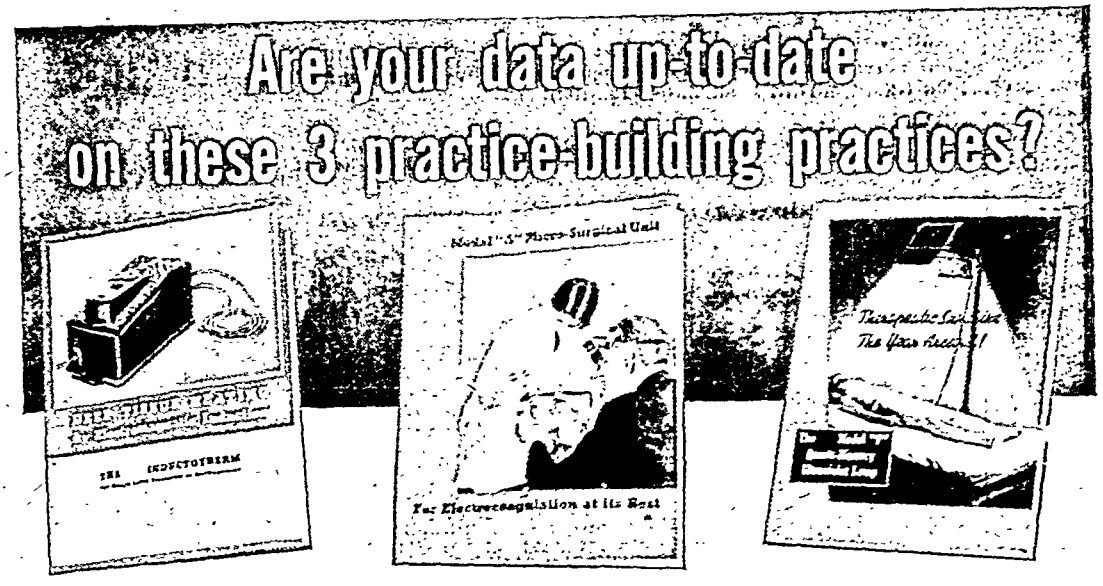
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THE RESIDENTIAL TREATMENT OF ALCOHOLIC & DRUG ADDICTION

RENDLESHAM HALL

(Postal Address) — **WOODBRIDGE, SUFFOLK**



RENDLESHAM HALL—SOUTH VIEW

Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

Rendlesham Hall has 45 bedrooms and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

Illustrated booklet giving particulars as to terms, etc., can be had on application to the

RESIDENT MEDICAL SUPERINTENDENT.

Telegrams and Telephone: WICKHAM MARKET 16. *(Toll Call from London.)*

Proprietors: The Norwood Sanatorium, Limited

RUTHIN CASTLE, NORTH WALES

The fees are from 15 guineas a week. They include medical attendance, all scientific investigations that may be needed, such as analyses, bacteriological cultures, the ordinary *x*-ray examinations, and electrocardiograph readings; all treatment that may be prescribed such as special diets, insulin, artificial sunlight, electrical treatment, baths, massage, nursing; medicines or vaccines, board and lodging.

The only extra charge is that for a complete alimentary *x*-ray examination, or for *x*-ray therapy.

All the usual forms of treatment are given at Ruthin Castle. The climate is mild. The annual rainfall is 30.5 inches, that is, less than the average for England. There is central heating throughout.

Address—THE SECRETARY, Ruthin Castle, North Wales. *Telegrams*—Castle, Ruthin. *Telephone*—Ruthin 66

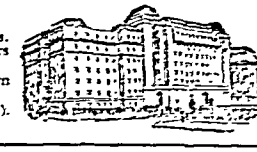
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Patients only received under the supervision of their own Medical Practitioner.
Drugs and Dressings free (other than Proprietary Articles).
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PECKHAM HOUSE, 112, Peckham Road, London, S.E. 15.

Telegrams: "Alleviated, London." **Telephone: Rodney 2641-2642.**

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Certified voluntary and temporary patients are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year. Terms from £3 3s. per week. Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.



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Full range of Hydropathic Treatments in Unrivalled suites of Baths, Turkish and Russian Baths, Aix and Vichy Douches, Massage, Plombieres Treatment, Studa Chair. Electric Installation for Baths and other Medical Purposes, Dowsing, Radiant Heat, Infra-red Light, Artificial Sunlight, D'Arsonval High Frequency Diathermy, Nauheim Baths, Soapless Foam Baths, etc. "Certified" milk from own Farm. Large Winter Garden. Orchestra. Special provision for Invalids. Night Attendance. Over 60 trained Male and Female Nurses, Masseurs, Attendants, etc.

Terms 13/- to 18/6 per day inclusive board.
Illustrated Brochure M.J. on request.

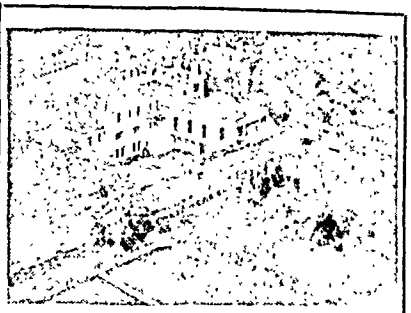
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G. C. R. HARBINSON, M.B., B.Ch., B.A.O. (R.U.I.); R. MacLELLAND, M.D., C.M.
'Phone: No. 17. 'Grams: Smedleys, Matlock.

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FOR THOSE REQUIRING CONTROL with EXPERT SUPERVISION and needing SPECIAL TRAINING in useful occupations, *SCHOOLS, FARMING, and various TRADE WORKSHOPS.*
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RECREATIONS: ALL outdoor games. EXCELLENT BAND by Male Staff for Concerts, Dancing, etc.
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HOSPITAL FOR CONSUMPTION
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PAYING PATIENTS RECEIVED.
BOTH MEDICAL and SURGICAL CASES.
5 to 8 guineas per week at the Hospital. 3 to 4 guineas per week at the Sanatorium.
APPLY TO THE SECRETARY:—BROMPTON HOSPITAL, S.W.3



SUNNYSIDE RESTORIUM,
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The Climate is mild but not relaxing. Overlooking the delightful South Downs, yet sheltered from cold winds.

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An invitation is extended to Medical Practitioners to inspect the Restorium.

Write for fully illustrated Brochure and Terms to: Physician in Charge, SUNNYSIDE RESTORIUM, Hassocks, Sussex.

'Phone: Hassocks 103.

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DENMARK HILL, S.E.5.
Telephone: RODney 2101.

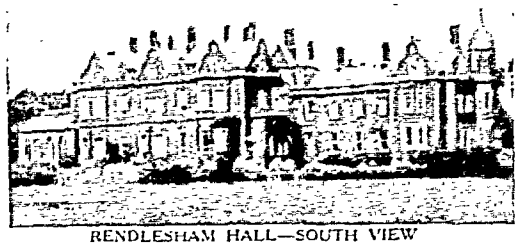
A CLINIC instituted by the London County Council for treatment of Nervous and Curable Mental Disorder. Voluntary patients *only* received.
New Out-patients.—MEN: Mondays and Thursdays, 2 p.m. WOMEN: Tuesdays and Fridays, 2 p.m. CHILDREN: Mondays and Fridays, 10 a.m.
In-patients: (a) 235 beds (both sexes) in wards or separate rooms including 35 beds in a ward of King's College Hospital, which is in use as a temporary annexe of the Maudsley Hospital; (b) a special ward (including some private rooms) for those patients of each sex who are paying the full cost and are otherwise suitable. Terms: £5 a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.
Terms include (with rare exceptions) all forms of treatment, for which there are exceptional facilities as there is a staff of Consultant Specialists, and the Central Laboratory of London County Mental Hospitals is attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., F.R.C.P., F.R.C.S., Medical Superintendent.

Tel. and Telegrams: "Haynes Brentwood 47"
LITTLETON HALL, BRENTWOOD, ESSEX.
Large grounds, 400 ft. above sea. HOME for ladies. Mentally afflicted. Voluntary. Paying received. Station Brentwood and [illegible] mins. Hospital St. 20 mins. Apply Dr. Haynes.

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Telegrams and Telephone: WICKHAM MARKET 16. *(Toll Call from London.)*

Proprietors: The Norwood Sanatorium, Limited

RUTHIN CASTLE, NORTH WALES

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The only extra charge is that for a complete alimentary *x*-ray examination, or for *x*-ray therapy.

All the usual forms of treatment are given at Ruthin Castle. The climate is mild. The annual rainfall is 30.5 inches, that is, less than the average for England. There is central heating throughout.

Address—THE SECRETARY, Ruthin Castle, North Wales. *Telegrams*—Castle, Ruthin. *Telephone*—Ruthin 66

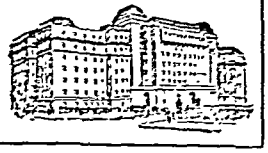
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A NURSING HOME FOR SURGICAL, MEDICAL AND MATERNITY CASES

Fees 10 gns. to 18 gns. per week (Average—14 gns.).
8 Operating Theatres.
150 State Registered Nurses.
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Drugs and Dressings free (other than Proprietary Articles).
Illustrated Brochure on application to Secretary.



PECKHAM HOUSE, 112, Peckham Road, London, S.E. 15.

Telegrams: "Alleviated, London." **Telephone: Rodney 2641-2642.**

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Certified voluntary and temporary patients are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year. Terms from £3 3s. per week. Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

CALDECOTE HALL

NUNEATON
WARWICKSHIRE
('Phone: Nuneaton 241)

Residential treatment of
FUNCTIONAL NERVOUS DISORDERS
Including Alcoholism and other Addictions
(Certifiable cases are not received)

This beautiful mansion situated in the heart of the country (less than two hours from London by L.M.S.R.) and surrounded by charming pleasure grounds in which games and outdoor occupational therapy are available is devoted to the treatment of Functional Nervous Disorders by psychotherapeutic and ancillary methods

Illustrated brochure and particulars obtainable from A. E. CARVER, M.D., D.P.M., Resident Medical Superintendent.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH

Detached Villas standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary, or Certified Patients may visit by arrangement, for long or short periods

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. **Telephone 51**

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Telegrams: "PSYCHOLIA, LONDON."

FOR THE TREATMENT OF MENTAL DISORDERS

Telephone: RODNEY, 4242 (2 lines)

Also completely detached villas for mild cases, with private suites if desired. Voluntary patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Putting Greens, Bowls, Croquet, Squash Rackets, Recreation Hall with Badminton Court, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Callisthenics, and Dancing Classes, *X*-ray and Actino-therapy, Prolonged Immersion Baths, Operating Theatre. Pathological Laboratory, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician, Dr. HUBERT JAMES NORMAN, assisted by three Medical Officers, also resident, and visiting Consultants.

An illustrated prospectus giving fees, which are strictly moderate, may be obtained upon application to the Secretary.

The Convalescent Branch is HOVE VILLA, BRIGHTON, and is 200 feet above sea-level.

CHEADLE ROYAL HOSPITAL

CHEADLE, CHESHIRE

This REGISTERED HOSPITAL, with a SEASIDE BRANCH at Colwyn Bay, N. Wales, is for the treatment and care of those of the Upper and Middle Classes suffering from MENTAL and NERVOUS DISEASES.

The Hospital is governed by a Committee appointed by the TRUSTEES of the Manchester Royal Infirmary.

In addition to the Main Building there are separate villas. Extensive grounds. Hard and grass tennis courts, cricket and croquet grounds, and a court for badminton. There are also wireless installations. Golf may be had within easy distance. Occupational therapy.

VOLUNTARY, TEMPORARY, AND CERTIFIED PATIENTS received.

The Hospital is nine miles from Manchester, 50 minutes by rail from Liverpool, and 3½ hours from London.

For terms and further particulars apply to the Medical Superintendent, who may be seen in MANCHESTER by APPOINTMENT.

Telephone: GATLEY 2231 (3 lines).

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Owing to extensions there are at present a few Vacancies at the

DAVID LEWIS COLONY

for Ladies and Gentlemen who have Epilepsy, but are of good intelligence and sound mind.

Colony life gives to most people who have epilepsy the best chance of happiness and contentment.

Apply to the Director.

The David Lewis Colony, Warford, Alderley Edge.

STRETTON HOUSE,

Church Stretton, Shropshire.

A PRIVATE HOME for the treatment of Gentlemen suffering from Mental and Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental and Nervous cases are received without certificates as Voluntary Patients under the provisions of the Mental Treatment Act, 1930. Bracing Hill country. See *Medical Directory*, p. 2328.—Apply to the Medical Superintendent. 'Phone, 10 P.O. Church Stretton.

SPRINGFIELD HOUSE,

Near BEDFORD. ('Phone 3417.)

For Mental Disorders with or without Certificates. Resident Physician CEDRIC W. BOWEN

Ordinary Terms: Five Guineas per week.

(Detached Nursing Residences where required.)

Interviews in London by Appointment.

CHISWICK HOUSE, PINNER, MIDDLESEX.

Telephone: PINNER 234.

A Private Hospital for the Treatment and care of Mental and Nervous Illnesses in both Sexes.

A modern country house, 12 miles from Marble Arch, in beautiful secluded grounds. Fees from 10 guineas per week, inclusive. Cases under Certificate, Voluntary, and Temporary patients received for treatment.

Douglas Macaulay, M.D., D.P.M.

"ECCLESFIELD," Staplehurst, Kent.

(Removed from Ashford, Middlesex.)

PRIVATE HOME for the CARE and CURE of ALCOHOLIC PATIENTS (Ladies). Large mansion, beautifully situated in 100 acres of park land. Extensive views. Home-farm. R.C. Chapel. Under the management of the Sisters of the Good Shepherd. Apply Rev. Mother. Tel.: Staplehurst 61.

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

Ladies and gentlemen received for treatment under certificates, and without certification, as either VOLUNTARY or TEMPORARY PATIENTS, at a weekly fee of TWO GUINEAS and upwards

THE GROVE HOUSE, CHURCH STRETTON, SHROPSHIRE.

A private Home for the care of and treatment of a limited number of Ladies mentally afflicted. Voluntary and Temporary Patients received under the new Mental Treatment Act, 1930.

Medical Superintendent, Dr. McCLINTOCK.

TYKEFORD ABBEY,

NEWPORT PAGNELL, BUCKS.

FUNCTIONAL NERVOUS DISORDERS MEDICAL AND CONVALESCENT CASES.

The Home is a Mansion of Historical interest, standing in 15 acres of garden and grounds, and is situated 14 miles from Northampton, and 12 miles from Bedford on the main London to Northampton Road, fifty miles from London. Both sexes are accommodated. Psycho-therapeutic Treatment is used extensively in suitable cases. Radiant Heat, X-Ray and Ultra-Violet Light, Diathermy and Foam Baths, Billiards, Tennis, etc.

Apply, Dr. D. E. M. DOUGLAS-MORRIS
Telephone: Newport Pagnell 121.

NORMANSFIELD

For Mental Defectives of either sex.
Under private management.

Apply to Dr. Langdon-Down
Normansfield, Teddington.

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LONDON COUNTY COUNCIL.—Accommodation for Male Patients (voluntary, temporary or certified) is provided in the Private Section of CLAYBURY MENTAL HOSPITAL, Woodford Bridge, Essex. Terms, exclusive of clothing and special luxuries, 42s. a week for London cases, 40s. a week for others.

For particulars apply to the Medical Superintendent at the Hospital, or to the Clerk of the Council, Mental Hospitals Department, Shell-Mex House, Strand, W.C.2.

BARNWOOD HOUSE
GLOUCESTER

A REGISTERED HOSPITAL for the CARE and TREATMENT OF LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L.M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 300 acres. Voluntary Patients of both sexes are also received for treatment. Special accommodation for Lady Voluntary Patients is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the Main Hospital. For particulars as to terms, etc., apply to—G. W. T. H. FLEMING, M.R.C.S., L.R.C.P., D.P.M., Medical Supt.
Telephone: No. 6207 Barnwood.

HILL END HOSPITAL AND CLINIC
FOR THE PREVENTION AND TREATMENT OF MENTAL AND NERVOUS DISORDERS.
(20 miles from London)

Ladies suffering from all forms of MENTAL ILLNESS are received for treatment, on modern lines, as Voluntary, Temporary, or Certified Private Patients at the Hill End Hospital. Convalescent or mild cases can be treated in a delightful country mansion, with extensive grounds, known as

HIGHFIELD HALL,

situate about a mile away from the Hospital. FEES: TWO TO THREE GUINEAS PER WEEK. For further particulars, apply to the Medical Supt., W. J. T. KIMBER, L.R.C.P., D.P.M.,
ST. ALBANS, HERTS.

HEIGHAM HALL, NORWICH

A PRIVATE MENTAL HOME, situated in 11 acres of well-wooded grounds. For Ladies and Gentlemen suffering from Nervous or Mental Illness. Voluntary Patients, Temporary Patients, and Patients under Certificate are admitted for treatment. Fees: from 4 guineas a week upwards, according to requirements. A few vacancies exist for Ladies and Gentlemen at reduced fees on the recommendation of the Patient's own Physician. Apply to Dr. J. A. SMALL. Telephone: 80 Norwich.
Telegrams: Small 80 Norwich.

THE GRANGE,
near ROTHERHAM.

A HOUSE licensed for the reception of a limited number of Ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. Approved for temporary Patients. This is a large country house, with beautiful grounds and park, five miles from Sheffield. Tel. No. 40030 Ecclesfield. Res. Phys.: GILBERT E. MOULD, L.R.C.P., M.R.C.S. Station, Grange Lane L. & N.E. Rly

FENSTANTON,
CHRISTCHURCH ROAD, Streatham Hill, S.W.2.

A Private Home for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Certified, Voluntary, and Temporary Patients received. Large Mansion with 12 acres of grounds. (See *Medical Directory* p. 2312.) Apply, Resident Physician. *Telephone*: Tulse Hill 7181.

BAILBROOK HOUSE BATH.

For sufferers from Nervous and Mental Disorders with or without certificates
The house is gloriously situated in wooded grounds of 20 acres with magnificent views of the City and the Avon Valley. (See *Medical Directory*, page 2322.)
For terms apply, A. GUIRDHAM, M.A., D.M., B.Ch., D.P.M., Resident Physician.
Telephone: Batheaston 8189.

HOME FOR EPILEPTICS
MAGHULL (near LIVERPOOL)

FARMING and OPEN AIR OCCUPATION for PATIENTS.
A few vacancies in 1st and 2nd Class Houses
FEES: 1st Class (men only) from £3 p.w. upwards 2nd Class (men and women) 32/- p.w.
For further particulars apply:
C. EDGAR GRISEWOOD, A.C.A., Secretary, 20, Exchange Street East, Liverpool, 2.

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS
NORTHAMPTON.
FOR THE UPPER AND MIDDLE CLASSES ONLY

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble, temporary patients, and certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms, with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, and X-ray room, an Ultra-Violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation Therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate, a mile of sea coast forms the boundary. Patients may visit this Branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.
At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.
For terms and further particulars apply to the Medical Superintendent (Telephone No. 2356 and 2357 Northampton), who can be seen in London by appointment.

HAYDOCK LODGE
NEWTON-LE-WILLOWS, LANCASHIRE

Teleg: Street, Ashton-in-Makerfield. *Phone*: Ashton-in-Makerfield 7311.
For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES suffering from mental and nervous diseases, either voluntarily, temporarily, or under Certificate. Patients are classified in separate buildings according to their mental condition.
Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

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for the treatment of eight Ladies, voluntary, temporary, or certified patients Large gardens and own dairy

CLIFFDEN, TEIGNMOUTH, for early and convalescent cases. A well-appointed house, with spacious balconies, and extensive views of the South Devon coast. Sub-tropical gardens, own dairy in 25 acres. Private road to beach.

		Telephones:
Resident Physicians	BERTHA M. MULES, M.D., B.S.	Starcross 59
	ANNE S. MULES, M.R.C.S., L.R.C.P.	Teignmouth 289

NORTHUMBERLAND HOUSE,
GREEN LANES, FINSBURY PARK, N.4.

A PRIVATE HOSPITAL for the treatment of mental and nervous illnesses. Conveniently situated and easy of access from all parts. Six acres of ground, highly situated, facing Finsbury Park. Voluntary and Temporary Patients received without certification. Occupational Therapy, Psychotherapy, and other modern forms of treatment.
Telephone: STAMFORD HILL 2688. Telegrams: "SUBSIDIARY, LONDON."
Convalescent Home, KEARSNEY COURT, DOVER. For further particulars, apply to the Medical Sup.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Occupational Therapy. Voluntary and Temporary Patients received.
Tel.: 64117. *For terms, etc., apply to the Medical Superintendent.*

The MUNDESLEY SANATORIUM

The central building makes the Mundesley Sanatorium the best equipped building in England for the cure of Tuberculosis. All the bedrooms have hot and cold running water, electric light, and wireless headphones. The public rooms are spacious and comfortable.

Resident Physicians:
S. VERE PEARSON, M.D.(Cantab.), M.R.C.P.(Lond.).
E. C. WYNNE-EDWARDS, M.B.(Cantab.), F.R.C.S.(Edin.).
GEORGE H. DAY, M.D.(Cantab.).

For all information apply:
THE SANATORIUM, MUNDESLEY, NORFOLK.
Telephone: Mundesley 94 and 95 (2 lines).

The buildings face S.S.W. and are sheltered from the sea by a pine-clad ridge. The sunshine record and dry air complete a perfect site. The medical equipment is of the latest kind, and there is a day and night nursing staff.

TERMS FROM 7½ GUINEAS WEEKLY.

THE CORNISH RIVIERA SANATORIUM

ROSEHILL, PENZANCE

For the treatment of patients suffering from tuberculosis

The Sanatorium stands in its own grounds of 13 acres of garden, lawn, and woodland, and is well sheltered from cold winds. The climate is mild in winter, cool in summer. Artificial pneumothorax, and other modern forms of treatment are available. Day and night nursing staff. Electric light. Wireless in all rooms.

Medical Supt.: *Francis Chown*, M.B.Lond., D.P.H., Consulting Physician (late Med. Supt.), Cornwall County Sanatorium.

Terms 5 to 7 guineas weekly. 'Phone: Penzance 598.

THE COTSWOLD SANATORIUM

First opened in 1898 and rebuilt in 1925. On the Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and all other forms of Tuberculosis. Aspect S.S.W., sheltered from North and East, elevation 800 feet. Pure bracing air. **Special Treatment by Artificial Pneumothorax** (X-ray controlled). **Tuberculins and Ultra-violet Rays** are available, when necessary, without extra charge. **X-ray plant.** Fully equipped Dental Department. Electric light. Radiators, hot and cold basins, and Wireless in all rooms. Up-to-date main drainage.

Full day and night Nursing Staff. Terms 5 gns. to 7½ gns. a week inclusive.

Med. Supt.: GEOFFREY A. HOFFMAN, B.A., M.B., T.C.Dub. *Assist. Phys.*: MARGARET A. HARRISON, M.B., B.S.Lond. *Pathologist*: EDGAR N. DAVEY, M.B., B.Ch. *Consult. Laryngologist*: CASSIDY DE W. GIBB, F.R.C.S.Edin. *Consulting Dental Surg.*: GEORGE V. SAUNDERS, L.D.S., R.C.S.Lond. Apply, Secretary, The Cotswold Sanatorium, Cranham, Gloucester. *Tel.*: 81 and 82 WITCOMBE. *Grams.*: "HOFFMAN, BIRDLIP."

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SPA CURE AT HOME

Particulars and testimonials of the Trefriw waters post free from THE SPA DIRECTOR, TREFRIW WELLS, TREFRIW, N. WALES, the only address from which the waters are obtainable.

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THE LONDON SCHOOL OF DERMATOLOGY

St. John's Hospital for Diseases of the Skin,
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Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations twice weekly during October and November, and again during January and February, and four times weekly during May. General Practitioners desiring to attend any particular lecture or occasional lectures can do so without paying a fee. Clinics daily at 2 p.m. and 6 p.m. Saturdays 2 p.m. only. The Laboratory is particularly well equipped and arrangements can be made for clinical and special investigation of the research work. Inclusive fees, etc. The Dean or Secretary of the School.

Westminster Medical School Hospital (University of London)

OPENING OF NEW MEDICAL SCHOOL BUILDING, JANUARY, 1938

Valuable Entrance Scholarships are awarded annually. Hospital Centrally Situated (opposite Westminster Abbey). Extensive Sports Ground. Entrance Fee £13 13s. Annual Composition Fee £42.

The Dean or Sub-Dean will be pleased to arrange for intending students and parents to inspect the Hospital and Medical School at any time. Only male students are admitted.

A prospectus and full particulars may be obtained on application to the Dean:

ADOLPHE ABRAHAMS, O.B.E., M.A., M.D., F.R.C.P., Westminster Hospital Medical School, Caxton Street, S.W.1.

Telephone: Whitehall 3665.

Kytca

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION

INTENSIVE SURGICAL COURSE for GRADUATES contemplating HIGHER DEGREES.

The Course will consist of daily Clinical Demonstrations in the Royal, Western, and Victoria Infirmaries, and systematic lectures on Surgery, Surgical Anatomy, Surgical Pathology, and Operative Surgery. It will run for six weeks, commencing last week of October. Detailed syllabus in September.

Further particulars from the Secretary Post-Graduate Medical Association, The University, Glasgow.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

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"How to Pass the F.R.C.S." free on application to the Secretary.

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23, Queen Square (Guilford Street), London, W.C.1.

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For particulars of short Intensive Postal and Oral Revision Courses apply SECRETARY, Medical Correspondence College, 19, Welbeck Street, W.1.

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Preliminary Examinations

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretaries, College of Preceptors, Bloomsbury Square, London, W.C.1.

THE MILROY LECTURES ON STATE MEDICINE AND PUBLIC HEALTH

The Council of the Royal College of Physicians are prepared to receive applications for the office of MILROY LECTURER for 1939.

Applications must be addressed to the Registrar, Royal College of Physicians, Pall Mall East, on or before September 15th, 1937, and should contain a statement of the division of the subject selected by the candidate.

The Course consists of Two Lectures.

The Lectures are to be given on a Tuesday and Thursday in February or March, 1939.

A copy of Dr. MILROY'S "Suggestions" on the subject of his bequest, and information as to the emolument, may be obtained from the Registrar.

August, 1937.

F.R.C.S. (Edin.).

POSTAL and ORAL COURSES.

Full details of above and Private Tuition.—H. C. OPPE, F.R.C.S., Surgeon's Hall, Edinburgh.

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CONTENTS: The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations.* Postal Courses, and Oral Classes. Suggestions for the Higher Medical Examinations. Suggestions for the Higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Courses. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, 17, Red Lion Sq., London, W.C.1 (Telephone: Holborn 6313.)

UNIVERSITY OF LONDON

Applications are invited for the WILLIAM JULIUS MICKLE FELLOWSHIP which is of the value of at least £200, and is awarded by the Senate to the man or woman who, being resident in London and a graduate of the University, has, in the opinion of the Senate, done most to advance Medical Art or Science within the preceding five years. Applications must be made before October 1st, 1937. Further particulars should be obtained from the Academic Registrar, University of London, W.C.1.

UNIVERSITY OF ABERDEEN.

CROMBIE-ROSS LECTURESHIP IN PSYCHO-PATHOLOGY

The University Court will shortly proceed to the appointment of the first CROMBIE-ROSS LECTURER IN PSYCHO-PATHOLOGY.

The appointment is a part-time one.

The salary proposed is £650.

Persons who desire to be considered for the office are requested to lodge their names with the Secretary to the University by *September 15th*, 1937.

The conditions of appointment may be obtained from the undersigned

H. J. BUTCHART,
Secretary to the University of Aberdeen.

The University, Aberdeen

ROYAL BERKSHIRE HOSPITAL, READING.

The Royal Berkshire Hospital School of Orthoptics is open to RECEIVE STUDENTS for TRAINING for the DIPLOMA in ORTHOPTICS.

Candidates must be of Matriculation or School leaving certificate standard.

Course starts in September.

Applications to be sent to the undersigned

H. T. RYAN,
Secretary and House Governor.

LONDON HOSPITAL MEDICAL COLLEGE AND DENTAL SCHOOL

THE WINTER SESSION will open on FRIDAY, OCTOBER 1st.

The London Hospital serves the East End of London, and with eight hundred and fifty beds is the largest voluntary Hospital in England. The *Out-patient Department*, which deals with a hundred thousand new patients per annum, is extensively used for teaching.

The size of the Hospital necessitates a large number of resident medical officers. Every year seventy resident house physicians and house surgeons and eighty salaried non-resident clinical assistants are appointed from among recently qualified students. The opportunities which these appointments offer for obtaining clinical experience are invaluable.

The Medical College is attached to the Hospital and is staffed by Professors of Anatomy, Physiology, Bacteriology, Chemical Pathology, Morbid Anatomy and Medicine of the University of London.

Special Courses in Anatomy and Physiology for the *Primary F.R.C.S.* and *advanced courses in* Surgery for the Final F.R.C.S. Examination, and in Medicine for the M.D. and M.R.C.P. Examinations, are held twice a year.

Entrance Scholarships and prizes of the total value of £950 are awarded annually. Research Funds to the value of £113,000 permit of assistance being given to students and graduates engaged in medical research.

The Medical College contains a modern Museum of Pathology and a Library provided with all the current medical periodicals in charge of a full-time librarian. There is also an Athenaeum Club and Dining Hall, a Gymnasium, a Fives Court, and two Squash Courts in the Students' Hostel. The Athletic Ground of 13 acres at Hale End is within easy distance of the Hospital.

The Hospital is only 20 minutes from Charing Cross and Baker Street Stations. For those who wish to live in immediate proximity to the Hospital there is accommodation for sixty students in the Students' Hostel.

Further details may be obtained from the Dean, Dr. A. E. Clark-Kennedy, M.D., F.R.C.P., Physician to the Hospital and Fellow of Corpus Christi College, Cambridge, who is always pleased to meet students wishing to see the Hospital and College and to whom application for admission should be made

Turner Street, London, E.1.

LONDON HOSPITAL MEDICAL COLLEGE

PRIMARY FELLOWSHIP EXAMINATION.

A COURSE OF INSTRUCTION for the above Examination will begin on Wednesday, Sept. 1st.

The fee for the Course is 15 guineas.

Further particulars may be obtained from Dr. A. E. CLARK-KENNEDY, M.D., F.R.C.P., Dean, Turner Street, Mile End, E.1.

THE UNIVERSITY OF SHEFFIELD.

FACULTY OF MEDICINE

The Council of the University and the Board of Management of the Royal Hospital, Sheffield, acting conjointly, are about to make an appointment to the post of ASSISTANT PATHOLOGIST to the Hospital and DEMONSTRATOR OF PATHOLOGY to the University. The salary offered is £500 per annum. Applications, accompanied by the names of three referees, should be sent on or before September 18th to the undersigned, from whom further details may be obtained.

W. M. GIBBONS,
Registrar.

THE OTAGO HOSPITAL BOARD.

UNIVERSITY OF OTAGO AND DUNEDIN HOSPITAL, NEW ZEALAND

Applications are invited for the position of RESIDENT MEDICAL OFFICER (Senior).

Candidates must hold a degree in Medicine of a British University, must have been qualified for three years, and have held resident hospital appointments for at least one year. Preference given to unmarried applicants.

The successful applicant will be required to act as Medical Tutor under the direction of the Professor of Medicine and as Superintending House Physician and Medical Registrar.

Salary to be at the rate of £550 per annum, with board and residence.

Full details may be obtained on application to the Office of this *Journal*.

JOHN JACOBS,
Secretary, Otago Hospital Board.

July 15th, 1937. Dunedin, New Zealand

THE EXAMINING BOARD IN ENGLAND

BY THE
ROYAL COLLEGE OF PHYSICIANS OF LONDON
AND THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND

Notice is hereby given that the following Examinations will commence on the dates stated below.

PRE-MEDICAL EXAMINATION
(Chemistry, Physics, and Biology)
Monday, September 20th.

FIRST EXAMINATION
(Anatomy, Physiology, and Pharmacology)
Thursday, September 23rd.

FINAL EXAMINATION
(Pathology, Medicine, Surgery, and Midwifery)
Monday, October 4th.

Candidates who have fulfilled the necessary conditions, and who desire to present themselves for Examination, must give notice in writing, to the Secretary, Examination Hall, 8/11, Queen Square, London, W.C.1, at least twenty-one days before the date of the Examination, transmitting at the same time such certificates as may be required by the Regulations of the Board.

HORACE H. REW, Secretary.

EXAMINING BOARD IN ENGLAND

BY THE
ROYAL COLLEGE OF PHYSICIANS OF LONDON
AND THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND

Notice is hereby given that the following Examinations will commence on the dates stated below.

DIPLOMA IN CHILD HEALTH
Friday, October 1st.

DIPLOMA IN PUBLIC HEALTH
Friday, October 8th.

Candidates who have fulfilled the necessary conditions, and who desire to present themselves for Examination, must give notice in writing, to the Secretary, Examination Hall, 8/11, Queen Square, London, W.C.1, at least twenty-one days before the date of the Examination, transmitting at the same time such certificates as may be required by the Regulations of the Board.

HORACE H. REW, Secretary.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

LICENCE IN DENTAL SURGERY

Notice is hereby given that the First Examination will commence on Wednesday, September 22nd.

Candidates who have fulfilled the necessary conditions, and who desire to present themselves for examination, must give notice in writing to the Director of Examinations, Examination Hall, 8/11, Queen Square, London, W.C.1, at least twenty-one days before the date of the Examination, transmitting at the same time such certificates as may be required by the Regulations of the Board.

HORACE H. REW,
Director of Examinations.

THE UNIVERSITY OF LIVERPOOL

The Council invites applications for the post of LECTURER (ungraded) in the DEPARTMENT OF PATHOLOGY. Salary £300 per annum. The appointment is for one year in the first instance. Applications, together with the names of three referees, should be sent on or before September 10th, 1937, to the undersigned. Further particulars may be obtained from the George Holt Professor of Pathology, to whom inquiries may be addressed.

STANLEY DUMBELL,
August, 1937. Registrar.

THE MANOR HOUSE HOSPITAL, GOLDERS GREEN, LONDON, N.W.11.

Applications are invited for the post of JUNIOR MEDICAL OFFICER. Salary at the rate of £200 per annum, with board residence. Candidates, male and unmarried, must be fully qualified and registered. Applications, stating full particulars and accompanied by copies of not more than three recent testimonials, should be addressed to the undersigned as soon as possible.

JAMES W. FINKHORN, I.C.C.S.,
Secretary.

ROYAL FREE HOSPITAL, GRAY'S INN ROAD, W.C.1

Applications are invited from duly qualified and registered medical women for the following post:

RESIDENT CASUALTY OFFICER.

Duties to commence October 1st, 1937, for six months. Salary £150 per annum. Candidates must have held previous resident Hospital appointments. Application forms may be had from the undersigned, and should be duly filled in and returned on or before September 11th, 1937.

RICHARD T. BARTLEY,
Secretary.

ROYAL NAVAL MEDICAL SERVICE.

Vacancies exist for Medical Officers in the Royal Navy, and applications are invited for entry in October, 1937.

Candidates below the age of 28 years are preferred, and they must be registered under the Medical Acts. No examination in professional subjects will be held, but candidates will be required to attend for interview by a Selection Board.

Selected candidates will be entered for Service for a period of three years in the first instance, which may be extended to five years at the discretion of the Admiralty.

At the end of three years' service officers may retire with a gratuity of £400, but those who serve for five years will receive £1,000.

At the end of five years' Short Service permanent commissions will be given to selected officers who wish to make the Naval Medical Service their permanent career. Officers transferred to the permanent list will receive a gratuity of £1,000 (less Income Tax).

Opportunities are available for officers on the permanent list to specialise, and ample provision is made for Post-Graduate study.

Copies of the regulations for entry and conditions of service, including rates of pay and allowances, may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1, and from the Deans of all Medical Schools.

Applications for entry from intending candidates must be received not later than August 31st, 1937.

COUNTY BOROUGH OF WEST BROMWICH.
HALLAM HOSPITAL. (472 Beds.)

HOUSE PHYSICIAN AND HOUSE SURGEON.

Applications are invited from duly qualified male registered practitioners for the above-mentioned posts. The post of House Surgeon will also include duties in the Maternity Wards (30 beds).

The appointments are for six months, with eligibility for a further six months. Either party may give six weeks' notice terminating the appointment. There is a visiting staff of eight physicians and surgeons, one resident surgical officer and three resident medical officers.

Salary £200 per annum, and also board-residence. All fees received by the persons appointed will be payable into the funds of the Council.

Applications, stating age, experience and qualifications, together with copies of three recent testimonials, must be forwarded to the Medical Officer of Health, 2, Lodge Road, West Bromwich, so as to arrive not later than by first post on Saturday, September 4th, 1937.

Canvassing, either directly or indirectly, is strictly prohibited, and will be deemed a disqualification.

Town Hall, ALFRED WICKHAM,
West Bromwich. Town Clerk.
August 20th, 1937.

LANCASHIRE COUNTY COUNCIL.

JUNIOR ASSISTANT MEDICAL OFFICER, WRIGHTINGTON HOSPITAL, APPLEY BRIDGE.

Applications are invited for the post of Junior Assistant Medical Officer (male, unmarried) for the Wrightington Hospital, which contains 205 beds for non-pulmonary tuberculosis (adults and children) and 20 beds for "combined" pulmonary and non-pulmonary cases. Salary £200 per annum, together with board, residence and laundry.

The appointment will commence on October 1st, or thereabouts, and will be for 12 months.

The medical staff consists of medical superintendent, two assistants, two consultant orthopædic surgeons and other visiting surgeons. There are excellent facilities for reading for M.D.

Forms of application and conditions of appointment obtainable from Central Tuberculosis Officer, County Offices, Preston. Letters to be marked "Wrightington M.O."

Closing date September 3rd.

GEORGE ETHERTON,
Clerk of the County Council.
County Offices, Preston.

HOLLAND (LINCOLNSHIRE) COUNTY COUNCIL.

ASSISTANT MEDICAL OFFICER OF HEALTH (male or female)

Applications are invited from duly qualified and registered Medical Practitioners (under 40 years of age) for the above appointment.

The salary will be £600 per annum, rising by annual increments of £25 to £700 per annum.

The duties of the post include school medical inspections, the carrying out of work under the Maternity and Child Welfare and Tuberculosis Schemes, and such other duties as may be required by the Council.

The person appointed will devote the whole of his or her time to the duties of the office, act under the direction and supervision of the County Medical Officer, and reside in such part of the district as may be required.

Post-graduate experience in the diagnosis and treatment of tuberculosis and the possession of a Diploma in Public Health will be additional qualifications.

Applications on the prescribed form, obtainable from the undersigned, accompanied by copies of not more than three testimonials, must be addressed to the County Medical Officer of Health, County Hall, Boston, Lincs, and received by him not later than September 7th, 1937.

W. G. BOOTH,
County Medical Officer of Health
County Hall, Boston.
August 7th, 1937.

CITY OF BIRMINGHAM.

DUDLEY ROAD HOSPITAL (926 Beds).

Applications are invited from fully qualified Medical Practitioners for whole-time appointment as JUNIOR MEDICAL OFFICER (male) at the Dudley Road Hospital, Birmingham. The appointment will be for a period of six months, but may be extended for a further period of not exceeding six months. Salary at the rate of £200 per annum and full residential emoluments. The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

Further particulars may be obtained from the Medical Superintendent at Dudley Road Hospital, to whom applications, stating age, experience and qualifications, with copies of recent testimonials, should be forwarded not later than Thursday, September 2nd, 1937.

CITY OF NOTTINGHAM
HEALTH DEPARTMENT

ASSISTANT TUBERCULOSIS OFFICER

Applications are invited for the appointment of Assistant Tuberculosis Officer (whole-time).

Applicants should be registered medical practitioners, preferably holding a Diploma in Public Health, and must have had special experience in the diagnosis and treatment of Pulmonary Tuberculosis, including the use of *X*-rays for diagnosis.

Applicants must be prepared to assist, by lectures and otherwise, in the development of an anti-tuberculosis campaign.

The salary will be on the scale of £500 per annum, rising by annual increments of £25 to £700, but in assessing the commencing salary, allowance will be made for previous service in an established position with another Local Authority.

The salary will be subject to deductions in accordance with the terms of the Local Government and Other Officers' Superannuation Act, 1922.

The successful applicant will be obliged to live within the boundaries of the City of Nottingham, and to terminate the appointment, one month's notice from either side will be required.

Forms of application may be obtained from the undersigned, by whom applications must be received not later than September 6th, 1937.

The Guildhall, J. E. RICHARDS.
Nottingham. Town Clerk.
August 14th, 1937.

CAITHNESS COUNTY COUNCIL.

The County Council invite applications for the post of SURGICAL SPECIALIST for the COUNTY of CAITHNESS. Applicants must be of the status of Fellows of the Royal College of Surgeons. Salary £1,000 per annum, inclusive of travelling expenses, supplemented by fees from private surgical practice. The successful applicant will be expected to act as Consulting Surgeon to two Voluntary Hospitals by arrangement with the Managers.

The appointment will be subject to the approval of the Department of Health for Scotland in terms of a Scheme under the Highlands and Islands (Medical Service) Grant Act, 1913. Further particulars of the post may be obtained from the Subscribers, to whom applications, with six copies of testimonials, should be lodged by September 10th, 1937.

County Offices, JAMES ROBERTSON,
Wick. County Clerk.
August 14th, 1937.

AMENDED ADVERTISEMENT.

SURREY COUNTY COUNCIL.

Surrey County Hospital, Wolverton Avenue, Kingston-upon-Thames.
(550 Beds Maternity Units 53 Beds)

RESIDENT OBSTETRICIAN.

Applications are invited for the above whole-time appointment from registered medical practitioners who have had good experience in Obstetrics Applicants must hold a higher qualification, e.g. F.R.C.S. or M.C.O.G.

The Hospital is approved by the Central Midwives' Board for the training of midwives and by the General Nursing Council as a full training school for general nursing.

The gross salary will be at the rate of £725 per annum, rising by £25 annually to £825, less a deduction of £125 per annum in respect of full residential emoluments.

Applications might be considered from married men prepared to provide their own accommodation in the immediate vicinity of the hospital; in the case of a non-resident appointment the deduction for emoluments would be correspondingly reduced.

The post is designated under the Local Government and Other Officers' Superannuation Act, 1922, and is subject to one month's notice on either side

Further particulars of the appointment may be obtained by letter or by personal interview from the Medical Superintendent of the Hospital, to whom applications, enclosing not more than three recent testimonials, should be sent not later than September 7th, 1937.

DUDLEY AUKLAND
Clerk of the Council

SURREY COUNTY COUNCIL.

ASSISTANT MEDICAL OFFICER

Applications are invited for the appointment of two Assistant Medical Officers (either sex) Applicants must possess a qualification in Public Health, and have had experience in the Medical Inspection of School Children, in Maternity and Child Welfare, and in the examination and certification of mentally defective children The officers appointed will be required to undertake such other Public Health duties as may be allocated to them. They will be on the staff of the County Medical Officer of Health, must reside in the County of Surrey, and devote their whole time to the work. Salary £600 per annum, rising by annual increments of £20 to £700 per annum. Travelling expenses in accordance with the Council's scale will be allowed.

The appointments will be subject to the approval of the Ministry of Health and of the Board of Education to the successful candidates passing a medical examination, to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and to the Staffing Regulations of the Council, which provide, *inter alia*, that appointments may be determined at any time by three months' notice.

Applications, stating age, qualifications, and experience together with copies of three recent testimonials, should be made on the prescribed form and sent to the County Medical Officer of Health, County Hall, Kingston-upon-Thames, from whom copies of the application form may be obtained, and to whom any inquiries relating to the appointment should be addressed.

Last day for receipt of applications, Wednesday, September 8th, 1937.

Canvassing, directly or indirectly, will disqualify

DUDLEY AUKLAND,
County Hall, Clerk of the County Council.
Kingston-upon-Thames.
August 21st, 1937

CITY OF SHEFFIELD

KING EDWARD VII HOSPITAL, RIVELIN VALLEY ROAD

RESIDENT ASSISTANT MEDICAL OFFICER (woman) required on October 1st for the above Hospital, which is for the treatment of surgical tuberculosis and other orthopaedic conditions (140 beds) The officer appointed will be required to attend the out-patient department for Surgical Tuberculosis and the Orthopaedic Clinic of the Maternity and Child Welfare Centre.

Salary at the rate of £200 per annum, with board and laundry

Appointment for twelve months

Applications, with testimonials should be sent to the Medical Superintendent.

BOROUGH OF BARKING.
PUBLIC HEALTH DEPARTMENT.

Applications are invited from Registered Dental Surgeons for the [illegible] appointment of ASSISTANT DENTAL SURGEON.

Salary scale: £450—£20—£550

Particulars of duties and application form can be obtained from the undersigned to whom such form must be returned not later than first post on Monday, September [illegible] 1937

[illegible] Park [illegible] S. A. JEWERS
August 13, 1937 Town Clerk

WEST RIDING OF YORKSHIRE MENTAL HOSPITALS BOARD.

APPOINTMENT OF MEDICAL SUPERINTENDENT

The West Riding of Yorkshire Mental Hospitals Board invite applications from duly-qualified medical practitioners for the appointment in their service of Medical Superintendent at the Wakefield Mental Hospital.

Candidates must have had previous experience as the Medical Superintendent or Senior Assistant Medical Officer of a Mental Hospital. Preference will be given to candidates who have obtained a Diploma in Psychological Medicine and have served the office of House Surgeon or House Physician at a general hospital.

The person appointed will be required to devote his whole time to the duties of the office and to act in conformity with the provisions of the Lunacy Act, the general rules and regulations of the West Riding of Yorkshire Mental Hospitals Board (as approved by the Board of Control), and of the Wakefield Visiting Committee.

The minimum and maximum salaries fixed for the position are £1,000 and £1,400, the annual increments being £50. The commencing salary to be paid will (within those limits) be according to qualifications and experience.

The person appointed will be provided with an unfurnished house, which will be deemed to be valued, for superannuation purposes, at the sum of £50 per annum. There are no other emoluments attached to the position. The salary and value of the unfurnished house will be subject to deductions under the Asylums Officers' Superannuation Act, 1909.

Application must be made on a form which can be obtained, together with any other particulars, from the undersigned, to whom the completed forms should be returned not later than September 11th, 1937.

Canvassing in any form will be a disqualification.

G. LESLIE BANNER,
Clerk of the Board,
Clerk to the Wakefield Visiting Committee.

Board Offices, Victoria Chambers,
Wood Street, Wakefield.
August, 1937.

THE WEST RIDING OF YORKSHIRE MENTAL HOSPITALS BOARD.
MENSTON MENTAL HOSPITAL, near LEEDS.

APPOINTMENT OF FIFTH ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment of Fifth Assistant Medical Officer in the Board's service at the above Mental Hospital, at a commencing salary of £350 per annum, rising by annual increments of £25 to a maximum of £450, together with emoluments (board, apartments and laundry) valued at £120 per annum. The Board will allow an extra £50 per annum to the successful candidate who (whilst on this scale) holds or obtains the Diploma in Psychological Medicine, for which this Hospital affords special study facilities

It will be an advantage if candidates have had at least one year's experience in general medicine after qualification.

The appointment is subject to the provisions of the Asylums Officers' Superannuation Act, 1909, Class 1.

Applications, with copies of not more than two recent testimonials, stating age and full particulars, to reach the Medical Superintendent, West Riding Mental Hospital, Menston, near Leeds, not later than September 6th, 1937.

There is no printed form of application.

G. L. BANNER,
Clerk of the Board.

Board Offices, Wakefield.
August, 1937.

THE ROYAL EASTERN COUNTIES INSTITUTION
for the Mentally Defective, Colchester.

ASSISTANT MEDICAL OFFICER (Male).

Applications are invited for the above post, from unmarried male Medical Practitioners not over 35 years of age. Total beds over 1,700.

The medical man appointed will be stationed at the new Extension, Turner Village, and will be required gradually to assume responsibility for administrative work connected with that extension, which has at present over 400 beds. For that reason the commencing salary has been fixed at £400 per annum, together with furnished apartments, board laundry, and attendance. No deductions. Previous specialisation in Mental Deficiency is not essential

A Research Department, with a Medical Director and other Staff, working under the Medical Research Council and the Rockefeller Foundation, is attached to the Institution. New Laboratories costing nearly £5,000 will be ready for occupation in October and there is every facility for research work.

Apply, before September 6th, giving age, [illegible] particulars of qualifications, and names of testimonials, to the Medical Superintendent, Royal Eastern [illegible], Colchester.

COUNTY BOROUGH OF BLACKBURN
PUBLIC ASSISTANCE DEPARTMENT

Applications are invited from Medical Practitioners (male) for the appointment of a RESIDENT JUNIOR ASSISTANT MEDICAL OFFICER at QUEEN'S PARK HOSPITAL and INSTITUTION.

The Staff consists of a Resident Medical Officer, a Resident Assistant Medical Officer, a Consulting Surgeon, a Laboratory Assistant, and an X-Ray Attendant.

There is a separate Infirmary, a separate Mental Block, and a separate Sanatorium for Children, and there is opportunity for experience in all departments, including Medical, Surgical, and Midwifery cases. An X-Ray apparatus is installed.

The person appointed will be required to devote his whole time to the duties and also to act as may be directed by the Resident Medical Officer.

The appointment will be limited to a term not exceeding one year.

Salary for the first six months at the rate of £150 per annum, and thereafter at the rate of £200 per annum, together with board, apartments, and attendance.

Applications, stating age, qualifications, and experience, accompanied by COPIES of not more than three recent testimonials, must be sent so as to reach the Public Assistance Officer, Public Assistance Offices, Cardwell Place, Blackburn, not later than 10 a.m. on September 8th, 1937.

CHAS. S. ROBINSON,
Town Hall, Blackburn, Town Clerk
August 20th, 1937.

LANCASHIRE COUNTY COUNCIL

Biddulph Grange Orthopaedic Hospital

Applications are invited from duly qualified and registered Medical Practitioners (unmarried) for the post of JUNIOR HOUSE SURGEON at the above Hospital, which contains 88 beds

Salary is at the rate of £200 per annum, together with board, residence and laundry.

Preference will be given to candidates who have held resident hospital appointments and who are competent anaesthetists. The appointment will be for a period of six months in the first instance, and for a further six months at the option of the Council, but will not be renewable after that time.

Applications, with copies of two recent testimonials, should be sent not later than September 4th, 1937, to Dr. F. Hall, School Medical and Child Welfare Department, County Offices, Preston.

Duties to commence October 1st, 1937.

County Offices, GEORGE ETHERTON,
Preston. Clerk of the County Council
August 16th, 1937.

CITY OF WAKEFIELD.

APPOINTMENT OF JUNIOR ASSISTANT MEDICAL OFFICER (MALE)

Applications from registered Medical Practitioners are invited for the post of JUNIOR ASSISTANT MEDICAL OFFICER in the Public Health Department. Preference will be given to candidates possessing the Diploma in Public Health Duties will be chiefly in connexion with the School Medical and Maternity and Child Welfare Services

Salary commences at £500 per annum and rises by annual increments of £25 to a maximum of £700 per annum

The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the passing of a medical examination.

Applications must be made on forms obtainable from the Medical Officer of Health, Town Hall Chambers, Wakefield, from whom further particulars may be had. Copies of three recent testimonials should be enclosed. Applications to be sent to me not later than September 4th, 1937

T. NICHOLAS GRIMSHAW,
Town Hall, Wakefield Town Clerk
August 14th, 1937.

CITY OF MANCHESTER

Booth Hall Hospital—760 Beds.

The Public Health Committee invites applications from registered medical men for the post of RESIDENT ASSISTANT MEDICAL OFFICER at the above-named hospital

The salary for the appointment is £200 per annum, with board, residence and laundry in addition subject to the Manchester Corporation conditions of service

The appointment will be made in the first instance for a period of six months, renewable for a further six months, but NOT beyond that period.

Full information and forms of application may be obtained from the Medical Officer of Health's Department, Lloyd House, Quay Street, Manchester, 3, and all applications for the post must be received by him not later than September 7th, 1937.

C. E. WARBRICK HOSSELL
Town Hall, Town Clerk
Manchester, 3
August 24th, 1937.

CHESHIRE COUNTY COUNCIL
CLATTERBRIDGE (COUNTY) GENERAL HOSPITAL, NEAR BIRKENHEAD.

MEDICAL SUPERINTENDENT.

Applications are invited from duly qualified male medical practitioners, with experience in the administrative control of a public general hospital, for the post of Medical Superintendent of Clatterbridge (County) General Hospital, which Hospital has been appropriated under the Public Health Acts.

The salary will be £1,000 per annum, plus emoluments valued at £150.

Candidates must not be more than 45 years of age. Applicants must hold one of the higher Medical qualifications.

The Medical Superintendent will be required to reside within easy reach of the hospital. He will be an Assistant Medical Officer on the Staff of the County Medical Officer of Health, and will be responsible to the County Medical Officer of Health, and through him to the Management Committee, for the control of the hospital, and for the supervision of the work of the Medical, Surgical, Nursing and other personnel.

The Hospital, which has accommodation for 291 patients and is to be enlarged to accommodate 400, provides treatment for medical, surgical and maternity cases, and has a staff of one deputy-medical superintendent, two resident assistant medical officers, and ten visiting specialists, with a nursing staff of 78.

The appointment will be made subject to the Local Government and Other Officers' Superannuation Act, 1922, and is determinable by three calendar months' notice on either side.

Canvassing, directly or indirectly, will disqualify the applicant.

Form of application and further particulars relating to this appointment can be obtained from the undersigned, and must be returned to him not later than September 15th, 1937.

Public Health Department, IAN MACKAY.
24, Nicholas Street, Chester. County Medical Officer of Health

BRITISH POSTGRADUATE MEDICAL SCHOOL.

There are THREE VACANCIES for HOUSE SURGEONS in the Surgical Unit, British Postgraduate Medical School, Hammersmith Hospital, Ducane Road, W.12.

The appointments are for six months in the first instance, and the holder may apply for a further period of six months. Salary at the rate of £105 per annum, with board, lodging and laundry. Duties to commence on October 1st, 1937.

Duties are mainly in General Surgery, but one appointment is to the Department of Traumatic and Orthopaedic Surgery. It is desirable that applicants should have held a previous House appointment.

Applications, with copies of testimonials, should be sent to the Dean of the School not later than September 13th, 1937.

BRITISH POSTGRADUATE MEDICAL SCHOOL.

Applications are invited from registered Medical Practitioners for the post of CASUALTY OFFICER to commence duty on October 1st, 1937.

The appointment is for six months and non-resident. Salary is at the rate of £150 per annum and the post is specially suited to candidates studying for higher qualifications.

Applications, accompanied by two testimonials, should be addressed to the Dean, British Postgraduate Medical School, Ducane Road, W.12, to arrive not later than first post on Monday, September 6th.

BRITISH POSTGRADUATE MEDICAL SCHOOL

Applications are invited for the post of RESIDENT ANAESTHETIST on the staff of the British Postgraduate Medical School at Hammersmith Hospital (L.C.C.), Ducane Road, W.12. The appointment will be for six months, to commence duty on October 1st, 1937.

Salary will be at the rate of £150 per annum with board, lodging and laundry. Preference will be given to candidates who have held a similar appointment.

Further information can be obtained from the Dean, British Postgraduate Medical School, Ducane Road, W.12, to whom applications accompanied by testimonials, should be sent, to arrive not later than first post on Monday, September 6th, 1937.

CITY OF LEICESTER

RESIDENT MEDICAL OFFICER

Resident Medical Officer (male) required for the City Isolation Hospital and Sanatorium, Groby Road. Appointment for a period of six months. Salary at the rate of £300 per annum, with the usual residential emoluments. The officer appointed may be required to assist with infant welfare work.

Applications, on forms to be supplied, to be sent to the undersigned not later than September 4th, 1937.

C. K. MACDONALD,
Medical Officer of Health
Health Offices, Grey Friars,
Leicester, August, 1937.

CITY OF BIRMINGHAM.
Public Health Department—Tuberculosis Section

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from single registered male medical practitioners for the post of Assistant Resident Medical Officer in the Tuberculosis Section of the Public Health Department. The successful candidate will be employed both in a Sanatorium and in a Dispensary.

Candidates should have held a resident general hospital appointment, and an appointment in some institution recognized for the treatment of the non-pulmonary forms of tuberculosis.

The commencing salary will be at the rate of £450 per annum, rising by £25 to £500 per annum, with emoluments valued at £150 per annum.

The officer appointed will be required to refund to the Council all fees, allowances and emoluments (other than the foregoing) received by him.

The successful candidate will be required to pass an approved medical examination, to contribute to the superannuation scheme established under the Local Government and Other Officers' Superannuation Act, 1922, as amended by Section 82 of the Birmingham Corporation Act, 1935 (Annuities for Widows), and, if under 30 years of age, to join the Birmingham Municipal Officers' Widows' and Orphans' Pension Scheme.

The appointment will be terminable by one month's notice on either side.

Forms of application and a summary of duties may be obtained from, and should be returned with three recent testimonials, to the Chief Clinical Tuberculosis Officer, 151, Great Charles Street, Birmingham, 3, not later than September 9th, 1937.

Council House, Birmingham, 1. F. H. C. WILTSHIRE, Town Clerk.

CITY OF LEEDS

ASSISTANT MEDICAL OFFICER

Applications are invited from qualified and registered Medical Practitioners for the post of Assistant Medical Officer for Maternity and Child Welfare. Applicants must have had not less than three years' post-graduate experience, including experience in General Medicine and Surgery, and special experience in Obstetrics and Ante-Natal work, and in the treatment of Children's Diseases and Diseases of Women. Preference will be given to candidates possessing the D.P.H.

The commencing salary for the post will be £500 per annum, and the present Grading Scheme of the Corporation provides for annual increments of £25, to a maximum of £700.

The person appointed will be required to pass a medical examination, and to contribute to the Superannuation Fund established under the Local Government and Other Officers' Superannuation Act, 1922. The appointment will be terminable by one month's notice on either side.

Form of application and particulars as to the duties of the appointment may be obtained from the undersigned.

Applications, endorsed "Maternity and Child Welfare Officer," together with copies of three recent testimonials, must be delivered at the Health Department, 12, Market Buildings, Vicar Lane, Leeds, 1, not later than 12 noon on Saturday, September 4th, 1937.

Canvassing in any form, either directly or indirectly, will be a disqualification.

J. JOHNSTONE JERVIS,
Medical Officer of Health.

DERBYSHIRE EDUCATION COMMITTEE

ASSISTANT SCHOOL MEDICAL OFFICER (male)

The Derbyshire Education Committee require the services of an Assistant School Medical Officer—male—at a salary of £500, rising by annual increments of £25 to £700 per annum, together with a travelling allowance in accordance with the County scale.

Candidates must be registered Medical Practitioners of at least three years' standing. The duties will include work under the Maternity and Child Welfare Service. Experience in this work and in Mental Deficiency is desirable.

The appointment will be a designated post under the Local Government and Other Officers' Superannuation Act and the successful candidate will be required to pass a medical examination.

The Officer appointed will not be allowed to engage in private or consulting practice but will be required to devote his whole time to the duties of the office and will act under the direction of the School Medical Officer.

Forms of application may be obtained from the undersigned, to whom they should be returned completed, together with copies of not more than three recent testimonials, on or before Monday, September 6th, 1937, endorsed "Assistant School Medical Officer."

The appointment will be terminable by three months' notice on either side.

W. M. ASH,
School Medical Officer.

New County Offices,
St. Mary's Gate, Derby.

WORCESTERSHIRE COUNTY COUNCIL.

ASSISTANT TUBERCULOSIS OFFICER (MALE).

The above-mentioned Council are about to appoint a whole-time Assistant Tuberculosis Officer and applications are now invited for this post.

Applicants must be registered Medical Practitioners between the ages of 25 and 45 years. Special experience and qualifications in Tuberculosis will be necessary, as work under the County Tuberculosis Scheme will form the chief part of the Officer's duties. He should have (1) at least three years' experience in the practice of his profession, (2) spent in general clinical work a period of not less than eighteen months, of which not less than six months have been spent in a Hospital as Resident Officer in charge of beds occupied by general medical or surgical cases, and (3) received special training, for a period of not less than six months, in the diagnosis and treatment of Tuberculosis and in Artificial Pneumothorax treatment. A Diploma in Public Health is desirable. The officer who is appointed will work under the supervision of the Chief Tuberculosis Officer.

The person appointed will be required to reside in the southern half of the County.

The salary will be £600, rising by £25 per annum to £700, with an allowance of £150 per annum for use of his own motor car. The engagement will be subject to three months' notice on either side. The post is designated under the Local Government and Other Officers' Superannuation Act, 1922, and a medical examination will have to be passed by the successful candidate.

Applications (on forms to be obtained from the County Medical Officer, County Buildings, Worcester), accompanied by not more than three recent testimonials, must be received by 15th day of September, 1937, addressed to the County Medical Officer, County Buildings, Worcester.

Canvassing disqualifies, and neither the names of the members of the County Council nor of the Committee will be supplied.

(Signed) C. H. BIRD,
Clerk of the County Council.

Shirehall, Worcester.
August 21st, 1937. (J. 133.)

COUNTY OF KENT.

ASSISTANT TUBERCULOSIS OFFICER (male).

Applications are invited for the above-mentioned whole-time appointment on the staff of the Public Health Department.

The duties will include attendance at dispensaries, clinical supervision of sanatorium beds, and such other work as may be assigned from time to time.

The salary is at the rate of £600 a year, rising, subject to satisfactory service, by annual increments of £25, to a maximum of £750 a year, with subsistence and travelling allowances, according to the county scale.

The post is designated as an established one under the Local Government and Other Officers' Superannuation Act, 1922, and is terminable by three months' notice on either side. The successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications and clinical experience, with special reference to practical experience in the diagnosis and treatment of tuberculosis, accompanied by copies of not more than three testimonials, must be received by the County Medical Officer of Health, Sessions House, Maidstone, not later than Tuesday, September 7th, 1937. No official form of application will be issued.

W. L. PLATTS,
Clerk of the County Council.

Sessions House, Maidstone.
August 23rd, 1937.

KENT COUNTY COUNCIL

RESIDENT ASSISTANT MEDICAL OFFICER

Applications are invited for the post of Resident Assistant Medical Officer at the County Hospital, Pembury (620 beds).

The salary for the appointment is £350 a year, rising by £25 a year to £450 a year, together with residential emoluments which are valued at £120 a year.

Applicants must have had experience in surgery and have held house appointments in a London hospital.

Forms of application can be obtained from the Public Assistance Officer, Tonbridge Road, Maidstone, to whom applications must be sent by 10 a.m. on Monday, September 6th, 1937.

W. L. PLATTS,
Clerk of the County Council.

Sessions House, Maidstone.
August 21st, 1937.

THE LADY CHICHESTER HOSPITAL, HOVE FOR FUNCTIONAL NERVOUS DISEASES
160 Beds.

SENIOR HOUSE PHYSICIAN required. Six months' appointment at £160 per annum all found.

Also JUNIOR, at £50 per annum. Valuable experience for Diploma in Psychological Medicine.

Duties to commence immediately. Applications, with testimonials, to be sent to the Secretary, Mr. P. F. Spooner, 33, West Street, Brighton.

August 21st, 1937.

GROSVENOR SANATORIUM, ASHFORD, KENT.

(216 Beds—4 Resident Medical Officers.)

Applications are invited from fully qualified men for the appointment of RESIDENT HOUSE PHYSICIAN. The appointment is for a period of at least six months at a salary of £100 per annum, with board, lodging and laundry.

Previous experience not necessary.

Applications, stating age, qualifications, nationality, and accompanied by copies of recent testimonials, to be sent to the Medical Superintendent.

PRESTON AND COUNTY OF LANCASTER ROYAL INFIRMARY.

HOUSE SURGEON, EYE, EAR, NOSE AND THROAT DEPARTMENT.

Applications are invited for the above position. Hospital Resident Staff—seven. (Male or female.)

Six months' appointment. Salary £150, with board, residence and washing.

Applications, stating age, qualifications and experience, together with copies of testimonials, to be forwarded as soon as possible to Mr. John Gibson, Superintendent and Secretary, Royal Infirmary, Preston.

MANSFIELD AND DISTRICT GENERAL HOSPITAL. (140 Beds.)

HOUSE SURGEON (Male) required. Duties to commence as soon as possible. Salary at the rate of £150 p.a., with residence, board and laundry. The appointment is for six months and is renewable. The staff consists of a Resident Surgical Officer and two House Surgeons. Applications, stating age, qualifications and nationality, accompanied by not more than three recent testimonials to be sent to the undersigned as soon as possible

C. J. ADAMS,
Secretary.

HARTLEPOOLS HOSPITAL, HARTLEPOOL (96 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male). Salary £175 p.a., with board, residence and laundry.

The appointment is for six months (subject to renewal). Duties to commence September 1st.

Applications, stating nationality, age, qualifications and experience, should be addressed to the undersigned.

NORMAN O. DEANS,
Secretary.

WEST HERTS HOSPITAL, HEMEL HEMPSTEAD.

(114 Beds 24 miles from Euston.)

SENIOR RESIDENT MEDICAL OFFICER required, to commence duties about August 1st. Male unmarried preferred. Salary £150, with rooms, board and laundry.

Applications, stating essential particulars and enclosing copies of three recent testimonials, to be sent at once to:

ROBT L BUTTERFIELD,
Clerk to the Hospital.

NORTH DEVON INFIRMARY, BARNSTAPLE.

Voluntary Hospital, 70 beds, including Maternity Ward

Wanted, September 28th, duly qualified SOLE RESIDENT MEDICAL OFFICER Salary £150 per annum, with board, apartments and laundry Appointment to be for not less than six months British nationality.

Applications, stating age, qualifications, with copies of testimonials, to be sent to the Secretary

ROTHERHAM HOSPITAL.

HOUSE SURGEON required for Ophthalmic and Ear, Nose and Throat Departments. Previous experience not essential Salary £150 per annum, with board and laundry

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. Roberts, 8, Moorgate Street, Rotherham.

ROTHERHAM HOSPITAL.

WANTED —SENIOR HOUSE SURGEON (Male), Qualified Salary £200 with board, residence and laundry 130 beds Excellent experience to be gained.

Applications, with copies of recent testimonials, to be sent to the Secretary G W Roberts, 8, Moorgate Street, Rotherham

BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN

HOUSE SURGEON (male or woman) wanted [illegible] October 1st, 1937. Salary [illegible] £120 per annum. Applications [illegible] and copies of testimonials [illegible] Medical Superintendent, [illegible] Birmingham, 3

ROYAL DEVON AND EXETER HOSPITAL, EXETER. (260 Beds.)

HOUSE SURGEON (Male).

Applications are invited for this post, which becomes vacant on October 1st.

The appointment is for six months, but candidates are eligible for re-election.

Salary at the rate of £150 per annum, with board, lodging and washing

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned on or before Tuesday, September 7th.

S. S. COLE,
Secretary and Manager.

August 20th, 1937.

THE ROYAL HOSPITAL, WOLVERHAMPTON.

(Incorporated under Charter.)

HOUSE PHYSICIAN required for mid-September. The Hospital contains 300 beds, the usual special departments and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months, with a salary at the rate of £125 per annum, board, furnished rooms and laundry provided.

Applications, with copies of testimonials, to the undersigned.

Wolverhampton. W. H. HARPER,
August 16th, 1937. House Governor.

DERBYSHIRE ROYAL INFIRMARY, DERBY.

(General Hospital—362 Beds)
Recognized under F.R.C.S. Regulations

Applications are invited (from single men) for the post of HOUSE PHYSICIAN.

Candidates must be qualified and registered under the Medical Acts.

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned.

Duties to commence September 20th, 1937.

ARTHUR TAYLOR,
Superintendent and Secretary.

August 23rd, 1937.

EAR AND THROAT HOSPITAL, BIRMINGHAM, 3.

THIRD HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Salary at the rate of £150 per annum, with lunch on six week-days, and an allowance of £50 per annum in lieu of board and lodging.

Appointment for six months to commence as soon as possible.

Candidates are eligible for election to Senior posts Facilities for training for D.L.O.

Applications and testimonials to be forwarded to the undersigned immediately.

W. H. LOMAS,
Secretary.

CITY MENTAL HOSPITAL, HUMBERSTONE, LEICESTER.

HOUSE PHYSICIAN (Male, single, under 30 years). Appointment is for six months at the rate of £300 per annum, together with board, lodging, washing, and attendance.

Candidates must have residential general hospital experience.

Hospital has over one thousand beds; there is a good laboratory and two active psychiatric clinics, one attached to the Leicester Royal Infirmary.

Applications, giving detailed particulars of experience, etc., together with references, to be sent to the Medical Superintendent not later than September 3rd.

DERBYSHIRE HOSPITAL FOR WOMEN, Friar Gate, Derby. (58 Beds.)

Applications are invited for the post of RESIDENT HOUSE SURGEON. Salary £150 per annum, with apartments, board, etc. The appointment is tenable for six months with a possibility of extension for a further period of six months.

Applications, with copies of not more than three testimonials, to be sent to the undersigned

Duties to commence September 1st, 1937.

W. T COCKER,
Secretary

THE ROYAL INFIRMARY, SHEFFIELD (500 Beds.)

The Board of Management invite applications for the post of SENIOR CASUALTY OFFICER

The salary attached to the post is £150 per annum, with board and residence. The appointment will be tenable for the period of six months from July 1st, 1937. The post is open to men who have held the appointment of Resident Surgical Officer

Applications, with copies of testimonials, to be sent to the General Superintendent and Secretary

August 9th, 1937

SALFORD ROYAL HOSPITAL (263 Beds).

Applications are invited from duly registered candidates (male) for:

HOUSE PHYSICIAN.
HOUSE SURGEONS (TWO).
CASUALTY HOUSE SURGEON;

for six months from October 1st. Salary £125 per annum

Forms of application, obtainable from the undersigned, should be delivered on or before September 7th next.

By order of the Board,
H. B SHELSWELL,
General Superintendent and Secretary.

August 27th, 1937.

WALSALL GENERAL HOSPITAL

The Committee invite applications from Men or Women for the post of HOUSE SURGEON. Must have had previous experience in the administration of Anaesthetics. Candidates, who must be registered under the Medical Acts, must produce three recent testimonials. The appointment will be for six months. Salary at the rate of £150 per annum The Hospital contains 145 beds and is equipped in all special departments

Applications to be sent at once to the undersigned.

WALTER FRANCOMBE,
House Governor

August 19th, 1937.

NEW KENT AND CANTERBURY HOSPITAL.

(181 Beds—4 Resident Medical Officers)

Applications are invited for the post of HOUSE SURGEON (male) to the Special Departments (Ear, Nose, and Throat, Ophthalmic and Genito-Urinary)

Appointment is for six months, and duties will commence as soon as possible after 6th September.

Salary £125 per annum, with board residence and laundry.

Applications, together with copies of recent testimonials, should be forwarded immediately to the undersigned.

S. I. WARD,
Secretary

PRINCE OF WALES' ORTHOPAEDIC HOSPITAL, CARDIFF.

Applications are invited for the post of HOUSE SURGEON (male, unmarried) at this Hospital (64 Beds) (having also a Country Branch at Croswell with 70 Beds). Salary £200 per annum, with board, quarters (at Cardiff), and laundry. The appointment is for six months in the first instance Duties to commence on October 1st or as soon thereafter as possible.

Applications, with copies of testimonials, should be sent to the Secretary, Prince of Wales' Hospital, Cardiff, not later than September 11th, marked "House Surgeon"

ROYAL SUSSEX COUNTY HOSPITAL, Brighton

HOUSE SURGEON (Male) required October 1st, 1937. Charge of beds. Salary £150 per annum, with board, residence and laundry.

Candidates must hold medical and surgical qualifications of the British Empire, and be duly registered under the Medical Acts

They must be unmarried, and, when elected, under thirty years of age

Applications, with copies of recent testimonials, should be sent to the undersigned

L. L. W LANCASTER GAYE,
Secretary Superintendent

EAST SUFFOLK AND IPSWICH HOSPITAL (350 Beds—8 Residents)

Wanted, September 15th, HOUSE SURGEON (male, British) to the Ear, Nose and Throat Surgeon and to an Assistant General Surgeon. Salary at the rate of £144 per annum, with board, apartments and laundry.

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, to be sent to the undersigned on or before September 1st

ARTHUR GRIFFITHS,
The Hospital, Ipswich Secretary
August 25th, 1937

GREAT YARMOUTH GENERAL HOSPITAL (72 Beds)

Applications are invited for the post of HOUSE SURGEON (one of two appointments) Duties to commence at once

Applicant must be male and unmarried Salary at the rate of £140 per annum, with board residence and laundry

Applications, stating age and qualifications, to be sent with copies of three recent testimonials to be forwarded to the undersigned

[illegible] GATFIELD
Secretary

NORTHAMPTON GENERAL HOSPITAL.
(293 Beds.)

There will be vacancies on October 1st for the following eight appointments:

SENIOR RESIDENT MEDICAL OFFICER. The appointment will be in the first instance for a period of twelve months at a salary of £250 per annum. The successful candidate will be expected to combine certain supervisory duties with the clinical work of one of the posts advertised below, and applicants should state which of these posts is desired. Candidates must have held a responsible resident post, but administrative capacity is more important than outstanding clinical ability.

1. HOUSE PHYSICIAN.
2, 3, and 4. HOUSE SURGEONS (three appointments).
5. HOUSE SURGEON to the Maternity and Gynaecological Department.
6. HOUSE SURGEON to the Ear, Nose and Throat Department.
7 and 8. CASUALTY OFFICERS. First and Second.

Salaries (with the exception of the Senior Resident Medical Officer) will be at the rate of £150 per annum, with board, residence and laundry. Candidates, who must be duly qualified and registered, must be males and of British nationality.

The successful candidates (with the exception of the Senior Resident Medical Officer) will be elected for a period of six months and will be eligible for re-election for a further period of six months.

Applications, stating age, qualifications, etc., with copies of three testimonials, must reach the undersigned not later than the first post on Wednesday, September 8th, 1937.

S. C. W. DISNEY,
August 23rd, 1937. Secretary-Superintendent.

CORNELIA AND EAST DORSET HOSPITAL, POOLE, DORSET.
(117 Beds)

HOUSE PHYSICIAN.

Applications are invited (from single men) for the post of House Physician.

Period six months. Salary at the rate of £150 p.a., with usual emoluments. Re-appointment may be applied for, and if granted the salary is at the rate of £175 per annum.

Duties to commence October 1st, 1937.

The Hospital is recognised by the Royal College of Surgeons of England in connection with the Final Examination for the Fellowship.

Applications, stating age, nationality, experience and qualifications, together with copies of three recent testimonials (which will not be returned), should reach the undersigned at the Hospital immediately.

Preference will be given to applicants who have already held a Resident appointment in a Hospital.

E. S. FOLEY,
Secretary.

NORTH WALES COUNTIES MENTAL HOSPITAL, DENBIGH.

The Visiting Committee invite applications from duly qualified male candidates, unmarried, for the post of JUNIOR MEDICAL OFFICER. Commencing salary, which will be subject to statutory deductions under the Provisions of the Asylum Officers' Superannuation Act, 1909, will be £350, rising by annual increments of £25 to £450 per annum, together with full board, residence, laundry and attendance, valued at £125 per annum for superannuation purposes. The appointment to be terminable upon one month's written notice on either side.

A knowledge of Welsh is desirable.

The person appointed will also be paid in addition to his salary the sum of £50 per annum if he holds the Diploma of Psychological Medicine.

Applications, stating age, qualifications, and accompanied by three recent testimonials, are to be sent to the Chairman of the Visiting Committee, endorsed "Junior Medical Officer," not later than Saturday, September 11th.

Dated this 19th day of August, 1937.

WM. BARKER,
Clerk to the Visiting Committee.

MANCHESTER EAR HOSPITAL.
Grosvenor Square, All Saints'.

The Board invite applications for the post of RESIDENT HOUSE SURGEON (31 beds)
Salary £120 per annum. Candidates must be duly qualified and registered.

Applications, with copies of four recent testimonials, to be forwarded to Mr REGINALD S. MILFORD, Hon. Sec., Manchester Ear Hospital, c/o Mr. W. J. ELLAM, 17, Brazennose Street, Manchester, 2.

MEATH HOME OF COMFORT FOR EPILEPTIC WOMEN AND GIRLS, GODALMING.

PART-TIME MEDICAL OFFICER is wanted for the Meath Home (98 Beds) in September. Salary not less than £100 a year.

Experience in treatment of Epilepsy is looked for.

Apply, Secretary, Meath Home, Godalming, Surrey.

BURY INFIRMARY (LANCS).
(127 Beds)

HOUSE PHYSICIAN AND TWO HOUSE SURGEONS.

Vacancies, as above, arise on the Resident Medical Staff, and applications are invited for the posts.

The Resident Staff consists of an R.S.O., a House Physician, and two House Surgeons.

The appointments are for a term of six months, and the salaries payable are at the rate of £150 per annum, with board, residence and laundry, the salary being increased to £175 per annum in the event of a re-appointment to the same or some other office for a further period of six months.

The services of one House Surgeon are required immediately, whilst the services of the second House Surgeon and the House Physician are required about September 20th.

Applications, stating age, qualifications, and nationality, together with copies of three recent testimonials, are to be forwarded to the undersigned as soon as possible, endorsed appropriately "House Surgeon," or "House Physician."

Full particulars of duties may be had on application.

H. WILKINSON,
Superintendent.

MANCHESTER ROYAL INFIRMARY.

RESIDENT CASUALTY OFFICER (*Male*).

The Board of Management of the Manchester Royal Infirmary *invite applications for the above* appointment.

Applicants must hold a Medical and Surgical qualification and be registered.

The appointment is for twelve months subject to the provisions of the bye-laws as to notice.

Salary is at the rate of £150 per annum, with allowance for laundry.

Applicants must state age and send twelve copies of their application and testimonials to the undersigned not later than 9 a.m. Thursday, September 9th, 1937.

By Order.
W. R. TINDALE,
General Supt. and Secretary.

August 23rd, 1937.

ROYAL BERKSHIRE HOSPITAL, READING.

The following Resident appointment will become vacant on October 1st, 1937:

RESIDENT MEDICAL OFFICER (*male*) at the Blagrave Branch Hospital and Assistant to Pathologist (combined appointment). To reside at and have charge of 64 beds at Branch Hospital and to work as Assistant in the Pathological Department of the main Hospital. (Previous experience in Pathology not essential.) The appointment is for six months, and candidates must be fully qualified and registered.

Remuneration at the rate of £150 per annum, with board, residence and laundry.

Applications, stating age and experience, with copies of testimonials, to be sent to the undersigned on or before Saturday, September 11th, 1937.

H. E RYAN,
Secretary and House Governor.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE

The General Committee invite applications for the appointment of a WHOLE-TIME BIOCHEMIST. The successful applicant will be appointed in the first instance for a period of three years, at a salary at the rate of £600 per annum—at the end of this period the holder of the post will be eligible for further terms of re-appointment. Preference will be given to applicants possessing medical qualifications.

Applications, accompanied by sixteen copies of each of three recent testimonials, to be sent to the undersigned on or before Monday, September 13th.

Personal canvass of the Committee is expressly forbidden.

J. A. BEARDSALL,
Secretary-Superintendent

THE STAFFORDSHIRE GENERAL INFIRMARY, STAFFORD.
(*100 Beds*)

HOUSE PHYSICIAN and CASUALTY OFFICER required on September 1st. Salary £150 per annum. Previous experience is desirable. There are two Resident Medical Officers and a well-equipped Clinical Laboratory.

Applications, stating age with particulars of experience, and accompanied by copies of three recent testimonials, should be sent to me forthwith.

A. E. COLLINS,
Stafford, August 20th, 1937. Secretary.

VICTORIA HOSPITAL, BLACKPOOL.
(182 Beds.)

HOUSE SURGEON (male) required immediately. Appointment is for six months; salary at the rate of £200 per annum, with board, residence and laundry.

Applications, with copies of three recent testimonials, should be sent to the General Superintendent.

LEICESTER ROYAL INFIRMARY.
(500 Beds.)

Vacancies for October 1st, 1937.

HOUSE SURGEONCIES (1).

Salary £125 per annum. Applicants must have held a Resident Hospital post or had similar experience of Hospital work. Unsuccessful candidates will be considered for Senior Casualty Officer if they so intimate.

CASUALTY OFFICERS.

Senior Casualty Officer, Fellowship Standard. Salary £125 per annum. Junior Casualty Officer. Salary £100 per annum.

HOUSE PHYSICIANCIES (2).

Salary £125 per annum. Applicants must have held a Resident Hospital post or had similar experience of Hospital work.

RESIDENT ANAESTHETIST.

Salary at the rate of £150 per annum for first six months, £200 per annum for second six months £225 for third six months, £250 for fourth six months.

Applications, with copies of three recent testimonials, to be forwarded to the undersigned not later than August 31st.

GEO. W. COOLING,
House Governor.

Appointments for six months will be made on September 8th.

August 4th, 1937.

WORCESTERSHIRE MENTAL HOSPITAL, BARNSLEY HALL, BROMSGROVE.

SECOND ASSISTANT MEDICAL OFFICER
(male, single).

Applications for this post are invited from duly qualified registered Medical Practitioners, preferably with previous Mental Hospital experience.

Salary £350 per annum, rising by annual increments of £25 to £450, with board, apartments, laundry and attendance, valued for superannuation purposes at £90 per annum. An additional £50 will be paid to the successful candidate if holding the Diploma in Psychological Medicine.

Appointment subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

Forms of application may be obtained from the Medical Superintendent and must be returned to him (together with copies of three recent testimonials) by Thursday, September 2nd, 1937, in order that they may be considered and a short list made so that the candidates may appear before the Visiting Committee in the afternoon of Monday, September 6th, 1937.

RUNWELL HOSPITAL FOR NERVOUS AND MENTAL DISORDERS.
Near Wickford, Essex.
(East Ham and Southend-on-Sea Joint Mental Hospital.)

HOUSE PHYSICIAN required for the above Hospital (1,032 beds). Salary £150 per annum, with apartments, board, attendance and laundry. Six-monthly appointment, renewable for a further six months. Excellent opportunities for post-graduate work. The Hospital provides facilities for treatment in all its aspects and is equipped with up-to-date laboratories.

Applications, together with copies of recent testimonials (not more than three), to be forwarded to the Physician Superintendent, Runwell Hospital, near Wickford, Essex, as soon as possible.

Envelopes to be marked "House Physician" in top left-hand corner.

H. J. WORWOOD,
Clerk to the Visiting Committee.

KENT COUNTY OPHTHALMIC AND AURAL HOSPITAL, MAIDSTONE.
(109 Beds.)

Applications are invited for the posts of Senior and Junior OPHTHALMIC HOUSE SURGEONS, which become vacant on October 1st next. Each appointment is for six months. Candidates must be duly qualified and registered medical practitioners, single, and of British birth and nationality, and should have experience of refractions. Salary at the rate of £250 and £200 per annum respectively, with board, residence, and laundry. The Hospital is recognised by the Examining Board for the D.O.M.S.

Applications, stating age and qualifications, together with copies of not more than three testimonials, should be sent to the undersigned.

JOHN W. STRICKLAND,
Secretary.

THE BOLTON ROYAL INFIRMARY.
315 Beds, including two Auxiliary Hospitals.

Applications are invited from ladies for the post of HOUSE SURGEON. Duties to commence on October 1st, 1937, and include charge of Children's Wards, Ear, Nose and Throat and Gynaecology.

The appointment is for six months, and is renewable. Salary £150 per annum, with board, residence and attendance.

Applications for the post, stating age, nationality, and previous experience, together with copies of testimonials, should be forwarded to the undersigned not later than Tuesday, September 7th.

H. CORLESS,
Acting Secretary.

COUNTY BOROUGH OF IPSWICH.

ASSISTANT MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

The Council invite applications for a whole-time Assistant Medical Officer of Health and School Medical Officer. Applicants may be of either sex, but must be fully qualified medical practitioners possessing a Diploma in Public Health and be under 40 years of age.

The salary will be at the rate of £600 per annum, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £700.

The Council have adopted the Local Government and Other Officers' Superannuation Act, 1922, and the appointment will be a designated post thereunder as from April 1st next. The successful candidate will be required to pass a medical examination.

The duties will be principally those of a School Medical Officer, but the person appointed will also be required to work in other departments at the discretion of the Medical Officer of Health.

The appointment is determinable by three months' notice from either side.

Forms of application may be obtained from the Medical Officer of Health, Public Health Department, Elm Street, Ipswich, and applications with copies of not more than three recent testimonials must be delivered to the undersigned not later than September 30th, 1937, in an envelope marked "Appointment of Assistant Medical Officer of Health, etc."

Canvassing directly or indirectly will be a disqualification.

Town Hall, Ipswich. A. MOFFAT, Town Clerk.

August 24th, 1937.

HERTFORDSHIRE COUNTY COUNCIL.

PUBLIC ASSISTANCE. COUNTY INSTITUTION, OSTER HOUSE, ST. ALBANS.

HOUSE SURGEON.

Applications are invited for the post of House Surgeon (either sex) at the above Institution, which comprises general medical and surgical wards, with separate Maternity and Children's Units.

Salary will be at the rate of £175 per annum, with an allowance of £3 3s. per week until such time as board and residence can be provided in the Institution. The appointment will be limited to one year, and not renewable. The House Surgeon must, until quarters in the Institution are provided, reside near the Institution at an address to be approved by the Guardians' Committee.

Candidates must be duly qualified and registered.

Applications, stating age, qualifications and experience, with copies of not more than three recent testimonials, should be sent to the Clerk of the St Albans Guardians' Committee, Oster House, St. Albans (from whom any further details may be obtained), as soon as possible.

Hertford, Herts. ELTON LONGMORE, Clerk of the County Council.

August 28th, 1937

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, WIGAN. (180 Beds.)

Wanted for twelve months, commencing October 1st, 1937, RESIDENT MEDICAL and SURGICAL OFFICER and REGISTRAR. Candidates must have held previous Resident appointments at a Hospital. Preference will be given to those possessing the F.R.C.S. or M.S. Degree. The salary is at the rate of £250 per annum, with board, residence and laundry. Applications, giving proof of registration and not more than three testimonials, to be sent to the undersigned as soon as possible.

A. STANLEY BRUNT, General Superintendent and Secretary.

August 12th, 1937.

WESTERN OPHTHALMIC HOSPITAL, Marylebone Road, N.W.1.

Applications are invited for the following resident posts: (1) SENIOR HOUSE SURGEON, salary at the rate of £150 p.a. (2) JUNIOR HOUSE SURGEON, salary at the rate of £100 p.a. Previous ophthalmic experience required. The selected candidates will be required to commence duties on October 1st and November 1st respectively. This Hospital is recognized for the purposes of the D.O.M.S. Examinations.

Applications, with copies of three recent testimonials, should reach me by September 15th.

H. W. BURLEIGH, Honorary Secretary.

DURHAM COUNTY HOSPITAL (100 Beds)

MALE HOUSE SURGEON required. Duties to commence October 1st, 1937.

Salary at the rate of £150 per annum, with board, residence, and laundry.

Appointment for six months, subject to renewal for a similar period.

Applications, stating age, experience, and enclosing testimonials, should be addressed to the undersigned immediately.

NORMAN BROWN, August 23rd, 1937. Secretary.

COUNTY BOROUGH OF SMETHWICK. ST. CHAD'S HOSPITAL, BIRMINGHAM.

HOUSE SURGEON.

Applications are invited from registered medical practitioners for the appointment of House Surgeon at the Council's Municipal Hospital. The appointment will be for a period of six months, with a salary at the rate of £150 per annum, with the usual emoluments. If the successful candidate is reappointed for a further period of six months, the salary will be at the rate of £200 per annum. St. Chad's Hospital contains 145 beds, and the cases treated include general medical, acute surgical, and maternity patients. It is staffed by the Honorary Consultants of the Birmingham teaching hospitals.

Form of application may be obtained from the Medical Superintendent, St. Chad's Hospital, Hagley Road, Birmingham, 16, to whom applications, endorsed "House Surgeon" and accompanied by copies of three recent testimonials, must be delivered not later than first post on September 11th, 1937.

Canvassing, directly or indirectly, will disqualify.

Council House, Smethwick. FRANK CHAPMAN, Town Clerk.

August 24th, 1937.

CARDIFF ROYAL INFIRMARY. (Associated with the Welsh National School of Medicine.)

Applications are invited for the post of:

RESIDENT SURGICAL OFFICER.

Duties will include case-record keeping and teaching, and surgical work under the direction of the Honorary Staff.

Candidates must be Masters in Surgery of a University of the United Kingdom, or Fellows of one of the Royal Colleges of Surgeons in the United Kingdom, and must have previously held a Resident hospital post.

The salary will be at the rate of £200 per annum, with board, residence and laundry. The appointment is for one year, and the holder will be eligible to apply for reappointment, and may retain office for three consecutive years.

Further particulars may be obtained from the Medical Superintendent, to whom applications (endorsed "R.S.O."), with not more than three testimonials (copies), must be sent by noon on Friday, September 10th, 1937.

By Order of the Council, R. ARMSTRONG, Medical Superintendent.

HUDDERSFIELD ROYAL INFIRMARY. (321 Beds.)

MALE CASUALTY OFFICER required to commence duty on September 5th, 1937.

Salary £200 per annum, with board, residence and laundry. Appointment for six months. Prospects according to qualifications, experience and satisfactory service.

The Hospital is officially recognized for the surgical practice required of non-members before admission to the Final Fellowship Examination of the Royal College of Surgeons of England.

The post of Casualty Officer is next in seniority to that of Resident Surgical Officer.

Applications, with copies of three recent testimonials, to be addressed to the undersigned immediately.

H. J. JOHNSON, General Superintendent and Secretary.

ANCOATS HOSPITAL, MANCHESTER, 4.

This Hospital is recognized by the Royal College of Surgeons for its Surgical Practice.

HOUSE SURGEONS (General) required. To commence duty on October 1st. Two vacancies. Appointment for six months. Salary £100 per annum, with board, residence, laundry, etc.

Applications, stating age, qualifications, previous experience and full particulars, to be forwarded to the undersigned on or before September 8th, together with copies of three recent testimonials.

By Order of the Board, HERBERT J. DAFFORNE, Gen. Supt. and Secretary.

ANCOATS HOSPITAL, MANCHESTER.

ASSISTANT PATHOLOGIST, lady or gentleman, whole-time appointment—no private work allowed. Salary £300 to £350 per annum, according to experience; live out. The appointment is for twelve months in the first instance. Luncheon and tea provided.

Applications, stating age, experience, and full particulars, together with three recent testimonials, to be forwarded to the undersigned not later than September 8th.

By order of the Board, HERBERT J. DAFFORNE, Gen. Supt. and Secretary.

WHITEHAVEN AND WEST CUMBERLAND HOSPITAL.

HOUSE SURGEON required for October 1st. Six months' appointment. Salary at the rate of £150 per annum, with board, residence and laundry. Applications, with copies of three recent testimonials, to be sent to the Secretary.

THE PRINCESS ELIZABETH OF YORK HOSPITAL FOR CHILDREN. Shadwell, London, E.1. (Formerly East London Hospital for Children.) (135 Beds.)

A HOUSE PHYSICIAN is required on October 1st, 1937, by the above Hospital. Candidates are invited to send in their applications, addressed to the Secretary, by noon on Wednesday, September 1st, at the latest, accompanied by copies of not more than three recent testimonials and particulars of previous appointments, if any. The appointment is for six months. Salary at the rate of £125 per annum, with board, residence and laundry. Candidates must be properly registered in this country. Forms of application and copies of the rules can be obtained from the Secretary.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

Applications are invited for the post of HOUSE SURGEON, vacant on September 15th, 1937. The appointment will be for six months but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 per annum, with board, residence and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Wednesday, September 1st, 1937.

J. A. BEARDSALL, Secretary-Superintendent.

HOUNSLOW HOSPITAL, STAINES ROAD, HOUNSLOW, MIDDLESEX.

APPOINTMENT OF RESIDENT PHYSICIAN AND CASUALTY OFFICER.

Applications are invited from registered medical practitioners (male) for:

Junior House Physician and Casualty Officer, salary £100 per annum, with full board, etc., and extras.

Applications, stating age, nationality, qualifications and previous experience, together with copies of three recent testimonials, should be forwarded to the Secretary, endorsed "Appointment."

AMENDED ADVERTISEMENT.

GRANTHAM HOSPITAL (100 Beds)

Applications are invited from fully qualified medical practitioners (either sex) for the post of RESIDENT MEDICAL OFFICER. The appointment is for six months (renewable), and will become available on September 15th, 1937. Salary £250 per annum, with board, residence, and laundry. Applications stating age, nationality, qualifications, and experience, with copies of three recent testimonials, should be sent to the undersigned.

JOHN L. RAY, Secretary-Superintendent.

SWANSEA GENERAL AND EYE HOSPITAL. (316 Beds.)

HOUSE PHYSICIAN wanted, gentleman, single. Salary £150 per annum, with board, residence and laundry. Appointment for six months. Duties to commence September 20th.

Applications, stating age, nationality, qualifications and experience, together with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary-Superintendent.

PRESTWICH MENTAL HOSPITAL, MANCHESTER.

Required immediately LOCUM TENENT MALE MEDICAL OFFICER. The Hospital is a training school. Salary £7 7s. per week and all found.

Candidates must be unmarried and registered under the Medical Act. Appointment terminable by one week's notice on either side. Apply, stating age, hospital and other experience, qualifications and full particulars to the Medical Superintendent as above.

ROYAL HOSPITAL, RICHMOND, SURREY.

Applications are invited for the following posts which fall vacant on October 1st, 1937:

RESIDENT MEDICAL OFFICER—£200 per annum.

SENIOR HOUSE SURGEON—£150 per annum.

JUNIOR HOUSE SURGEON—£100 per annum, with board, furnished apartments and laundry. Candidates must be fully qualified, registered, and single. Form of application can be obtained from the Secretary-Superintendent.

TORBAY HOSPITAL, TORQUAY. (168 Beds.)

HOUSE SURGEON (male) required on October 1st for 2 yrs. Salary £175 per annum, with board, residence and laundry. Candidates must be fully qualified, registered, and unmarried.

Applications, stating age, nationality, qualifications and experience, with copies of not more than three testimonials, must reach the undersigned not later than September 3rd.

T. T. GWYN, August 23rd, 1937. Secretary.

APPOINTMENTS—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C. 1 (in the case of Scottish appointments, with the Scottish Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District.	Town or District.	Town or District
CONTRACT PRACTICE	CONTRACT PRACTICE—*(contd.)*	CONTRACT PRACTICE—*(contd.)*
ABERTYSSWG MEDICAL AID SOCIETY *(Medical Officer.)*	LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE MON. *(Medical Officer for Medical Aid Association.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL. *(Medical Officer.)*	MID-RHONDDA MEDICAL AID SOCIETY. *(Assistant Medical Officer.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
GILFACH GOCH, GLAMORGAN *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Secretary to the British Medical Association; B.M.A. House, Tavistock Square, W.C. 1.

Town or District.	Hon. Sec. of Division or Branch.	*Town or District.*	Hon. Sec. of Division or Branch.	Town or District.	Hon Sec. of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments.)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney, N.S.W.	**VICTORIA** *(All Institute or Medical Dispensaries.)*	The Honorary Secretary, Victorian Branch, British Medical Association, Medical Society Hall, Albert St., East Melbourne, Victoria.	**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, "Shell House," 205, St. George's Terrace, Perth, Western Australia.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon Sec. Queensland Branch, British Medical Association, B.M.A. House, 225, Wickham Terrace Brisbane, B.17.				

August 25, 1937 By Order of the Council. G. C. ANDERSON, *Secretary.*

THE LIVERPOOL SANATORIUM, Delamere Forest, Frodsham, via Warrington. (175 Beds for the Treatment of Patients Suffering from Pulmonary Tuberculosis.)

Applications are invited from male medical practitioners with suitable qualifications for the following appointments.

SENIOR ASSISTANT at a salary of £350 per annum, with board, quarters and laundry.

JUNIOR ASSISTANT at a salary of £225 per annum, with board, quarters and laundry

Candidates must be unmarried, and preference will be given to applicants who have held resident medical appointments since qualification and have had practical institutional experience in the treatment of pulmonary tuberculosis.

The appointments are normally tenable for twelve months, but may be extended.

Particulars of duties and full information, together with forms of application, can be obtained from the Medical Superintendent.

Forms completed; with copies of three recent testimonials, should be returned as early as possible to the Medical Superintendent, The Liverpool Sanatorium, Delamere Forest, Frodsham, via Warrington.

THE PRINCE OF WALES'S HOSPITAL, Greenbank Road, Plymouth (Formerly South Devon and East Cornwall Hospital) (264 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence and laundry

Appointment is tenable for six months, and is subject to renewal Duties to commence September 22nd. The Hospital is officially recognized for the surgical practice required before admission to the Final Fellowship Examination of the Royal College of Surgeons of England.

Applicants must be registered under the Medical Acts.

Applications, stating age and qualifications, with copies of three recent testimonials, to reach the undersigned September 10th.

ARTHUR R. CASH, Gen Surg. and Secretary.

ROYAL HALIFAX INFIRMARY.

Hospital recognised by the Royal College of Surgeons (England).

Wanted, a RESIDENT SURGICAL OFFICER (male, unmarried). Candidates must be duly qualified and registered. Preference will be given to candidates holding higher qualifications. The appointment will be from November 1st, 1937, for twelve months, ending October 31st, 1938. Salary, including all services required in connection with Paying Patients' Ward, £250 per annum, with residence, board and laundry. The Resident Staff consists of Resident Surgical Officer and three House Surgeons. The Hospital contains 250 beds, including Maternity Department and Paying Patients' Block. There is also a Pathological Laboratory and a large, Eye, Ear, Nose and Throat Department, Radiological Department, and Radium Clinic

Particulars of the duties may be obtained from the undersigned, to whom applications, stating nationality, age, etc., together with testimonials, should be sent by August 31st. 1937.

A. MIDGLEY, August 16th. 1937 Secretary.

WESTMORLAND COUNTY HOSPITAL, KENDAL. (82 Beds.)

HOUSE SURGEON (male or female) required, October 1st. Appointment is for six months, renewable for a further six months. Salary £200 per annum, with board, residence and laundry. Applications, stating age, sex, nationality, and qualifications, with copies of three recent testimonials, to be addressed to the Hon. Sec., J. M. Somervell, not later than September 11th.

CHESHIRE JOINT SANATORIUM. (240 Beds.)

Applications are invited for the above post of THIRD ASSISTANT MEDICAL OFFICER (male). The salary will be at the rate of £250 per annum, with board, residence and laundry. Appointment for a period of twelve months.

Forms of application may be obtained from the Medical Superintendent, Cheshire Joint Sanatorium, Market Drayton, Salop.

THE JESSOP HOSPITAL FOR WOMEN, SHEFFIELD. Firth Auxiliary, Norton.

Applications are invited for the post of RESIDENT MEDICAL OFFICER, from registered Medical Practitioners.

The appointment will be for six months, commencing immediately, subject to renewal for a further six months, with salary at the rate of £150 per annum, plus board, residence and laundry.

Previous Obstetrical experience is desirable.

The Firth Auxiliary Hospital contains 47 beds, of which 23 are set apart for the treatment of Puerperal Sepsis, the remainder being for Ante-Natal and Gynæcological cases.

Applications should be lodged with the undersigned, addressed to the Jessop Hospital for Women, Sheffield, immediately.

DAVID OSWALD, Superintendent and Secretary.

STOCKTON AND THORNABY HOSPITAL, STOCKTON-ON-TEES. (140 Beds.)

SENIOR HOUSE SURGEON (male) required for a period of at least six months. Duties to commence on or about October 1st. 1937. Salary £175 per annum, with board, residence and laundry. Candidates must be duly qualified and unmarried. Applications, stating age, nationality, and experience, together with copies of three testimonials, to be sent to the undersigned.

J. WILKINSON, *Secretary.*

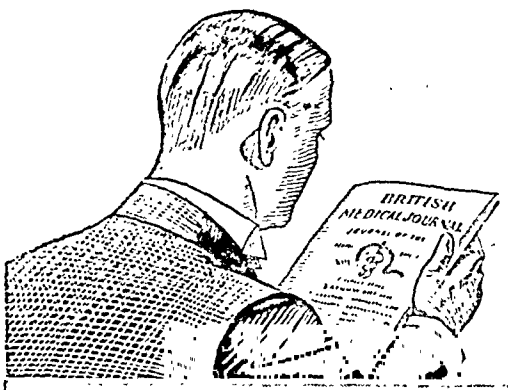
COSSHAM MEMORIAL HOSPITAL, Kingswood, Bristol.

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER. Salary £100 per annum, with board and laundry—to remain for six months in the first instance. Applicants (male) should be of British *nationality, fully qualified, and registered.*

Applications, with copies of recent testimonials, to be sent to the Secretary.

(Advertisements continued on p. 42)

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ASSISTANCIES

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WANTED, ASSISTANT (MALE), ENGLISH, Scottish or Irish, indoor, young; recent qualification. Midland town. £300-£350 per annum. Car supplied.—Address, No. 6264, B.M.A. House, Tavistock Square, W.C.1.

WANTED BY YOUNG EXPERIENCED graduate, per G.P. outlook well recommended, ASSISTANTSHIP preferably London. Good midwifery experience essential. Available for summer and September. Car if necessary.—Address, No. 6267, B.M.A. House, Tavistock Sq., W.C.1.

WANTED END OF SEPTEMBER, MALE ASSISTANT, *Outdoor*, for Border Town. Edinburgh Graduate preferred, with some experience. Salary to commence £450 per annum.—*Address, No. 6206, B.M.A. House, Tavistock Square, W.C.1.*

WANTED FOR LANCASHIRE PRACTICE Outdoor ASSISTANT, male, single, able to drive, car provided, £350 all found. Belfast. Protestant graduate preferred. Required September 13th.—Apply, stating age, to Address, No. 6202, B.M.A. House, Tavistock Square, W.C.1.

WANTED, FOR SEPTEMBER 1ST, AN *outdoor, male, unmarried* ASSISTANT for industrial practice near Newcastle-on-Tyne. Salary £400-£425, according to experience. Furnished house, coal, light, and attendance in addition.—*Address, No. 6231, B.M.A. House, Tavistock Square, W.C.1.*

WANTED, IN OCTOBER OR NOVEMBER, unmarried male indoor ASSISTANT, panel and private practice. Midland city. Salary £300 p.a. Work light, ample time for reading. State age, experience, etc. Photo (returnable).—Address, No. 6232, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OCTOBER, INDOOR MALE ASSISTANT, single, recently qualified, for private and panel Practice outlying London suburb. English or Scotch graduate. Excellent experience and prospects.—Address, No. 6236, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OCT. 1st, KEEN YOUNG "G.P.-minded" ASSISTANT. Better-class mixed *suburban Practice. Live at branch surgery. Previous experience essential. Salary £350-£400.*—Address, No. 5917, B.M.A. House, Tavistock Square, W.C.1.

WANTED, ABOUT THE END OF SEPTEMBER, indoor ASSISTANT for industrial and country Practice (mixed) in South Wales. Good salary offered to suitable applicant. Own car or car provided. Salary £300 and all found.—Address, No. 6036, B.M.A. House, Tavistock Square, W.C.1.

WANTED, *ASSISTANT, MALE, SINGLE.* British with view £375 p.a. Furnished room and attendance provided at branch surgery in pleasant district near Midland city.—Address, No. 6027, B.M.A. House, Tavistock Square, W.C.1.

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WANTED IMMEDIATELY, INDOOR AND Outdoor ASSISTANTS for Town and Country Practices, with and without view to Partnership. Good salaries offered.—State full particulars, BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2.

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WANTED, MARRIED ASSISTANT, END of September, for S. Wales Colliery Practice. Salary £450 p.a., with free house and £50 car expenses. Must be keen, energetic and reliable.—Address No. 5903, B.M.A. House, Tavistock Square, W.C.1.

WANTED, EARLY OCTOBER, OUTDOOR male ASSISTANT in good mixed Practice in East Lancashire. Some experience desirable. Commencing salary £400 (four hundred pounds) per annum, plus £50 (fifty pounds) car expenses. Only Scotsman or Englishman of Protestant faith need apply.—Address, No. 5915, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OCTOBER 1st, KEEN ASSISTANT in large panel Practice in East London. Salary £400 p.a., with emoluments of about £50 p.a. and free unfurnished house and garage. View to partnership later.—State experience, nationality, religion (Jew preferred), age, and enclose photo to Address, No. 6234, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT, COUNTRY district, Midlands; no objection newly qualified. £400-£450, according to experience. Must own car; £50 car allowance; photo, reference.—Address, No. 6296, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT, MALE, single, not over 30, Protestant, for industrial and private Practice, Yorkshire. Some previous experience. Salary £300 and all found. Car allowance.—Address, No. 6218, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—SINGLE, MALE, ASSISTANT for Glamorgan Colliery Practice. Outdoor. Cottage Hospital with scope for surgery. Salary £400 p.a., with rooms and attendance.—Address, No. 6009, B.M.A. House, Tavistock Square, W.C.1.

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INDIAN OR SINGHALESE ASSISTANT wanted Birmingham district. Interviews arranged date on. Married man preferred.—Address, No. 6313, B.M.A. House, Tavistock Square, W.C.1.

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THE MANAGER,
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LONDON, W.C.1.

APPOINTMENTS.—Contd.

THE PRINCE OF WALES'S GENERAL HOSPITAL, London, N.15.

The following Resident posts will be vacant on September 15th next:—
(a) ONE JUNIOR HOUSE PHYSICIAN
(b) TWO JUNIOR HOUSE SURGEONS
Salary at the rate of £90 per annum, board, residence and laundry
Appointments held for six months, but holders are eligible for a further term as Senior
Candidates (male and unmarried) must be fully qualified and registered, and applications (on the prescribed form), together with copies of three recent testimonials, should be sent to the undersigned on or before Wednesday, September 1st, 1937.
J. C. BURDETT,
Director and House Governor.
August 5th 1937

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL,
Gray's Inn Road, W.C.1.

ASSISTANTS IN THE OUT-PATIENT DEPARTMENT.
There are the following vacancies:—
SECOND ASSISTANT, to attend on SATURDAYS at 11.30 a.m.
SECOND ASSISTANT, to attend on WEDNESDAYS at 2 p.m.
The duties are to assist the Surgeons in seeing the patients, and the posts are honorary ones
Applications, which may be for periods of three, six or twelve months, should be sent to the undersigned immediately.
JOHN H. YOUNG,
Secretary-Superintendent.

CENTRAL LONDON OPHTHALMIC HOSPITAL,
Judd Street, St. Pancras, W.C.1.

There is a vacancy for a PATHOLOGIST. Candidates must be duly registered Medical Practitioners and must be willing to attend the Hospital on three afternoons each week. The appointment is for one year (subject to re-election) and carries with it an Honorarium of £105 per annum.
Applications, with copies of not more than four testimonials, must reach the Secretary of the Hospital not later than September 11th

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd Street, St Pancras W.C.1.

Applications are invited for the post of ASSISTANT SURGEON Candidates must be Fellows of the Royal College of Surgeons (England) or hold the degree of M.S. (London) in Ophthalmology, and must have held a post as Clinical Assistant for two years at least at a recognized Ophthalmic Hospital.
Applications, with copies of not more than four testimonials, must reach the Secretary of the Hospital not later than September 11th

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL

Applications are invited for the posts of HOUSE SURGEONS (2, male, unmarried) for a period of six months commencing October 1st, renewable for a further period of six months on the recommendation of the Medical Board. £150 per annum, with full board quarters and laundry. Applicants should be registered Medical Practitioners
Applications with copies of two testimonials should be sent to the House Governor, 234, Great Portland Street, W.1, not later than September 14th

CROYDON GENERAL HOSPITAL

Applications are invited from qualified and registered medical men for the post of HOUSE SURGEON Salary £125 per annum, with board, residence and laundry.
Applications, stating age, qualifications, accompanied by copies (which will not be returned) of three testimonials, to reach the undersigned not later than Monday, September 13th, 1937.
The candidate appointed will be required to take up duties on October 11th, 1937.
The post is recognized for the F.R.C.S. examination.
GEORGE H. DAMS,
House Governor and Secretary.
August 20th, 1937.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, PLAISTOW, E.13.

HONORARY DERMATOLOGIST.

The Committee will shortly proceed to the appointment of an Honorary Physician in charge of the Skin Department. Attendance on one afternoon only each week. Applicants should be graduates of a University and Fellows or Members of the Royal College of Physicians, London
Applications should be addressed before September 13th in the first place to the undersigned
A. ERNEST WILKES,
August 23rd, 1937. *Secretary*

ST. PETER'S HOSPITAL FOR STONE, ETC., Henrietta Street, Covent Garden, W.C.2.

The Office of HOUSE SURGEON will fall vacant on October 1st, 1937, and applications are invited from male candidates with previous experience in a similar office at a General Hospital The salary offered is at the rate of £75 per annum, with board, lodging, and laundry.
At the expiration of six months' term of office, and subject to the recommendation of the Medical Committee, the House Surgeon is appointed Resident Surgical Officer for a further similar period Candidates should therefore be prepared, if successful, to remain at the Hospital for twelve months in all.
Applications, accompanied by copies of testimonials, should be forwarded to reach the undersigned not later than the first post on Tuesday, September 7th, 1937.

BOLINGBROKE HOSPITAL, WANDSWORTH COMMON, S.W.11.
(135 Beds.)

Applications are invited for the post of RESIDENT SURGICAL OFFICER (male, unmarried)
The post is that of Senior Resident Officer, and the work being chiefly surgical preference will be given to candidates holding the F.R.C.S. qualification.
The appointment is for twelve months commencing on October 1st, 1937.
Salary £200 per annum, with board, residence, and laundry.
Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before September 8th, 1937.
W. S. RANDOLPH BISS,
Secretary-Superintendent

METROPOLITAN HOSPITAL,
Kingsland Road, E.8.
(150 Beds.)

Applications are invited for the post of CASUALTY OFFICER AND RESIDENT ANAESTHETIST (male) Salary at the rate of £100 per annum, with board, residence and laundry Duties to commence at once. Candidates must possess a registered medical and surgical qualification of the United Kingdom.
Form of application may be obtained from the undersigned.
FRANK JENNINGS,
House Governor and Secretary

THE SOUTH LONDON HOSPITAL FOR WOMEN, CLAPHAM COMMON, S.W.4
(140 Beds.)

A GENERAL HOSPITAL FOR WOMEN AND CHILDREN.

Applications are invited from fully qualified medical women for the undermentioned appointment:
HOUSE PHYSICIAN for a period of six months from October 1st, 1937
Salary at the rate of £100 per annum, with board residence and laundry Candidates are requested to call on members of the Hon. Medical Staff between Saturday, September 11th, by which date applications and copies of testimonials must reach the Secretary at the Hospital

KING'S COLLEGE HOSPITAL

Applications are invited for the post of SURGICAL REGISTRAR They should be addressed to the House Governor, King's College Hospital, Denmark Hill, S.E.5, not later than Saturday, September 11th, from whom the rules relating to the duties of the Registrar can be obtained

THE QUEEN'S HOSPITAL FOR CHILDREN, HACKNEY ROAD, LONDON, E.2.

RESIDENT MEDICAL OFFICER required on October 1st, 1937.

The appointment is made for six months, and may be extended for further periods of six months, but cannot be held for more than two years.

The Resident Medical Staff consists of the Resident Medical Officer as above, three Casualty Officers, two House Physicians, and one House Surgeon.

Salary £200 per annum, with board, residence and laundry. Candidates must have held a responsible resident appointment at a recognised hospital.

Forms of application may be obtained from the undersigned, and must be completed and returned on or before September 6th.

CHARLES H. BESSELL,
August 1st, 1937. Secretary

THE QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, London, E.2.

HOUSE PHYSICIAN required October 1st, 1937. CASUALTY OFFICER required October 1st, 1937. Some Ear, Nose and Throat work additional.

Six months' appointments. Salary at the rate of £100 per year, with board, lodging, and laundry in each case.

Applications must be made on forms to be obtained from the undersigned, and must be sent in with copies of not more than four testimonials, on or before September 6th.

CHARLES H. BESSELL,
August 10th, 1937. Secretary.

THE ROYAL CANCER HOSPITAL (FREE) (Incorporated under Royal Charter). Fulham Road, London, S.W.3

Applications are invited for the two posts of ASSISTANT RADIOLOGIST at this Hospital.

Applicants must be registered Medical Practitioners, who hold a Diploma in Radiology.

The appointments will be for one year, commencing on October 1st, 1937, at a salary at the rate of £350 per annum each.

Applications, to be made on a form which will be supplied by the Secretary, together with three (copies only) recent testimonials, should be sent to the Secretary on or before Wednesday, September 8th, 1937.

CLEMENT COBBOLD,
Secretary.

THE ROYAL CANCER HOSPITAL (FREE). (Incorporated under Royal Charter.) Fulham Road, London, S.W.3.

Applications are invited for the post of HOUSE SURGEON to commence duties on October 1st, 1937

Salary at the rate of £100 per annum.

The appointment is for six months and subject to rules, a copy of which may be obtained from the Secretary.

Applications, to be made on a form which will be supplied by the Secretary, together with three (copies only) testimonials, to be sent to the undersigned not later than the first post on Wednesday, September 8th, 1937

CLEMENT COBBOLD,
Secretary.

THE ROYAL CANCER HOSPITAL (FREE) (Incorporated under Royal Charter), Fulham Road, London, S.W 3.

Applications are invited for the post of ASSISTANT RADIUM THERAPIST (full-time).

Applicants must be registered medical practitioners, who hold a Diploma in Radiology.

The appointment will be for one year (subject to renewal) commencing October 1st, 1937, at a salary at the rate of £500 per annum.

Applications, to be made on a form which will be supplied by the Secretary, together with copies only of three recent testimonials, should be sent to the Secretary not later than the first post Monday, September 13th, 1937

CLEMENT COBBOLD, Secretary.

THE SALVATION ARMY, The Mothers' Hospital, Lower Clapton Road, Clapton, E.5.

Applications are invited from Medical Women for the post of SENIOR RESIDENT MEDICAL OFFICER vacant October 1st, 1937. Salary £150 per annum, with board, residence and laundry. The appointment is for twelve months.

Applications, with testimonials, must be sent to the Secretary on or before Monday, September 6th, 1937.

EDGAR DIBDEN,
Secretary

CITY OF LONDON MATERNITY HOSPITAL, CITY ROAD, E.C.1.

Applications are invited for the post of MALE ASSISTANT RESIDENT OFFICER for three months from October 1st. At the end of the period the candidate will, if satisfactory, be appointed Senior for three months at £100 p.a.

Forms of application, returnable not later than September 11th, may be obtained from the Secretary.

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RESIDENT SURGICAL OFFICER

The Board of Management invites applications from suitably qualified male candidates for appointment as Resident Surgical Officer. Applicants must have special knowledge of surgery. This appointment (which is recognized by the Royal College of Surgeons of England for the six months' training required of candidates before admission to the Final Examination for the Fellowship) will be for twelve months at a salary of £175 per annum, plus board, residence and laundry, and subject to extension for a further twelve months at £200 per annum, if approved by the Board of Management.

The closing date for the receipt of applications, which should be made on the prescribed form (obtainable from the undersigned) is September 18th, 1937, and short-listed candidates will be required to meet the Appointments Committee on Thursday, September 23rd, at 4.45 p.m.

R. S. G. HUTCHINGS,
Secretary.

LONDON HOMOEOPATHIC HOSPITAL (Incorporated by Royal Charter). Great Ormond Street, Bloomsbury, W.C.1. A General Hospital. 200 Beds.)

APPOINTMENT OF GYNAECOLOGICAL HOUSE SURGEON.

Applications are invited for appointment of Gynaecological House Surgeon vacant October 1st.

The appointment is one of three Resident Medical posts which occur periodically during the year, and is for a period of six months, with salary at the rate of £100 per annum, and board, apartments, and laundry.

Candidates must be legally qualified and registered.

Selected candidates will be required to attend a meeting of the Medical Committee for interview on September 9th.

Applications, stating age, with copies of testimonials, to be sent to the undersigned.

L. J. KNOWLES,
Secretary.

DREADNOUGHT HOSPITAL GREENWICH, S.E.10. (Seamen's Hospital Society.)

HOUSE SURGEON required for six months from October 1st. Salary £110 per annum and a proportion of fees, with board, residence and laundry. Candidates must be male and single. Duties include attendance once a week at V.D. Clinic and charge of V.D. beds, for which there is a special honorarium of £25.

Applications, with copies of three testimonials, to be sent in on or before September 7th to the undersigned.

F. A. LYON,
August 16th, 1937. Secretary.

DREADNOUGHT HOSPITAL, GREENWICH, S.E.10. (Seamen's Hospital Society)

HOUSE PHYSICIAN required for six months from October 1st. Salary £110 per annum and a proportion of fees, with board, residence and laundry. Candidates must be male and single. Applications, with copies of three testimonials to be sent in on or before September 7th to the undersigned.

F. A. LYON,
August 16th, 1937 Secretary

ALBERT DOCK HOSPITAL, CONNAUGHT ROAD, E.16. (Seamen's Hospital Society.)

RESIDENT MEDICAL OFFICER required for six months from October 1st. Salary £110 per annum and a proportion of fees, with board, residence and laundry. Candidates must be male. Applications, with copies of three testimonials, to be sent in on or before September 7th to the undersigned.

F. A. LYON,
Secretary.
Seamen's Hospital Society, Greenwich, S.E.10

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LONDON, S.E.—RESIDL. AVERAGE £700 p.a. Panel 600. Old-estd. Fees 3/6 to 10/6. Premium 1½ years' purchase. Corner house, 5 bed., etc., £1,200, or offer.—9.

KENT.—WITHIN EASY REACH OF town. Nucleus £4/500, with ample scope. Estd only 20 months. Panel now 220. Premium only £500, incl. equipment. Suitable house to rent.—10

LONDON, N.W.—OVER £3,000 P.A. with large panel. Industrial practice. ¼ share now, increasing to ½ shortly, or sell ½ now. Premium about 2½ years' purchase. Small house.—11.

LONDON, S.E.—RESIDL. SUBURB. Average over £1,000 p.a. Good class non panel, but scope. Double-fronted freehold house (non-basement). Price, house and practice, £2,500.—12

SURREY TOWN.—WITHIN 20 MILES. Nearly £1,300 p.a., increasing. Panel 800. Good house, 4 bed. and garden. Rent £104. Premium £2,000.—13.

WOMAN'S PRACTICE. — COUNTRY town, S. of England. £4/£500 p.a. Small panel. Fees 3/6 to 7/6. *Good house to rent.*—14

LONDON, S.E.—OLD-ESTD. AVERAGE £1,300. Panel 850. House, 2 recep., 4 bed., Surgery, etc., with sep. ent. Rent £100 p.a., or sell Goodwill 1½ years' purchase.—15.

LONDON, W.C.—LOCK-UP. ABOUT £1,000 p.a. Panel over 1,000. Accommodation available on rental. Premium £2,000.—16

LONDON, S.E.—CASH PRACTICE. £500 p.a. Panel 500, increasing. Ample scope. House, 3/4 bed., optional.—17.

LONDON, N.W.—NOW OVER £3,000, increasing. Mostly cash. Panel over 3,200. Premium £6,000. Two houses to rent at £40 and £100.—18.

PROSPEROUS N.E. COAST TOWN.—£2,000 p.a. Old-established. Panel 2,200. Appts £250. ¼ share for disposal. 2 years' purchase.—19

SOUTH COAST, WITHIN 100 MILES —Average £1,200. Medium panel. *Good fees.* Good family house (5 bed.) and good garden for sale.—20

HERTS. — PROMISING NUCLEUS, about £400 p.a. Panel 525. Premium £50. Good house, garden and garage. Freehold £1,400.—21

EAST YORKS.—CLEAN TOWN.—SHARE worth about £1,200 after present Assistancy. Middle and working class and panel of 2,600. Premium 2 years' purchase. Choice of houses.—22

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CHESHIRE TOWN.—PARTNERSHIP (after short Assistantship) in mixed-class Practice. Cash Receipts last year £2,020. Panel 1,800. Good house available to rent. Premium—1/3rd share—2 years' purchase.—No. 1008.

LANCS TOWN.—Old-established mixed-class PRACTICE. Cash receipts last year £1,136. Panel 975. Good house and surgery premises to rent. Premium—£1,500. Vendor retiring.—No. 1,007.

NOTTINGHAM.—PARTNERSHIP in old-established Practice. Cash receipts £2,500 p.a. Panel 3,000. Nice house. Premium—half-share—£2,400. —No. 975.

YORKS (N.R.) — Old-established unopposed Country PRACTICE in beautiful district near to large town. Cash receipts approximately £1,200 p.a. (including £455 p.a. from Panel). Good house, 2 reception, 5 bedrooms, large garden, garage, water, gas and electricity. Rent £70 p.a., on lease. Premium—2 years' purchase or near offer, to include drugs and fittings.—No. 973.

LANCS TOWN.—PARTNERSHIP in sound practically unopposed mixed Panel and Private Practice near large town. Cash receipts last year £2,756. Panel 3,550. Good house, 2 reception, 3 bedrooms, garage. Price £800. Premium —one-half share—best offer.—No. 995.

MANCHESTER.—Old-established Private and Panel PRACTICE. Cash receipts last year £1,222. Panel 800. Good house, 2 reception, 5 bedrooms, 2 Professional rooms. Premium—Practice—1½ years' purchase.—No. 1,009.

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NORTH WALES COAST.—Middle-class PRACTICE. Receipts £1,417 p.a. Panel 415. Excellent house with ample accommodation, garage and garden. Premium—£2,100.—No. 929.

SUFFOLK.—Old-established Country PRACTICE, practically unopposed. Cash receipts last year £1,081. Panel 835 (yields £582 p.a.). Scope. Good house, 2 reception, 3 bedrooms, garage and nice garden. Rent £40 p.a. Premium—best offer.—No. 993.

NEAR MANCHESTER.—Sound middle and working class PRACTICE. Average cash receipts £2,692 p.a. Panel over 2,500. Scope Detached corner house, 2 reception, 4 bedrooms, 3 Professional rooms, garage and garden. Premium—1½ years' purchase.—No. 952.

CHESHIRE/DERBYSHIRE BORDER.—Old-established PRACTICE in Country district. Cash receipts last year £700 (increasing). Panel 862. Great scope. Excellent house, 2 reception, 4 bedrooms, 3 Professional rooms (separate entrance), garage and good garden. Premium—£1,000.—No. 989.

DERBYSHIRE.—Old-established mixed-class PRACTICE, near beautiful country and within easy reach of large town. Average cash receipts £1,100 p.a. Panel 970 and transferable appointments £200 p.a. Scope. Nice detached house, 2 reception, 6/7 bedrooms, garage and large garden. Freehold. Premium—1½ years' purchase.—No. 991.

NEAR MANCHESTER.—Very old-established mixed-class PRACTICE capable of much increase owing to building developments. Cash receipts last year £1,006. Panel 470. Nice detached house, 2 reception, 5 bedrooms, garage and large garden. Separate entrance to surgery. Price £650. Premium—Practice—1 year's purchase. Vendor retiring.—No. 875.

MONMOUTHSHIRE.—Old-established Panel Contract, and Private PRACTICE in prosperous district. Cash receipts last year £1,400. Panel 1,200, plus Contract work, yields £1,230 p.a. Good house, 2 reception, 5 bedrooms. Professional rooms (separate entrance) and garage. Rent £40 p.a. Expenses low.—Premium—£2,000.—No. 970.

NORTH WALES.—PARTNERSHIP (after short Assistantship) in old-established middle-class Practice in pleasant Coast town. Knowledge of Welsh desirable. Cash receipts last year £6,717. Panel 2,600. Well-equipped Hospital. Incoming partner would be required to live in flat. Premium—1/5th share—1½ years' purchase.—No. 958.

YORKSHIRE (W.R.).—PARTNERSHIP SHARE worth £1,700 p.a. with Panel of 1,169 and appointments £80 p.a. in practically unopposed Country PRACTICE. Nice detached house, 2 reception, 4 bedrooms, garage, ¾-acre garden and tennis lawn. Electricity, etc. Premium—2 years' purchase. Reason for sale—ill-health of Vendor.—No. 985.

YORKSHIRE (W.R.).—PARTNERSHIP in old-established mixed-class Practice in important city. Average cash receipts £5,429 p.a. Panel 3,200. Scope. Convenient house available for incoming partner. Rent £50 p.a. Premium—1/4th or 1/5th share—2 years' purchase.—No. 997.

NORTH-WEST COAST.—Well-established PRACTICE in Seaside town. Cash receipts £500-£550 p.a. Panel 450. Modern flat to rent at £80 p.a. inclusive of rates. Premium—1½ years' purchase.—No. 1,005.

NEAR NEWCASTLE-ON-TYNE.—Colliery PRACTICE. Cash receipts last year £952. Panel 600. Scope. Good house to rent. Premium—1½ years' purchase.—No. 978.

LANCS TOWN.—Mixed-class PRACTICE. Cash receipts £1,084. Panel 1,050. Good house. Premium—1½ years' purchase.—No. 951.

DERBYSHIRE.—Old-established PRACTICE in pleasant district near large town, offering great scope for increase owing to building developments. Suitable for two men in partnership. Cash receipts last year £3,436. Panel 3,394. Two good houses, with ample accommodation and modern conveniences, each with garage, garden and tennis court. Premium—2 years' purchase.—No. 955.

NORTH WALES.—Old-established PRACTICE near Sea and Country, capable of great increase. Cash receipts last year, £1,026. Panel 800 Nice surgery premises. Premium, best offer.—No. 905.

LANCS TOWN.—Very old-established mixed Panel and Private PRACTICE; in present hands 35 years. Cash receipts last year £916. Panel 1,223 Scope. Excellent detached house, 2 reception, 5 bedrooms, garage and small garden. For sale, or would rent on lease. Premium—1½ years' purchase. Vendor retiring.—No. 1,004.

MANCHESTER.—Very old-established mixed Panel and Private PRACTICE. Cash receipts last year £2,100. Panel 2,800. Scope. Good house, 2 reception, 4 bedrooms, 3 Professional rooms, garage. Rent £75 p.a. Premium —2 years' purchase, or near offer.—No. 990.

LANCS TOWN.—Old-established Panel and Private PRACTICE in large town. Average cash receipts £1,360 p.a. Panel £900. Scope. Good house, 2 reception, 4 bedrooms, garage. Rent £60 p.a. Expenses low. Premium —1½ years' purchase.—No. 987.

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LANCS TOWN.—Mixed panel and private PRACTICE, in present hands 30 years. Cash receipts approximately £1,500 p.a. Panel 1,500. Great scope. Good house, 2 reception, 4 bedrooms, garage and small garden. Rent £50 p.a. Premium, best offer.—No. 945.

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(Founded 1880.)

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2 KENT AND SUSSEX BORDER.—Old-established and steadily increasing PRACTICE in beautiful country district. Cash receipts, 1936, £628. Panel over 500. House (4 bedrooms, etc.), garage and good garden, main drainage, etc., to rent. Scope. Premium two years' purchase.

3 SURREY.—Old-established mixed country PRACTICE in picturesquely situated village. Bookings, 1936, £2,400. Panel 848. Compact easily run house (5 bedrooms), with electric light, main water, etc., garage and good garden, for sale. Scope. Premium two years' purchase.

4 ISLE OF WIGHT.—PARTNERSHIP in well-established middle-class Practice of nearly £2,650 p.a. Panel 1,200. Visits 3/6 to £1 1s., medicine extra. House with 4 bedrooms, etc., garage and garden. Good society and sport of all kinds. Premium one-half share two years' purchase.

5 HOME COUNTIES.—Well-established and increasing PRACTICE in favourite town within 20 miles of London. Cash receipts last year £1,284. Chiefly run from main surgery. There is a Branch on rapidly developing new estate. Plenty of scope. Good introduction. Premium £2,000. Hospital.

6 N.E. COAST.—PARTNERSHIP (after preliminary Assistantship) in mixed Practice, about £3,300 p.a., in seaport town. Panel 2,600. A suitable house could be obtained. One-third share at first to suitable man at two years' purchase (or near offer), with option to increase to two-fifths in three years and to four-ninths later.

7 LONDON, W.1.—DEATH VACANCY.—SPECIAL PRACTICE in SKIN DISEASES. Cash receipts year ended 31st March, 1937, £1,815. Consultations two and three guineas. Accommodation for professional and residential purposes, if required, to rent

8 HOME COUNTY.—PARTNERSHIP in practice averaging over £2,350 p.a. in attractive country district near the coast. Panel 1,400. Good house (5 bedrooms, etc., etc.) in excellent state of repair, with garage and large garden, to rent at £85 p.a. Premium one-half share £2,500.

9 S.W. OF ENGLAND.—PARTNERSHIP in practice averaging over £2,050 p.a. in beautiful country district. Panel 920. Charming old two-storied house (7 bedrooms) with garage and good garden, in all about two acres, to rent at £52 p.a. Premium one-half share two and a-quarter years' purchase to include share of book debts, drugs, surgery fittings, etc., etc.

10 S. COAST.—Well-established good middle-class non-dispensing PRACTICE in residential town and health resort. Receipts 1936, £940. No panel or midwifery. Fees mostly 10/6 and 7/6. Nice house (4 bedrooms) with garage and garden, for sale. Scope. Premium £1,500.

11 S.E. COAST.—PARTNERSHIP in old-established Practice, averaging £4,100 p.a. in growing resort. Panel 3,000. Modern corner house (3 bedrooms, etc.) for sale or to rent. Premium for one-fourth share, two years' purchase.

12 W. OF ENGLAND.—Non-panel PRACTICE in an inland watering place. Cash receipts average £830 p.a. House or flat could be obtained. Premium one and a-half years' purchase

13 ISLE OF WIGHT.—Well-established PRACTICE averaging nearly £1,200 p.a. in seaside resort. Panel over 725. Good corner house (5 bedrooms) with central heating. Garage and small garden for sale. Good scope. Premium two years' purchase.

14 SUFFOLK.—Old-established country PRACTICE about £1,100 p.a. Panel 832, returning for 1936, £582. Good house (3 bedrooms), garden and garage. Rent £40 p.a. Premium £2,000 or near offer.

15 LONDON, E.—Old-established PRACTICE of £1,793 p.a. in populous district. Panel 2,600. House (6 bedrooms, etc.), to rent. Premium two years' purchase.

16 S. OF ENGLAND.—PHYSIO-THERAPY PRACTICE of £1,000 p.a. in an important town. Fees, 10/6 to £1 1s. Premium £1,250 (including certain equipment).

17 N. WALES WATERING PLACE.—PARTNERSHIP in old-established Practice of £6,000 p.a. Panel 2,600. Nice flat with garage. Welsh must be spoken. Premium for one-fifth share one and a-half years' purchase.

18 E. ANGLIA.—PARTNERSHIP in an old-established Practice in country district. Cash receipts year ended 30th June, 1937, £3,321. Panel 1,400. House to rent at £30 p.a. One-third or two-fifths share at first.

19 E. ANGLIA.—PARTNERSHIP in an old-established Practice of £2,800/£2,900 p.a. in prosperous country district. Panel 1,530. Double-fronted house (6 bedrooms), garage and garden. Freehold for sale or to rent. Premium for one-third share one and three-quarter years' purchase.

20 S. MIDLANDS.—PARTNERSHIP in old-established Practice, averaging £1,369 p.a., in good town. Panel about 900. Excellent large self-contained flat (4 bedrooms, etc.), to rent. Premium for one-half share £1,400, with succession to whole practice in three years.

21 LONDON, W.C.—Old-established mixed PRACTICE, £2,360 p.a., in desirable part. Panel over 3,000. No midwifery. Well-situated residence to rent on lease. Great scope Premium, to include lease, goodwill, some furniture and fittings, etc., £5,000.

22 LONDON, E.—Middle-class PRACTICE of over £2,400 p.a., in outlying district. Panel 2,870. House in good repair. Garage and garden. Freehold for sale. Premium two and one-quarter years.

23 W. OF ENGLAND.—PARTNERSHIP in old-established Practice of £6,600 p.a. in a beautiful country district. Panel 4,500 and appointments worth £1,325 p.a. Centrally situated house (5 bedrooms), for sale. Premium for one-fifth share, £2,750.

24 MIDDLESEX.—PARTNERSHIP (with preliminary Assistantship) in a steadily increasing Practice in a very good residential district on the Thames. Cash receipts, 1935, £4,844; 1936, £5,465; 1937, £6,264. Panel 2,700 and appointments £727 p.a. Premium for one-fifth share two and a half years' purchase.

25 N.W. ENGLAND.—ASSISTANT wanted at once (with view to partnership, after short trial period, and early succession) Mixed Practice of about £650 and capable of much expansion, in popular holiday resort in attractive country. Panel over 300. Good opening for surgeon. House available, including office, garden and garage. Salary £3 3s. weekly with keep and car expense.

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26 N.E. COAST.—Old-established and easily worked middle and better working-class PRACTICE, averaging over £1,150 p.a., in seaport town. No panel—a few contracting out-patients. Visits 5/- to 15/-. Rent of consulting rooms, £26 p.a. A suitable residence could be obtained. Good scope, much building going on. Premium £1,200 (contents of consulting rooms, including X-ray plant and electrical apparatus, about £130).

27 LONDON, S.E.—PRACTICE of about £500 p.a. Panel 533. House with surgery accommodation to rent. Premium one year's purchase, or offer.

28 W. OF ENGLAND.—Country PRACTICE doing about £1,400 p.a., in picturesquely situated village. Panel over 600. Good stone-built slate roof house (4 bedrooms, dressing-room, etc.), garage and charming garden, about ¼ acre, for sale. Hunting, fishing, shooting. Premium £2,800.

29 LONDON, W.2.—Old-established PRACTICE in residential district. Receipts last year, £1,440. Panel 1,000, about. Good house to rent at £130 p.a. Premium two years' purchase.

30 MID-DEVON.—Increasing Country PRACTICE, about £800 a year, in delightful part. Appointments and panel return over £350 p.a. Excellent house (6 bedrooms, dressing-room, etc.), in 1¼ acres of grounds. Separate surgery accommodation. Electric light and main water. Garage and stabling. Freehold for sale. Scope. Premium £1,200.

31 DEATH VACANCY.—SOUTH WALES.—Panel and Contract PRACTICE returning about £1,550 p.a. Large compact residence (6 bedrooms), in excellent condition, with two garages and pleasure and kitchen gardens, to rent.

32 COUNTY TOWN, *within 65 miles of London.*—PARTNERSHIP in Practice averaging between £2,300 and £2,400 p.a. Panel about 2,000. House containing 6 bedrooms, for sale or rent. One-third share (after preliminary Assistantship) at one and three-quarter years' purchase, or near offer.

33 LONDON, E.15.—Old-established PRACTICE averaging £1,670 p.a., in populous suburban district. Panel 1,990. Small house in excellent repair. Rent £50 p.a. Good scope. Premium two and a quarter years' purchase.

34 NORFOLK.—PARTNERSHIP in steadily increasing Practice, about £2,300, in delightfully situated country town. Panel about 1,850. Good society and sport. One-third share at first at two years' purchase.

35 S. MIDLANDS.—PARTNERSHIP (short preliminary Assistantship) in Practice, over £5,000 p.a., in first-rate town. Panel nearly 5,000. House with 4 bedrooms, garage and garden, to rent. One-fifth share at first at two years' purchase.

36 LONDON, S.E.—Old-established and increasing PRACTICE of £2,500 p.a. in suburban district. Panel 2,000. Detached double-fronted house (5 bedrooms, etc.), garage and garden. Freehold for sale. Premium two years' purchase.

37 HOME COUNTIES.—Old-established PRACTICE of over £1,000 p.a. in beautiful country district on Bucks and Northants borders. Panel 536. Attractive house (6 bedrooms, etc.). Freehold for sale, or rent. Premium two years' purchase.

38 S. OF ENGLAND.—PRACTICE of about £300 p.a. carried on by a medical woman in a cathedral town. Panel 100. House (2 bedrooms, etc.), to rent. Premium £500.

39 AUSTRALIA.—Old-established PRACTICE of £1,400 p.a., in agricultural township. Good house (3 bedrooms, etc.), for sale. Premium £1,600 and £250 for X-ray plant.

40 MIDLANDS.—Old-established PRACTICE in beautiful country district. Cash Receipts last year £1,280, including appointments worth about £60, and a panel between 650 and 700. Visits 2/6 to £1 1s. without medicine. Nicely situated house (4 bedrooms, dressing-room, etc.), with nice garden and two garages. Rent about £90 p.a. Premium two years' purchase.

41 N. WALES BORDER.—PARTNERSHIP (with early succession) in old-established County Practice, about £2,500 p.a., in important town. No panel. Surgery premises could be purchased or rented. The private residence is available if required. A share up to one-half would be sold at first with early succession. Premium two years' purchase.

42 DEATH VACANCY.—ESSEX SUBURB.—Receipts average nearly £850 p.a. Panel 423. Semi-detached house (4 bedrooms). Price £800 freehold. Reasonable offer *accepted.*

43 LONDON, S.W.1.—SPECIAL PRACTICE for catarrhal conditions, nasal catarrh, hay fever, asthma, etc., etc., about £1,000 p.a., in commanding position in Grosvenor Place. Consultations 1-3 guineas. Special terms for series of treatments. Excellent accommodation to rent at £100 p.a., on lease. Scope. Premium one and a-half years' purchase.

44 SEASIDE TOWN WITHIN AN HOUR OF LONDON.—Very old-established PRACTICE. Receipts average £625 p.a. Panel about 300. Nice detached house (5 bedrooms), with garage and garden, for sale or rent. Good scope. Premium £1,000.

45 RESIDENTIAL DISTRICT WITHIN 15 MILES OF LONDON.—Old-established PRACTICE. Receipts last year over £2,000. Panel about 1,600. Visits 3/6 to 10/6. Nice residence (4 bedrooms, dressing room, etc.), good garage and garden, for sale or rent.

46 MIDLANDS.—Old-established non-dispensing PRACTICE in first-rate residential town. Cash receipts average £1,640 p.a. Panel 560. House contains 6 bedrooms, etc., garage and small garden. Price £2,400 freehold. Scope. Hospital. Premium £2,850.

47 E. MIDLANDS.—Old-established country PRACTICE, averaging nearly £650 p.a., in pleasant village. Appointments worth over £150 and panel 500. Charming stone-built house (6 bedrooms), with central heating, main electric light and power and water supply. Large garage; garden about 1¼ acres. Price freehold £1,700. Scope. Premium, two years' purchase.

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C. LONDON, N.—CONSULTING ROOMS with SMALL NUCLEUS in large residence along with, if required, part of the house. Excellent opportunity for Doctor to build up practice. *Moderate rent.*

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2. MIDDLESEX.—PARTNERSHIP.—ONE HALF SHARE with succession later is offered in rapidly increasing practice producing over £2,300 p.a. Panel of 2,500 patients. Well situated house with 5 bedrooms can be rented or bought. Premium 2 years' purchase.
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6. CENTRAL LONDON.—Better class PRACTICE averaging nearly £500 p.a. for past 3 years. Panel of 280 steadily increasing. Suitable flat with 7 rooms on rental. *Premium £550.*
7. NORTH-WEST COAST.—Well-established PRACTICE, with seaside town and country work, producing £1,299, including panel and appointments worth about £400 p.a. Suitable house with 3 bedrooms, etc., garden, garage. Rent £50 p.a. Sport of all kinds. Premium only £1,250 for quick sale.
8. NORTH-EAST COAST.—Well-established non-panel PRACTICE, averaging *about £800 p.a., but capable of extension as considerable building is in* progress. Very good house, with 6 bedrooms, etc. Price £1,500. Premium 1½ years' purchase.
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10. NORFOLK AND SUFFOLK BORDERS.—A TWO-FIFTHS SHARE, with increase to one-half, is offered in an old-established practice with considerable scope for increase. Receipts approximately £3,300, with panel of about 1,400. Low expenses. Good house available.
11. BORDERS OF HAMPSHIRE AND BERKSHIRE.—Old-established country PRACTICE. Receipts for past 12 months about £1,200 including £372 from panel of about 660 patients. Suitable house available on rental at £70 p.a. approximately inclusive. Premium £1,550.
12. DEVON COUNTRY.—Old-established PRACTICE producing about £800 p.a. including about £310 from panel of 428 patients. Freehold house for disposal containing 2 reception rooms, lounge hall, 6 bedrooms, waiting room, consulting room, etc., 1½ acres of garden, garage for 2 cars and stabling. Freehold £2,600. Premium £1,200.
13. CENTRAL LONDON.—Owing to illness, old-established PRACTICE producing about £2,300 p.a. Panel of over 3,100 patients. Suitable accommodation available on rental. There is an appointment producing £160 p.a. which is not included in the above receipts but which is believed to be transferable.
14. LANCS.—Suburb of large town. PRACTICE producing about £800 p.a. with panel of 467 patients. Suitable house on rental at £90 p.a. inclusive, Stated to be scope for increase. Premium £1,100.
15. LONDON, S.E 11.—Old-established working class PRACTICE producing approximately £500 p.a.. Panel of about 500 patients. Can be worked as lock-up. Premium 1 year's purchase or any reasonable offer accepted.
16. YORKS.—LARGE TOWN.—Well-established better working-class PRACTICE. Receipts for last 12 months about £1,176 with Panel of 1,150 patients approximately. Fees, minimum 2/6 with visits from 3/6 to 7/6. Freehold house for disposal at £900 containing 3 bedrooms, 2 living rooms, surgery, waiting room, etc. Vendor wishes to specialise.
17. SURREY.—PLEASANT TOWN.—PRACTICE produced for past 12 months about £1,280 with a Panel of 800 patients. Fees 3/6 upwards, with visits from 5/- upwards. Midwifery 3 to 10 gns., about 15 cases per annum. Vendor has to give up owing to ill-health. Premium £2,000.
18. EASTERN COUNTY AND MARKET TOWN.—HALF-SHARE PARTNERSHIP in Practice established some 100 years owing to retiral of junior partner. Average cash receipts over £2,400 p.a., of which over £700 comes from Panel and P.A.C. Suitable house available on rental. Ingoing partner should not be more than 30, preferably have a degree and some hospital experience.
19. ASSISTANTSHIP—with a view to a PARTNERSHIP SHARE to produce about £1,100 p.a., in a well-established Practice. Ingoing man must be young, have had considerable hospital experience, and preferably held an Ophthalmic H.S. He should be married or engaged, and a Protestant. Will applicants please give full details of experience, etc.
20. DEVON, SOUTH COAST—A well-established good-class entirely private PRACTICE producing for the past 12 months about £1,000. Panel could be had if desired. Fees 2/6, 3/6, 5/- and 7/6, with a few visits up to 21/-. Non-dispensing. Suitable house containing consulting room, 2 reception rooms, 6 bedrooms, for sale. Freehold £1,400. Partnership introduction. Would be suitable for ex-I.M.S. or similar.
21. DEVELOPING NORTHERN SUBURB.—*A 3 8TH SHARE is offered in* a well-established and growing Practice. Receipts for 12 months to 1.4.37 amounted to about £5,200, including about £90 from appointments and a Panel of some 5,300 patients. There is a choice of houses available.
22. LANCS.—SUBURB OF LARGE TOWN.—PRACTICE established for 10 years—gross cash receipts for year ended 31.3.37 amounted to about £900, with an increasing Panel of some 470 patients. Fees 2/6 and 3/6, with visits 3/6 and 5/-. Suitable house with good accommodation and separate surgery available on lease at £60 p.a. Premium £1,100, plus good debts, drugs and surgery equipment at valuation. Vendor giving up owing to ill-health.
23. WEST COAST.—Well-established PRACTICE producing about £1,900 p.a., including Panel of 1,450 patients which gives £820 p.a. and one or two small appointments. Visits 3/6 to 12/6. Consultations 3/6, medicine extra. There is a Cottage Hospital, purchaser would get on the staff. There is stated to be scope for surgery. Suitable house on rental at £50 p.a., with rates of £26 p.a. Accommodation is ample, and consists of waiting and consulting room, dispensary with separate entrance, 2 reception, 7 bedrooms and billiard room, half-acre of garden and garage for 2 cars. Premium 1½ years' purchase.
24. LONDON, E.2.—Lock-up PRACTICE established 80 years for disposal. Income about £800-£900 p.a., with Panel of about 1,150 patients. Fees 2/6 and 3/6. Visits from 3/6. Suitable accommodation available consisting of consulting room, dispensary, waiting room, the remainder being sub-let for £280 p.a. Rent and rates £230 p.a. Premium 2 years' purchase to include about £150 fittings, fixtures, drugs, etc.
25. CITY PRACTICE.—Lock-up, hours 10-1 and 5.30-6.30, producing about £1,000 p.a., including £200 from Panel and appointments. Suitable accommodation available.
26. BAYSWATER.—PRACTICE, established some 65 years for disposal. Gross receipts about £1,440 p.a., with 1,000 Panel patients. Suitable house on lease at £130 p.a. Premium 2 years' purchase.
27. ESSEX COAST TOWN.—A ONE-THIRD SHARE is offered to a physician in an old-established Practice producing about £7,200 p.a. Panel produces about £900 p.a. Consultations 3/6 to 7/6. Visits 5/- to 21/-. There will probably be a choice of houses. Ingoing partner should be aged 35 or over and must have a good hospital experience. He should hold the M.D. or M.R.C.P.
28. SURGICAL OPENING.—WITHIN 50 MILES OF LONDON.—A £1,000 share is offered to a FIFTH PARTNER in an old-established Practice. The patients comprise all classes and there is little visiting done under 10/6. Ingoing partner would do all surgery, but must be prepared to do ordinary G.P. as well. Choice of houses. Applicants must be 28-40, preferably hold a degree and must have their English Fellowship. Premium 2 years' purchase.
29. LONDON, S.W.—Old-established PRACTICE producing £1,500 p.a., with panel of 1,266 patients for disposal. Appointment and small club bring in about £85 p.a. House available contains Professional accommodation, reception room and 3 bedrooms and maids' room, bathroom. For sale or might be rented. Premium £3,000.
30. NORTH-WEST COAST.—SEASIDE TOWN.—CONSULTING PRACTICE FOR A PHYSICIAN.—Established by vendor (who now wishes to come to London) 4 years ago. Receipts for last year stated to be £1,320. Minimum fee 2 gns. Suitable rooms available at inclusive rental of £64 p.a. Purchaser can choose his own residence and should hold the M.D. or M.R.C.P. Premium 1½ years' purchase on actual receipts for first year.
31. *HAMPSHIRE.—COUNTRY PRACTICE.—Old-established PRACTICE* held by vendor for past 7 years. Gross cash receipts stated to average £740 p.a. Panel of 472. Appointments worth about £130 p.a. Fees 3/6 upwards. Pleasant house containing 2 reception, 5 bedrooms, etc. Professional accommodation. Good garden and garage. Rent £55 p.a. Prem £1,250.
32. LONDON, SOUTH-EAST.—Middle-class PRACTICE held by vendor nearly 30 years, averaging over £700 p.a. Panel of 576 and one appointment worth £25 p.a. Roomy house with good garden and garage. Leasehold for sale.
33. SUSSEX.—VILLAGE PRACTICE NEAR COAST.—Well-established PRACTICE producing about £800 p.a., and capable of increase, attractively situated within five miles of favourite seaside resort. Very nice house, with ¾ acre of garden, in excellent repair. Price for Practice and house, £3,100 or house might be rented for a short period.
34. LONDON.—WESTERN [illegible] PRACTICE producing about £1,100; [illegible] for a young man who will [illegible] 0/6. Small compact house on rental. Premium £1,800.
35. SOUTH-COAST SEAPORT.—Long-established PRACTICE for disposal owing to Vendor's retirement. He has held it for the past 39 years. Income last year *approximately £573 with a Panel of about 460 patients.* Vendor previously held a public appointment producing £450 p.a., which he relinquished owing to age limit. It is considered that anyone devoting whole time to the Practice would increase the receipts. Suitable accommodation available on rental.
36. EASTERN COUNTIES.—Mixed-class PRACTICE in pleasant agricultural district producing for last twelve months over £1,300 p.a. Fees 3/6 to 21/-. New house in good position with 2 reception, 4 bedrooms, dressing room, etc. Separate professional accommodation. Modern conveniences. Garden, garage. Price for freehold £1,300. Sport of all kinds and schools within reach.
37. EAST ANGLIA—WITHIN REACH OF TWO GOOD TOWNS.—Old-established, unopposed country PRACTICE, averaging over £1,000 p.a., including Panel producing over £450 a year. Low expenses. Detached house *in own grounds, containing 2 sitting rooms, 5 bedrooms, etc.* Rent £60 a year. Premium £1,750.
38. LONDON—NORTH-WEST.—Recently established and steadily developing PRACTICE, producing for last 12 months approximately £1,000, and increasing at the rate of about £200 p.a. Suitable house can be rented or flat obtainable. Premium 2 years' purchase.
39. NORTH-EAST COAST.—Old-established PRACTICE producing at present £900 p.a., but stated to be capable of considerable increase. Choice of two Partnership introduction given, as vendor retiring.
40. MIDLANDS.—FAVOURITE RESIDENTIAL TOWN.—Family better class non-dispensing PRACTICE, producing for last 12 months over £1,000. Panel of 500 and one appointment worth £150 p.a. Fees 3/6 to 21/-. Very nice house with ample accommodation, garden and garage. Freehold £2,000. *Premium 2 years' purchase.*

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10	9 17	10 1	10 9	11 2	11 15					10	4 14
12		10 5	10 13	11 7	12 4	12 12	13 7			12	4 18
13		10 14	11 15	12 4	12 16	13 9	14 2			13	
15		11 19	12 4	12 12	13 5	13 18	14 6	15 1	15 12	15	6 0
17		12 12	13 1	13 7	14 6	15 3	15 16	16 8	17 1	17	6 13
20		13 18	14 2	14 6	15 3	16 1	17 0	17 12	18 3	20	7 5
23		14 19	15 8	15 12	16 5	16 17	17 14	18 11	19 13	23	7 18
25		15 12	15 16	16 0	16 17	17 11	18 7	19 3	19 17	26	8 9
30			16 5	16 11	17 6	18 2	18 16	19 15	20 10	30	9 1
35			17 6	17 13	18 7	19 2	19 19	20 17	21 15	35	9 13
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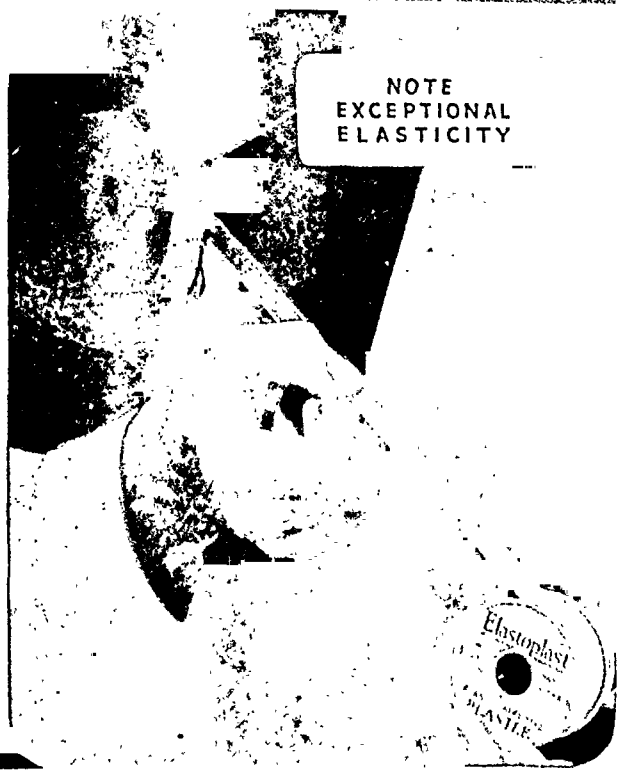
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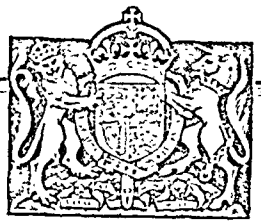
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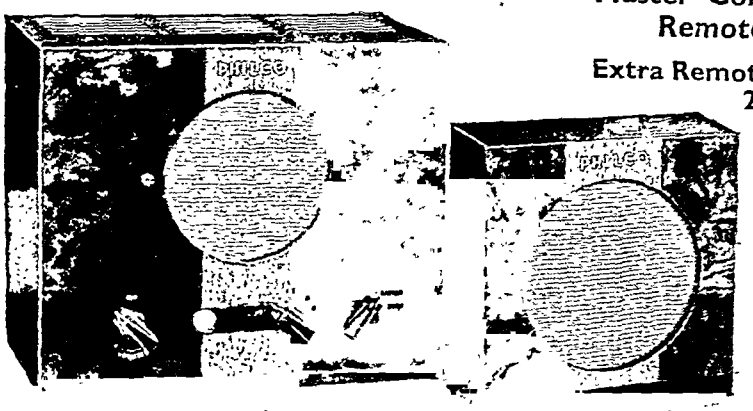
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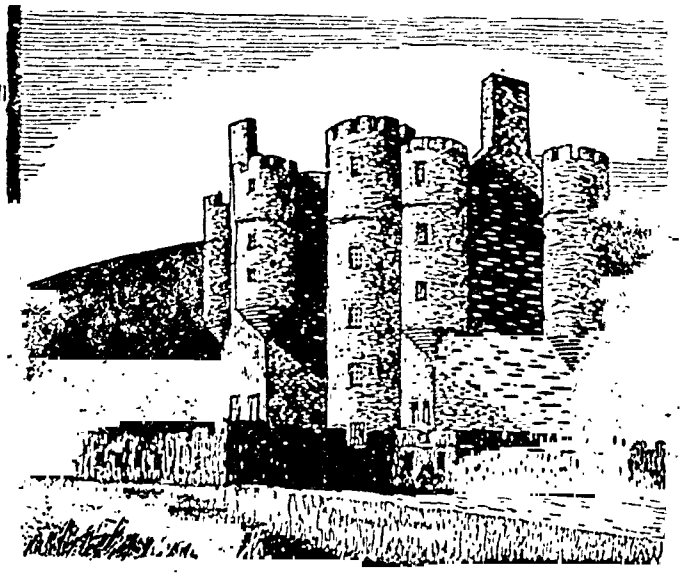
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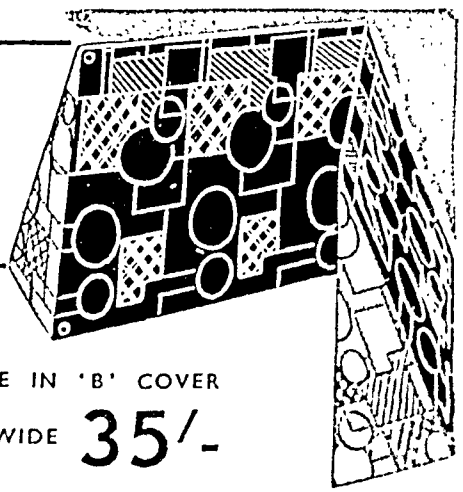
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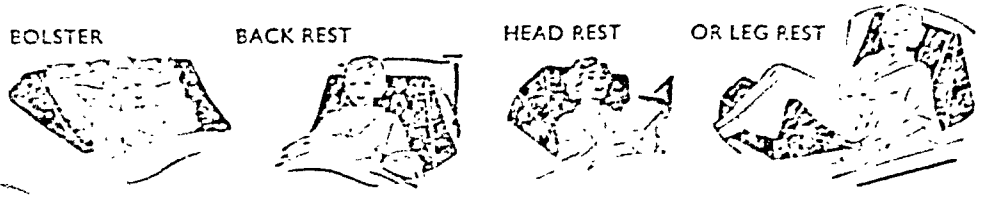
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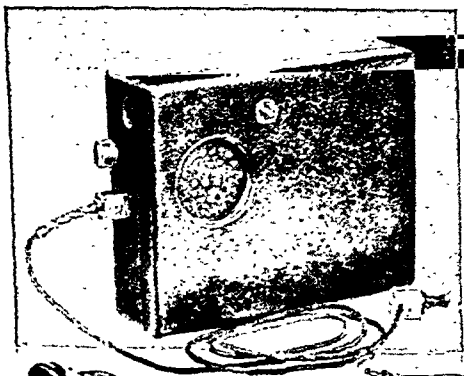
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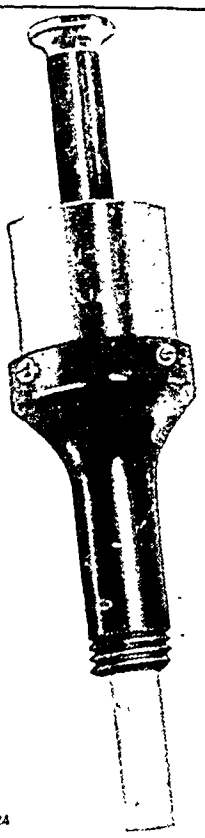
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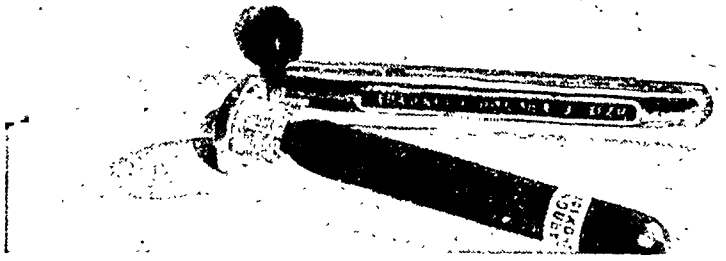
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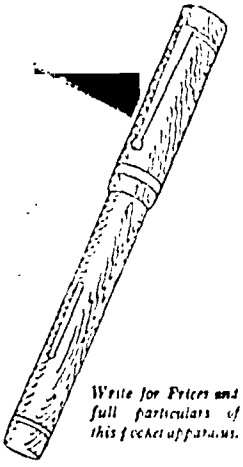
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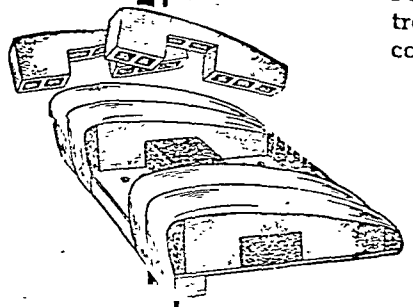
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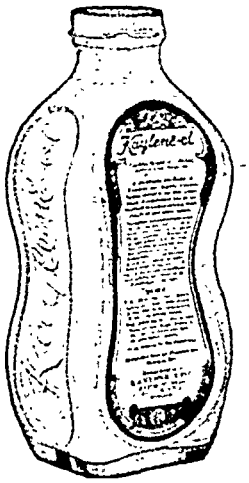
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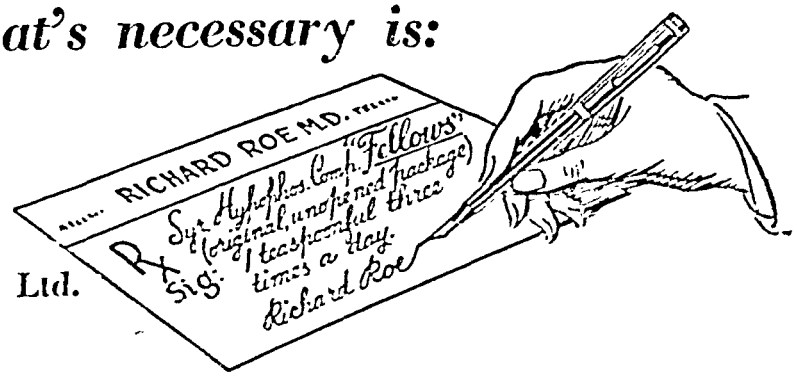
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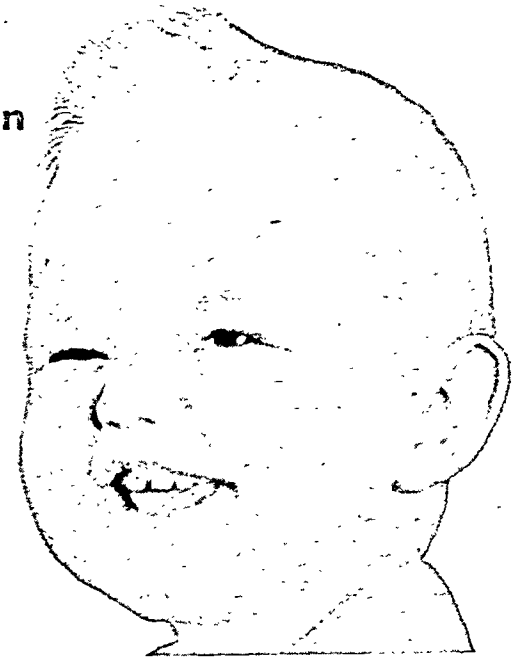
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Waber: Cernauti Medical 1936, *No.* 7, *p.* 495.

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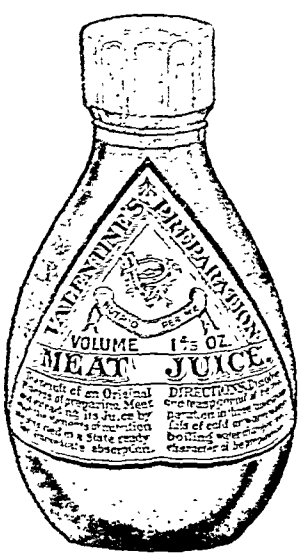
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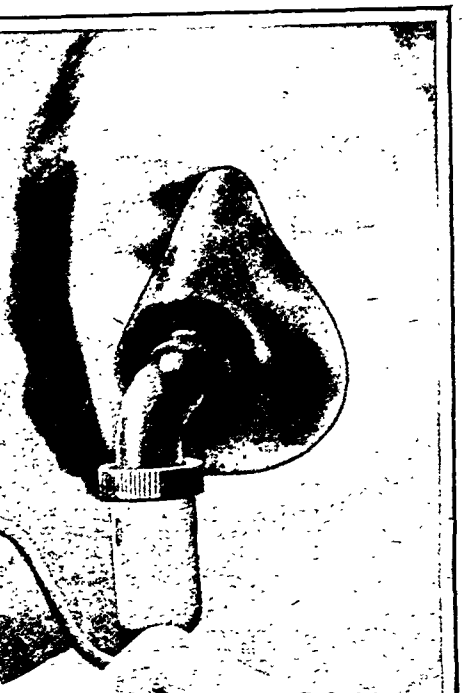
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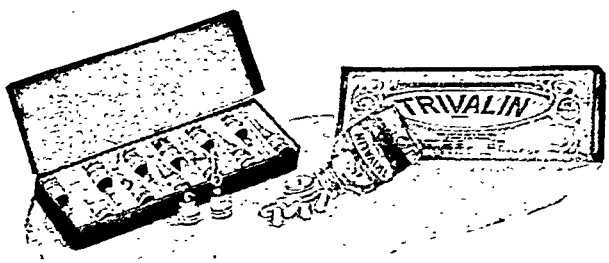
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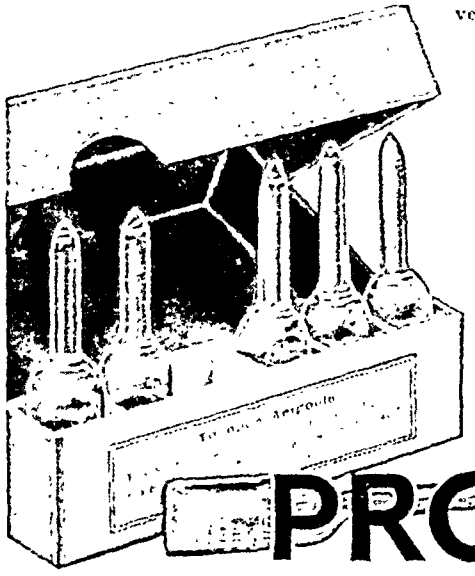
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[1] *British Medical Journal*, 1935, November 16th, p. 938

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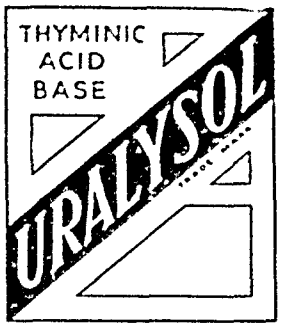
Complete feeding tables, giving full instructions for the progressive introduction of solids, are provided with each tin of Follow-On Trufood.



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FORMULA

Thyminic Acid	0·10
Hexamethylenetetramine-Anhydromethylenecitrate	0·50
Hexamethylene Tetramine	2·50
Piperazine Tartrate ..	0·25
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DIRECTIONS

One teaspoonful to be taken morning and night in a tumblerful of water.

Uralysol, in addition to being a solvent and eliminator of pathological Uric Acid, is a powerful urinary antiseptic.

Normally there exists in the body a certain quantity of uric acid, which assists general metabolism, and after it has played its part is eliminated together with the normal thyminic acid of the organism. When, however, uric acid is present in excess, the body needs additional thyminic acid to supplement the resultant deficit of this normal solvent of uric acid.

Uralysol, by its thyminic acid content, supplies the agent necessary to dissolve excessive uric acid.

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Sample on request

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Dextrose Solution	*q.s.*

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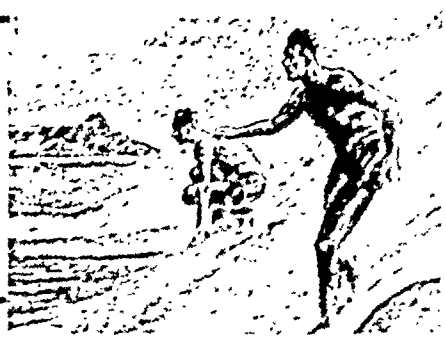
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A supply for clinical trial with full descriptive literature sent free on request.

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Diplococci pneumoniæ ..	200 ,,	
Streptococci	200 ,,	
B. Friedlander	100 ,,	
B. septi	100 ,,	
Staphylococci (alb. et aur.) ..	200 ,,	
M. tetragoni	100 ,,	
B. influenzæ	100 ,,	

"COMMON COLD" & ANTI-CATARRH VACCINE (EVANS)
(No. 1, for Treatment)

M. catarrhalis	50 million	per cc.
Diplococci pneumoniæ ..	50 ,,	
Streptococci	50 ,,	
B. Friedlander	25 ,,	
B. septi	25 ,,	
Staphylococci (alb. et aur.) ..	50 ,,	
M. tetragoni	25 ,,	
B. influenzæ	25 ,,	

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EVANS' "COMMON COLD" AND ANTI-CATARRH VACCINES (Local Strains) are issued as follows:

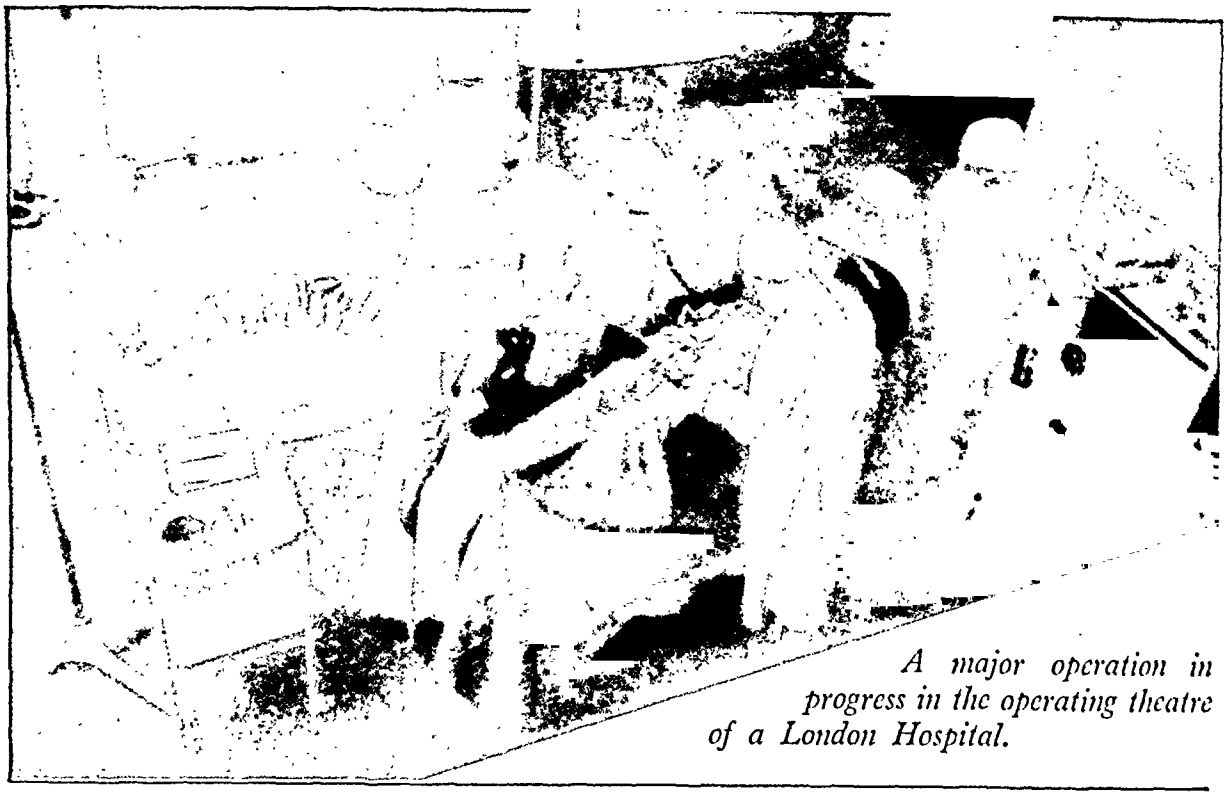
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THE most elaborate precautions against every possible chance of germ infection are of course essential in the operating theatre. It would be ridiculous, however, to expect anything approaching this meticulous attention to antiseptic cleanliness in everyday hygiene and in the home treatment of superficial wounds.

The general public is nevertheless beginning to realise the importance of germ-free cleanliness. Hygienic standards to-day are higher than they have ever been. It is generally agreed by medical men that although regular use of antiseptics is not desirable or really necessary for ordinary toilet purposes, the use of a reliable antiseptic soap can play a very valuable part in the prevention of infectious disease. Face and hands are continually exposed to infectious germs, and require washing with Wright's Coal Tar Soap.

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COAL TAR SOAP
The Safe Soap

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Sulpharsphenamine B.P.

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Approved by the Ministry of Health for use in Public Institutions.

Manufactured under Licence No. 19 Therapeutic Substances Act. 1925.

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Supplied in single ampoules and boxes of ten ampoules.



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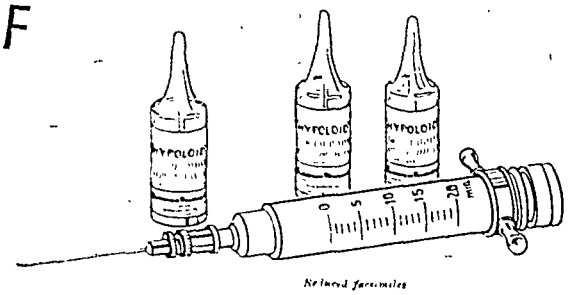
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2 c.c. ampoules, in boxes of 5, at	3/-	3/-
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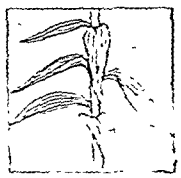


THE HOUSEHOLD LARES WERE GUARDIANS OF THE ROMAN FAMILY, PRESERVING IT FROM SICKNESS AND OTHER ILLS. IF NEGLECTED, THEY COULD INFLICT DISEASE, USUALLY NEUROSIS AND PSYCHIC DISORDER.—The Lar familiaris was once unanimously considered the spirit of the mythical family ancestor, and in the plural, as the spirits of the subsequent ancestors. Some authorities now consider that the Lar represented the guardian spirit of the family's holding of land and was taken into the house and became the object of daily worship. The health of the whole household was believed to depend on due honour being paid to these gods who were held in great affection. The illustration shows a family shrine or Lararium. On the back wall is painted the Genius of the master of the house, with a Lar on either side, and on the altar slab in front stand images of deities including Apollo and Mercury, with a Lar at either end.

DATE: Throughout Pagan times. The shrine, c. 50 B.C.

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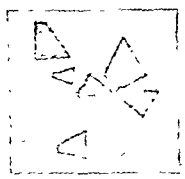
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GL. 271

BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 4 1937

EDUCATIONAL NUMBER, SESSION 1937-8

EDUCATION IN SURGERY FOR GENERAL PRACTICE

BY

SIR DAVID WILKIE, M.D., Ch.M., F.R.C.S.

Professor of Surgery, University of Edinburgh

At the present time there is a somewhat widespread feeling of discontent with the medical curriculum, and various plans are being discussed for its amendment and improvement. It is generally conceded that with the immense additions to knowledge in the last two decades, with the development and growth of specialties, and with the wealth of technical detail which each of these involves, the medical student of to-day tends to have brought before him more than he can assimilate, and is thus apt to lose balance and perspective. The need for a thorough grounding in the fundamental sciences has become more and not less necessary. The plea that all the earlier subjects in the curriculum should be vocational in their ambit loses sight of the fact that the medical course is essentially a training of the mind, not a technical course in practical methods for dealing with the sick.

Before considering the teaching of a subject such as surgery—how it should be taught, when it should be taught, and what should be taught—it is essential that we should have our object clearly in our minds. I believe I voice the general opinion when I describe the object of the medical course as the training of the mind of the student so that he can face any new problem or unusual situation, observe and assess the conditions, and deal with the problem—be it an individual patient, an outbreak of disease, or a question in preventive medicine—in a scientific, a rational, and a reasonable manner. The first two years of the curriculum have given the student the habit of thinking along scientific lines. It is eminently desirable that this habit be not broken when he is introduced to the study of patients in the wards. Thus the earlier teaching in both medicine and surgery should be devoted to those conditions which allow of accurate observation, logical deduction, and rational therapy. In the latter half of the curriculum teaching has become more difficult if more interesting, because it is the teacher's duty to sift out from the mass of accumulated knowledge the general principles and illustrate their application.

In the teaching of surgery to undergraduates we must first consider what should be taught, and then discuss the best ways and means of giving such teaching. To draw clearly demarcated boundaries between the provinces of the physician and surgeon in teaching is not only artificial, it is wrong. Our object is to educate rather than to instruct the student; the surgical ward may offer the best opportunities for education in medicine, just as the indications for surgery may become most evident in the wards of the physician. The greater the co-ordination and harmony of effort in teaching of the two great divisions of medicine, the more complete and generous will be the education of the student.

What Should be Taught

Complete agreement exists that surgical teaching must include the treatment of wounds and broken bones, of many deformities, of certain acute infections, of a considerable number of abdominal emergencies, of a variety of tumours and new growths, and of certain forms and stages of visceral disease. It is not only desirable but necessary that along with this teaching the practical aspects of anatomy, physiology, and pathology should be intimately correlated.

The methods of teaching available are lectures, tutorial classes, classes in applied anatomy and physiology, clinical bedside teaching, clerking in the wards, attendance at operations, work in the surgical out-patient department, and resident clinical clerkship in a hospital. Much criticism has been directed at the *didactic lecture* which at one time occupied the foremost place in surgical teaching. It is admitted that with the numerous textbooks now available the need for a long and complete course of lectures on surgery has gone. On the other hand I disagree entirely with those who belittle the value of the lecture and the spoken word. The function of the lecture is not to replace but to expound and annotate the textbook. If the lecturer can, from the multitude of facts, extract the essential ones which bring out a principle; if this principle can be expounded and its application illustrated from the lecturer's own experience; if thus the rational basis of surgical practice can be portrayed, the student will read his textbook with understanding and will be in a position to gain the greatest benefit from his work with patients in the wards.

After experience of several methods of presenting surgical lectures I believe that the best plan is to give an introductory course (say thirty to forty lectures) to students who have just finished their anatomy and physiology courses and are starting their clinical work. These lectures deal on broad lines with the surgery of wounds, infections, fractures, tumours, and, in the same manner, with the surgery of special regions and viscera. Such lectures form

part of a combined course with medicine, and are correlated with lectures on pathology, bacteriology, and pharmacology. At its best this system of correlated instruction during the student's third year has a broad educative value, not exceeded by any other part of the medical course. It has been our experience in Edinburgh that the students who shine in the co-ordinated examinations of this course almost without exception take the highest places in the final examination.

A second course of lectures on surgery may with advantage be given in the final years of study with this proviso —that the last three months before the final examination shall be left free of all lectures. In this course of senior lectures (fifty in number), which will follow regional lines, the lecturers on special branches of surgery should take their places, each being allotted by consent a certain number of hours. The applied anatomy, physiology, and pathology of each region will be dealt with as a preface to the surgical aspects. In this way interest in the earlier scientific subjects will be continued throughout the entire course.

Coincident with or immediately following the introductory course in surgery the student begins his work in the surgical wards. This may form the most valuable part of his training, or it may be more or less of a sinecure. Owing to the complicated character of many of our surgical procedures, and the smooth and aseptic healing of wounds, the student's opportunities of actually dressing wounds are very limited. The term "dresser" is now a misnomer and is disappearing. The great opportunities of the surgical wards are in diagnosis and in the acquirement of a clinical sense. If the students will examine the patient and discuss the clinical features, and, after all observations have been made and their significance debated, will come to a reasoned diagnosis, any operation on such a patient becomes a real and interesting lesson.

May I state here that the method of conducting a ward clinic on such a patient is important. In some respects it may be interesting and impressive that the surgeon should elicit the history, conduct the examination, and then by logical steps come to a diagnosis. In my experience this has little educative value for the student: only by active mental processes can he gain the education we desire. The duty of the teacher is to guide the student in eliciting information, conducting a physical examination, and coming to a final diagnosis. If the teacher does all the active thinking the student may be taught; he is not trained. The less a clinic approaches a lecture and the more it resembles a debate with many active minds participating, the greater its educative value.

Attendance at Operations

This brings us to the vexed question whether, as some hold, students are wasting time by attending operations. To spend hours watching from a distance intricate technical procedures is unquestionably waste of time for the undergraduate. On the other hand, to see displayed the living pathology of the condition, the diagnosis of which has been the subject of hot debate, is to learn a lesson which will be indelibly printed on the students' minds. The clerk of the case should be on the floor of the theatre, and should read his notes and then discuss the diagnostic features, coming finally to a fixed diagnosis. If this is confirmed at operation he gains in confidence and keenness; if it prove to be wrong the reasons for the error are discussed.

A considerable amount of applied anatomy can be taught at operations, and the lessons of accurate haemostasis, of minimizing trauma to the tissues, and of preventing all undue exposure and shock can be given by both precept and example. Particular stress must be laid on the attendance at emergency operations. This means that the student shall be in hospital on certain evenings when the majority of such operations are performed. The value of seeing the patient on admission, taking the history, making the physical examination, coming to a diagnosis, and then seeing the findings at operation and following the after-course, particularly if all steps are followed by discussion, cannot be overestimated.

While it is desirable that a senior student should know the essential steps of certain emergency operations, such as those for perforated duodenal ulcer, strangulated hernia, acute appendicitis, and ruptured ectopic gestation, it is not the operative technique or procedure so much as the correlation of symptoms and signs with living pathology that gives this experience its singular value.

Operative Surgery

In most medical schools a compulsory course on operative surgery on the cadaver, combined with applied anatomy, is given. The value of such a course is the training in handling a knife and doing the amputations and minor operations which any graduate might be called on to perform. The arguments against such a course are the scarcity of subjects, the dissimilarity between the lifeless tissues and the living body, and the relatively small amount of practice which the individual student gets in such a course. I believe that the course should not be dropped, but rather that it should be strengthened by co-ordinating it with the teaching of applied anatomy, and so giving the final brush up in this subject in the undergraduate course.

Post-operative Observation

The careful study of even a few patients after operation will give the student an insight into the troubles and the worries of the sick man and what can be done for them. He sees the distress of post-operative vomiting, and perhaps assists in washing out the stomach. If vomiting persists he notes the signs of dehydration and the remarkable relief given by fluid replacement by rectal, subcutaneous, or intravenous routes. If vomiting be absent the diet given to patients after various operations is studied in individual cases, the sedatives required, the doses and effects. He will learn how to deal with flatulence and with retention of urine. He may see develop before him a chest complication such as massive collapse of a lobe of one lung. If he witnesses the sudden distress and cyanosis, the rise in temperature and in pulse rate, and finds dullness with diminished breath sounds at one base and the heart pulled to that side, diagnoses a collapse, and sees the treatment carried out, he has had a life-long lesson in practical medicine. Or a patient develops a small pulmonary embolism and the student witnesses the symptoms, signs, and course of an infarct of the lung.

Another patient develops auricular fibrillation following operation, and the complete course and the response to treatment of this complication are got by first-hand study. Following on a peritonitis from a perforated peptic ulcer or appendicitis a patient develops a subphrenic abscess or a pleurisy with effusion going on to empyema: the whole clinical picture, with its constitutional and local features, evolves before the student's eyes.

The observation, study, and record, followed by discussion, of any of these post-operative troubles, providing

the facts are actively assimilated, digested, and understood by the student, gives not only a lasting knowledge of certain maladies but a method of approach and a habit of mind which can be applied with equal value to the solution of all other problems in practical medicine.

I have stressed the importance of post-operative observation because I believe that some of the most profitable studies of the early phases of certain acute medical diseases can be made in surgical wards.

Surgical Out-patient Department

The importance of attendance and practical work in the out-patient rooms is realized by both teachers and students. The treatment of minor wounds, of whitlows and cellulitis, of sprains, of fractures of the upper limb, and of various minor deformities so important to the man in general practice, is all carried out in the out-patient rooms. It is a serious handicap to our surgical teaching that in some of our larger schools it is impossible, owing to the number of students, for all to work in the out-patient rooms. Possibly when we get extended facilities for resident students this defect in our present system may be remedied.

Residence in Hospital

The most important advance in medical education which could take place would, in my opinion, be the provision of facilities whereby every student before graduation would be required to spend three months as a resident clinical clerk in a hospital. In the Irish medical schools this has become a valued tradition; in some British schools it is possible for a minority of students, and wherever it is possible its peculiar worth is indisputably recognized. It matters little whether the student is attached to medical or surgical wards, for he probably sees some of the work in both; the great gain is continuity of observation, a real personal interest in and responsibility for his patients, and the chance of acquiring practical experience in the clinical methods which later practice will demand.

It is impossible that all our young graduates can get resident hospital appointments. Apart from the relative paucity of the latter, considerations of finance compel many young graduates to plunge into practice. The value of a resident hospital appointment is patent and unquestioned. I consider that the greatest and most valuable benefaction to practical medicine in this country to-day would be the provision of resident accommodation at our great teaching hospitals and at a selected and approved number of provincial and municipal hospitals so that every graduate from our teaching schools would have that background and outlook which practical contact with accurate scientific clinical investigation alone can give. Research in medicine, possible for the very few, will never lack financial backing. Training those who man the outposts is just as important as the staff work at the base, for it brings scientific medicine to the homes of the people.

Special Branches of Surgery

Some branches of surgery are now recognized as specialties and, in large centres at least, are practised exclusively by specialists. It is eminently desirable that the student should have the best instruction in these branches, and the only difficulty is to keep a real balance and a proper perspective in such teaching. In respect of undergraduate instruction the nearer such branches are kept to the parent stem the better the education. While the intensive cultivation of a specialty unquestionably favours advance in knowledge it tends to prejudice perspective and make teaching lop-sided. The specialist is naturally impressed with the many points which his experience has shown to be of capital importance in his practice, both on the side of diagnosis and on that of treatment, and to him it seems only fair that the student should learn of these. The trouble is that the poor student's brain will not absorb and carry the multiplicity of important points which specialized experience has given during years of work.

It is thus imperative that instruction in the special subjects should be on the broadest lines, with a minimum of technical detail. What the student should be taught in each special subject is the method of investigation required to gain the most accurate data on which to found a diagnosis. In short, the student must be trained in how to acquire knowledge of disease, no matter which region or system is affected.

Surgery of the Ear, Nose, and Throat.—What systematic teaching is required in this subject might well be given by a specialist in this branch in the course of senior surgery lectures; to keep it in its true perspective the number of lectures should not be more than three, or at most four. The important part of the training in this branch should take place in the special out-patient department, where the student can examine patients and make himself familiar with the methods of investigating the ear, the nose, and the larynx. This practical training is of the first importance for general practice, and a certificate of proficiency in the simpler methods of examination should be required before the final examination.

Orthopaedic Surgery.—This specialty, which during the past two decades has become firmly established in this country, deals with lesions that are of great significance to the student and the practitioner: to the student because many of the lesions are readily visible and demonstrable and give great scope for developing powers of observation and accurate record: to the practitioner because so many deformities can be prevented or greatly lessened by timely recognition and treatment. Certain principles can be readily propounded and illustrated in clinical cases, and a few (two or three) lectures on general lines might be given in the junior surgical course. Attendance at an orthopaedic out-patient clinic should be compulsory. It is here that the student learns the rational application of splints and plaster-of-Paris, and by handling patients appreciates the necessity for systematic and thorough examination before coming to any decision as to the diagnosis and therapy. In the senior course of lectures on surgery six lectures on orthopaedics should be given by the lecturer on that subject. The custom of treating the majority of fractures in the orthopaedic dispensary or wards is now established in some teaching hospitals. Whatever views we may hold as to who should treat fractures, it will almost inevitably tend to become more and more the perquisite of the orthopaedist. The follow-up and rehabilitation departments attached to this unit should form a valuable training ground for the student. The handicap resulting from faulty alignment, the benefit from voluntary effort in restoring function, the various deformities and disabilities resulting from faulty treatment, and the ways in which they can be obviated and corrected, all these can be demonstrated in such a way as to leave a lasting imprint on the student mind. Attendance, on say eight occasions, at the orthopaedic ward or Cripples' Hospital, should be compulsory. Both offer splendid material for training, and most students are attracted by the visible and palpable lesions which come under review.

Neurological Surgery.—This, one of the youngest of our specialties, should be dealt with in the senior surgery lectures, say three lectures illustrated, if possible, by clinical cases. It goes without saying that the elaborate operations performed in this branch of surgery should not engage the student's attention. What should be taught are the broad principles governing cerebrospinal surgery and the various types of lesion which are amenable to operation.

Thoracic Surgery.—Up to now teaching in this subject has been done by general surgeons, and, whilst an occasional lecture from one of the men who have devoted themselves to developing this branch of surgery would be both interesting and instructive for students, a special series of lectures is not yet called for.

Urology.—In this country urology is still largely in the hands of the general surgeon, and is taught by him. Whether it will ever break off completely from general surgery is doubtful. The special accurate methods of coming to a clear diagnosis in this field are unequalled in any other branch of surgery. The student must see the diagnostic methods carried out and learn with what accuracy a lesion may be tracked down. I find that there are very few students who are not thoroughly familiar with all the modern methods of diagnosis in this specialty, which at the present time has the highest percentage of accurate pre-operative diagnoses of any branch of visceral surgery.

Anaesthesia.—The teaching of anaesthetics to students has been handicapped of recent years by the multiplicity of methods and of drugs that have come into use. In this essentially practical art lectures have comparatively little value. All students should give, under supervision, ether, gas and oxygen, and local anaesthesia. It is here that the student who is resident in hospital or is acting as an unqualified clinical assistant gains such valuable experience.

Radiotherapy.—In the treatment of malignant disease of the buccal cavity the surgeon has been largely replaced by the radiotherapist. As there is a tendency to segregate these cases for radium or *x*-ray therapy one must ensure that the student is kept in touch both with their diagnosis and with their treatment. At least two visits to the radiotherapy unit should be made by each student. In the course of senior lectures on surgery two lectures on radiotherapy, its possibilities and limitations, should be given by the specialist in that subject.

I have omitted to refer to venereal disease as it is now controlled and taught by members of what is almost a special branch of medicine. My only remark would be that, important as the subject and high as the standard of teaching undoubtedly are, this specialty must not be given an undue proportion of the student's time.

Conclusion

To sum up, the teaching of surgery offers great scope for training the student in accurate observation and in living pathology. Intensive study of a particular case is infinitely more important than learning the accumulated wisdom of others concerning the patient's disease. To acquire the habit of correlating clinical symptoms and signs with pathology is the essence of medical training, and surgery offers a fruitful field for this acquisition. The young graduate who starts in practice versed in the broad principles which surgical teaching supplies, trained in the methods of examination whereby facts may be disclosed and in the logical inferences that may be drawn from them, may know very little of operative technique and detail, but will have the essentials for successful and enlightened practice.

THE PROFESSION OF MEDICINE

In accordance with long-standing custom we preface the main contents of the annual Educational Number of the *British Medical Journal* with some remarks by way of guidance to those who contemplate entering the profession of medicine. What is said here will follow the lines laid down in previous years; but readers of each subsequent section should bear in mind that not only the methods of medical education but even its purpose are still under close scrutiny in responsible quarters.

THE STUDENT'S CURRICULUM

A revision of the medical curriculum has been under consideration for the last few years. Four important reports on medical education have been issued—the final report of the American Commission; the report of the British Medical Association's Committee; a Bulletin on "Medical Education and the Reform of Medical Studies" issued under the auspices of the Health Organization of the League of Nations; and the report of a Conference of Representatives of the Universities of Oxford, Cambridge, and London, the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. They may be said to be essentially at one as to the main points in which reform is required. So far as relates to the British position, there is common agreement that it is undesirable to lengthen the five years' medical course, but it is recognized that the course should be regarded as beginning at the time when the study of human anatomy and physiology is entered upon, and that this should be at approximately the age of 18 years—slightly later than is permitted under the present regulations. It is held, further, that a higher standard of general education than the present minimum should be required of those entering upon this course; that the requirements as to knowledge of the basic sciences of physics, chemistry, and biology should be modified and extended; that instruction in psychology, genetics, and methods of clinical examination should be introduced into the first two years of the curriculum; that the course should be regarded as a whole, with greater co-operation among the teachers of the several subjects, and not divided into segregated departments; and that, throughout, the preventive and psychological aspects of medicine, the living human personality in health, the sociological duties required from medical practitioners, should receive more prominent attention than has hitherto been common. At its meeting in May last year the General Medical Council passed new resolutions and recommendations carrying into effect the suggestions just enumerated. These are to come into force on November 1, 1938. Though the new pre-registration requirements will not apply in every respect to students entering on their studies before that date such students may well familiarize themselves with the changes which become operative before their period of study is completed. Moreover, parents of intending students should have in mind that

the pre-registration requirements bear upon the course of study in school between the ages of 16 and 18 years. It must be remembered that the powers of the General Medical Council are limited, and that quite as much depends upon the action of licensing bodies and medical school authorities as upon the Council. Indeed it may be said that, whatever regulations and minimum requirements are laid down, and however admirable are the arrangements set out in the prospectus of a university or teaching body, success depends upon the ability and inspiration of the teacher and an adequate response on the part of the student.

FINGER-POSTS

The first object of the Educational Number, 1937, as of all its predecessors, is to inform prospective students and their parents of the steps that must be taken in order to become a registered medical practitioner under the existing order of things. The second is to help those wishing to know what a medical career has to offer, and others who, having already decided to study medicine, are uncertain about the line of work for which they are best suited. This introductory article gives an opportunity of touching upon some aspects of medical study and practice, and of directing attention to a few points that might not occur to anyone without experience of the medical life.

Intending students will find in the pages that follow an account of the course of training required of them at the present time, the places where it can be obtained, and the bodies which test the knowledge gained and confer degrees or diplomas entitling successful candidates to become legally qualified medical practitioners. Sections are included also on postgraduate study, on the higher qualifications, and on most of the varied spheres of work, private or official, which are open to registered medical men and women at home and abroad. The details given are founded on official information, and arranged along the customary lines.

PORTALS OF THE PROFESSION

The *Medical Register* is the official statutory list of legally qualified medical practitioners kept by the General Medical Council. There are many ways in which admission can be obtained to the *Register*. No fewer than twenty-seven bodies—eighteen universities and nine corporations—either separately or jointly, issue registrable qualifications, and the number of teaching institutions is even larger. Nevertheless, the medical courses of the various universities and schools in Great Britain and Ireland run on parallel lines, and the obligatory curriculum is much the same for all students. But the individual teaching and examining bodies have different standards and requirements and bestow different qualifications, and the choice should therefore be made early, so that a definite plan may be followed. The possession of a university degree is generally regarded as an advantage in practice, yet a considerable proportion of medical men in this country find themselves debarred from obtaining it because the Conjoint Examining Boards formed by the union of medical corporations have no power to grant degrees. The decision to study for a university degree in medicine should, if possible, be made by the time a boy or girl is 15. A matriculation examination or its equivalent should be attempted without delay, and the parent should ensure that the special requirements of the medical faculty of the selected university are fulfilled.

The conditions with which those who wish to enter the profession must comply are regulated by the General Medical Council, which is a statutory body set up under the Medical Acts; a summary of its functions and requirements is given at page 447. Every student, after passing examinations in the subjects of general education and in the preliminary sciences of chemistry and physics, must take a course of training at a recognized medical school, covering a period of at least five years, but usually extended to six years or more.

Examination of candidates as to their fitness to practise medicine, surgery, and obstetrics is left to the licensing bodies, which are of two kinds—the universities, and certain medical corporations in England, Scotland, and Ireland. The requirements of these licensing bodies are summarized elsewhere under separate headings. One of the functions of the General Medical Council, besides that of keeping the *Medical Register* and maintaining discipline within the profession, is to make sure that the tests at each stage do not fall below a certain standard, and that the students examined have undergone prescribed courses at approved institutions. Successful candidates eventually receive either degrees, in the case of a university, or diplomas or licences, in the case of a corporation; these qualifications entitle them to claim insertion of their names on the *Medical Register*. Every student, as soon as he obtains his qualification to practise, should at once register; otherwise he cannot hold a public medical appointment, or sign any certificate required from a legally qualified practitioner (such as a death certificate), or recover professional fees in a court of law.

COST OF MEDICAL EDUCATION

This resolves itself into the cost of training at medical school and hospital, and the cost of living during the five or six years of undergraduate study. Besides differences in the charges made for instruction there are differences in examination fees, as well as in the fees for certificates of qualification, and those who seek the higher degrees and diplomas must expect to pay more for the additional courses and tests and certificates. School and examination fees, together with the cost of board, lodging, clothes, travelling, and recreation, form the largest items, and to these must be added the money spent on books, microscope, instruments, and so forth.

Since professional education must continue for five years at least (a period exceeded by the vast majority), and since the cost of living varies much in different parts of the country, while personal expenditure varies still more, it can only be said in a general way that anyone who thinks of entering the profession should be prepared for an outlay of at least £1,500. Something between two-thirds and three-quarters of the whole amount would probably be spent on maintenance, and the rest in fees for tuition, examinations, and admission to degrees or diplomas. For those who have to live in rooms away from relatives £120 per annum for board and lodging, etc., is probably a minimum figure. The fees charged by the different schools and licensing bodies are stated in the paragraphs relating to each on other pages of this issue. When making an estimate of the probable outlay, the many helps available nowadays for the reduction of expense should not be ignored. At nearly all the medical schools more scholarships and money prizes are offered now than in the past; at the Scottish universities bursaries are numerous; and the Carnegie Trust (whose regulations are summarized at page 459) gives pecuniary help to many Scottish students. The main thing to bear in mind when

considering costs is that, as compared with other professions, the period of training in medicine is long, and for most students expensive. Further guidance on this matter will be found in a memorandum[1] issued by the General Medical Council. This pamphlet gives much useful information, including a comparative table of the cost of study and examination at the various institutions.

NUMBERS OF STUDENTS AND DOCTORS

The following brief survey should be read with the notes and tables printed at page 446 on the numbers of registered students and practitioners. More new students mean more new doctors five or six years later, though there is a fairly constant wastage.

At the close of the last century the annual number of men and women who registered as medical students in the United Kingdom had been on the average about 1,800, and then for the next thirteen years it stood at about 1,400. During the war period, though many male students left to serve with the Forces, the entries grew steadily larger, so that in 1918 they were 2,253, and in the following year, when demobilization was in active progress, they reached 3,420. In the next five years the numbers rapidly fell, but from 1923 to 1928 they remained at a fairly steady level rather below the immediate pre-war average. In 1929 the entries rose again to 1,502, and in 1930 to 1,792. In the six following years they were 1,643, 1,947, 2,287, 2,350, 2,603, and 2,544.

In the past sixteen years the numbers of new practitioners registering each year have greatly exceeded the usual pre-war figure of eleven hundred or so. The large additions to the profession in recent times brought the total number of names on the *Medical Register* up to 59,010 at the end of 1936. This is about 6,400 more than the figure for 1926, 15,000 more than that for 1916, and 19,000 more than that for 1906. The population of the British Isles has not increased at anything like that rate during the same decennial periods, and the ratio of doctors to inhabitants is therefore much higher now than formerly. Some think that the saturation point has been reached, and that there is real risk of an overstocked profession. The numbers are certainly quite large enough. Of the total number of registered practitioners to-day some 10 per cent. are women; and, according to returns published by the University Grants Committee, women constituted 14.7 per cent. of the total full-time students of medicine and dentistry in England, Scotland, and Wales in the academic year 1935–6.

CHOICE OF CAREER

The months immediately after registration may be put to the greatest advantage by serving as house-physician, house-surgeon, or casualty officer in a hospital, by working as assistant or locumtenent in private practice, or by seeing something of the world as a ship surgeon. As a preliminary to practice of whatever kind, a year spent in junior appointments at a teaching hospital—"clinical experience under supervision"—is a most profitable investment.

Despite the apparent wealth of choice, the average newly qualified practitioner has to choose between private practice and an official or institutional career. Among the paths open are general medical practice, which absorbs three-quarters of all who qualify; Government service at home or abroad, including the medical branches of the Armed Forces; public health appointments and other administrative or official posts; institutional work, such as that of the municipal hospital (a rapidly widening field nowadays), the mental hospital, the fever hospital, and the sanatorium; academic positions in schools of medicine; general consulting practice as physician, surgeon, or obstetrician; and special work in scientific research or in one of the many subdivisions of clinical medicine and surgery. Most of these careers are discussed in some detail in later sections, but a few words may be said here about general practice and the work of a consultant or specialist.

Further information about such matters will be found in *The Medical Practitioners' Handbook*, published by the British Medical Association.[1] This comprises articles on openings for members of the profession; on practical aspects of medical work; on registration and the privileges of practitioners; on practice under the Insurance Acts; on specialization and special diplomas; and on medical defence societies. The appendixes include rules on the ethics of consultation, and a memorandum on the Dangerous Drugs Acts.

GENERAL PRACTICE

General practice, whether in town or country, is entered in one of three ways. The newcomer may take a house, put up a plate, and wait for work to come to him; he may buy the goodwill of a practice rendered vacant by retirement or death; or he may become a partner in an established firm. The first is more risky than the second, and the second than the third. A well-managed partnership of three or more has this advantage over single-handed practice, that it allows each partner leisure for recreation and for keeping up with the progress of medicine. Success in private practice demands a great deal of knowledge beyond that gained at the medical schools, and hence a man is more likely to be accepted as a partner, or to do well on his own account, if he has already some experience as an assistant or deputy. Hints on how to begin general practice and on some of its pitfalls are given in a little book first published five years ago.[2] Another book recently issued, *An Introduction to General Practice*, will be of great value to senior students and the newly qualified.[3] This sets forth in clear terms a lofty ideal of what the general practitioner should aim at and how he should equip himself for the realization of that ideal in the day-to-day work of his profession.

Since three-quarters of those who pass out of the medical schools become "family doctors" sooner or later, it seems clear that the main purpose of the curriculum ought to be the training of the student for general practice.

"The general practitioner is the unit in the ever-growing complex machinery of health organization which modern civilization has made both necessary and possible, and the many specialized services, private and public, of hospitals, clinics, and health centres must depend ultimately on the co-operation of the general practitioner to fulfil their function in improving the health of the nation. Consequently there can be no more important need in medicine than a continued supply of efficient and well-trained general practitioners, and medical education can render the State no greater service than in making this object secure."

[1] *Memorandum on the Procedure to be Adopted by those who desire to enter the Profession of Medicine, with Notes on Costs and Prospects.* General Medical Council, 44, Hallam Street, Portland Place, W.1. Price 1s. post free.

[1] *The Medical Practitioners' Handbook.* British Medical Association, Tavistock Square, W.C.1. (3s. 6d. net; post free 3s. 9d.)

[2] *A Guide to General Practice.* By A. H. Douthwaite. H. K. Lewis and Co. (4s. 6d.)

[3] *An Introduction to General Practice.* By Sir Kaye Le Fleming. E. Arnold and Co. (5s.)

In its Proposals for a General Medical Service for the Nation[1] the British Medical Association states as an axiom that "the medical service of the community must be based on the provision for every individual of a general practitioner or family doctor"; and the whole series of proposals rests on this as a fundamental principle. In regard to the prevention of disease, on which the Association lays great stress in its memorandum, the general practitioner has an increasingly important part to play.

The national system of compulsory health insurance, now more than twenty-four years old, has had a profound influence on general medical practice in this country. On the whole the insurance system has proved of substantial benefit to medicine. By raising the standard of living among doctors it has induced a better class of man to enter the profession; and the service has steadily improved in efficiency. The Insurance Acts provide domiciliary medical attendance for some nineteen million persons, and more than 19,000 doctors undertake the medical care of this vast section of the community. Thus the bulk of the general practitioners of Great Britain now give, in large or small measure, attendance and treatment under a system embracing almost the whole working population. These practitioners, by placing their names on the panel (or medical list), signify their assent to the terms of service set out in the Medical Benefit Regulations and other relevant provisions. Their interests are watched over by the Insurance Acts Committee of the British Medical Association, which is the executive body of the Annual Conference of Representatives of Local Medical and Panel Committees.

CONSULTING PRACTICE: HIGHER DIPLOMAS

The term "consulting practice" comprises in ordinary usage the work of the general physician, that of the general surgical consultant or operating surgeon, and that of the gynaecologist and obstetrician. These are the three large divisions of consulting practice, as distinct from general practice, which, though they imply some restriction, yet call for a wide range of activity and outlook, in contrast with the smaller ambit of a "specialty" in the narrow sense. Of these main divisions the third is obviously the most limited, but on several grounds it can claim to rank as something more comprehensive than the other specialties. No sharp line can, however, be drawn between consulting practice and specialist practice. Most general consultants, whether medical or surgical, are specialists in some branch of their practice, and most specialists are consultants in the sense that their work largely comes to them through the recommendation of general practitioners, with whom they act (or should act) in a consultative capacity.

Specialism was a direct outcome of the growth and subdivision of the natural sciences and their application to medicine. It has proceeded apace during the present century, and it has had profound effects upon the practice and outlook of the individual surgeon and the individual physician, no less than upon the organization of hospital practice.

Success as a consulting physician or surgeon or specialist is hard to achieve, except by the aid of appointments to hospitals, particularly those with medical schools. These posts are much sought after, and the time of waiting for a vacancy may be long. It follows, then, that the would-be consultant, since he can scarcely hope at first to keep himself on his professional earnings, must either have private means or be prepared, by teaching or in other ways, to make ends meet. Competition in this branch of practice is very keen. Expenses are heavy, and the young consultant or specialist may have to go through a long period of training and waiting before he makes an income; but on the other hand success, when it comes, is liberally rewarded. In the larger industrial towns of the North of England there are many "general practitioner specialists" who combine ordinary panel practice with much surgical or other special work in well-equipped local hospitals which admit patients in different categories according to their means. Though the fees are small compared with those earned by operating surgeons and specialists in London, the work is by no means unremunerative.

Additional degrees and diplomas are important factors in securing election to the visiting staff of a large hospital, and a few remarks about them may be made here. Beyond the qualifications which admit to the *Medical Register*, most of the licensing bodies bestow higher titles after further tests. A considerable number of those who have graduated M.B. at a university, including many general practitioners, proceed later to the M.D. When applying for the post of physician to a hospital it is always useful, and may be obligatory, to hold also the Membership of one of the three Royal Colleges of Physicians, according to the part of the British Isles in which the hospital is situated. So, too, the Fellowship of one of the three Royal Colleges of Surgeons should be obtained by those seeking surgical appointments, and the degree of Master of Surgery is an added distinction. There are also diplomas in a growing number of special branches of work—such as public health, tropical medicine, ophthalmology, laryngology, radiology, tuberculosis, psychological medicine, midwifery, and anaesthesia—which are superfluous for most practitioners, but may be useful or even indispensable for those who intend to devote themselves to one or other of these subjects.

FINANCIAL AND SOCIAL ASPECTS

The course of training for the medical profession is long and expensive, and it may be some years after qualification before the practitioner can count upon an adequate return. For most private practitioners the working expenses are heavy in proportion to gross earnings. On the other hand, medical practice holds out the prospect of a fairly certain income, with unrivalled opportunities for exercise of the mind in the service of others. But those who think of adopting it as a career ought to understand that medicine is a path to fortune only for the few. Yet if from the financial point of view medical practice offers to most men little more than a means of livelihood, in its social and cultural aspects the outlook is far brighter. A doctor's life need yield to none in the matter of sustained and varied interest. His lot is unlike that of many whose business gives little scope to the higher faculties, for he lives in, and by, the exercise of intellectual powers. Gradual improvement in the education of the practitioner has added much to his influence with the public, and has been a large factor in raising his social status during the seventy-nine years that have passed since the General Medical Council was constituted under the first Medical Act. Medicine gives to those who follow it an honourable position. The well-educated doctor stands high among his neighbours, and is the friend and confidant of his patients. Many go further, and take part in the public life of their district; and this is as it should be, because the doctor's training and outlook are such as fit a man for leadership.

[1] The memorandum is issued as a pamphlet by the British Medical Association. (6d. post free.)

PROFESSIONAL ORGANIZATION

In no profession is a readiness to join hands for the common good more necessary than in medicine. Individuals and isolated groups are always at a disadvantage when they try to defend their interests against organized bodies, whether these are Government departments, local authorities, or commercial companies. In his daily work the competent doctor is well able to deal with the individual patient and the patient's friends, but he cannot stand up single-handed to outside organizations. Medical men and women must therefore band themselves together, and the first step after qualification should be to become a member of the British Medical Association. Besides having behind him the machinery and the influence of a world-wide professional body, a young practitioner will find in the meetings of his local Division, and in the Annual Meetings of the Association, many opportunities for keeping abreast of new work and for friendly intercourse with colleagues. Another thing that no new graduate should fail to do is to join one of the societies which for a small yearly sum undertake individual legal defence of their members. The need for protection may arise out of the first case attended in hospital or in private practice.

The British Medical Association was founded in 1832 to promote the medical sciences and maintain the honour and interests of the profession; a note on its constitution and activities will be found at page 512. This great Association, with Branches throughout the British Empire and a membership of 36,000, is the only body that can act for the profession as a whole and speak in its name. The record of a hundred years' work shows that vocational organization, wisely directed, can combine service for its members with service for the public. Every medical man and woman should try to take a share in some of the movements, scientific or social or political, with which the B.M.A. has identified itself.

NUMBERS OF THE PROFESSION

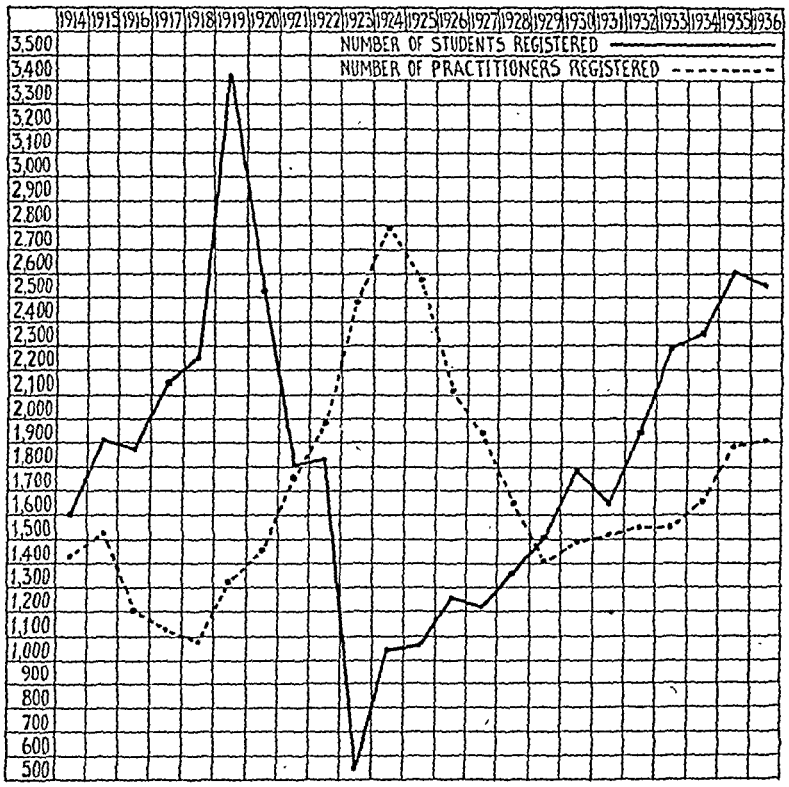
A Review of Fifty Years

In order to present a general view of the numerical strength of the medical profession during the past half-century we have extracted from the records and set down below in parallel columns the total number of names in the *Medical Register* on December 31 of each year, and the numbers added annually by registration between 1887 and 1936:

Numerical State of the "Medical Register"

Year	Names added in Year	Total No. on Dec. 31	Year	Names added in Year	Total No. on Dec. 31
1887	1,531	27,246	1912	1,157	41,439
1888	1,184	27,939	1913	1,168	41,940
1889	1,305	28,348	1914	1,433	42,378
1890	1,266	29,163	1915	1,526	43,225
1891	1,345	29,555	1916	1,202	43,481
1892	1,513	30,590	1917	1,134	43,819
1893	1,579	31,644	1918	1,077	43,926
1894	1,426	32,637	1919	1,322	44,510
1895	1,446	33,601	1920	1,457	44,761
1896	1,385	34,478	1921	1,760	45,408
1897	1,230	34,642	1922	1,983	46,476
1898	1,210	35,057	1923	2,482	48,140
1899	1,351	35,836	1924	2,796	50,035
1900	1,345	36,355	1925	2,570	51,738
1901	1,318	36,912	1926	2,120	52,614
1902	1,275	37,232	1927	1,941	53,769
1903	1,233	37,878	1928	1,656	54,336
1904	1,168	38,492	1929	1,410	54,870
1905	1,240	39,060	1930	1,490	55,291
1906	1,197	39,529	1931	1,522	55,604
1907	1,221	39,827	1932	1,546	56,097
1908	1,137	40,257	1933	1,542	56,741
1909	1,143	39,818	1934	1,664	57,496
1910	1,062	40,483	1935	1,882	58,361
1911	1,042	40,913	1936	1,905	59,010

Numbers of Medical Students and Practitioners Registering 1914 to 1936



The varying proportion of registered medical practitioners to population during the period under review is shown in the following table. This sets out the total population of the British Isles at each decennial census since 1881, and the number of names on the *Register* in the same year.

Proportion of Practitioners to Population

Year	Registered Practitioners	Population British Isles
1881	23,275	35,241,482
1891	29,555	38,104,975
1901	36,912	41,976,821
1911	40,913	45,370,530
1921	45,408	47,146,506
1931	55,604	48,989,485

These figures show a steady increase in the ratio of doctors to population, which was accelerated during the years immediately following the war. Making allowance for the large number of registered practitioners living abroad and for those no longer in practice, the proportion of doctors to population is a good deal more than one to every thousand.

Registration of Students and Practitioners

The relation between the numbers of new students and those of newly qualified practitioners during recent years is shown in the chart on this page, compiled from returns published by the General Medical Council.

Some further remarks on the numbers of medical students in recent years will be found in our introductory article on the profession of medicine.

The chart shows that the number of practitioners registering in any one year corresponds more or less closely to the number of students registered five years previously, the difference being accounted for by examinations and other obstacles. For the last ten years there has been a fairly steady annual increase in the numbers of both students and practitioners becoming registered. This gradual increase seems likely to continue.

The General Medical Council

The General Medical Council was established by the Medical Act, 1858, in order "that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners." Eighteen members of the Council are appointed by the Universities in the United Kingdom having medical faculties; nine by the Medical Corporations, such as the Royal Colleges of Physicians and Surgeons; five by His Majesty in Council; and seven members are directly elected by members of the profession as a whole—a total of thirty-nine. To these are added three dentists who are members of the Dental Board, and are appointed for dental business. Although the eighteen members appointed by the universities and the five members appointed by His Majesty in Council may all be laymen, only two laymen have so far been appointed; the first of these was appointed by the Privy Council in 1926, and, on his resignation in 1931, another was appointed in his place. Both were members of His Majesty's Privy Council.

The Council's offices are at 44, Hallam Street, Portland Place, London, W.1, and there are Branch Offices at 44, Queen Street, Edinburgh, 2, and 35, Dawson Street, Dublin.

The Council exists for the protection of the public and not of the profession. Its principal functions are three. First, to keep the *Medical Register;* second, to see that the name of no person is entered thereon as qualified unless he has had an adequate professional education, and to remove therefrom the names of qualified persons who are no longer entitled to public confidence; and third, to provide for the publication of the *British Pharmacopoeia.* It is the appearance of a name upon the *Medical Register,* and not the possession of a degree or diploma, that constitutes a person a "duly qualified" or "legally qualified" practitioner of medicine.

The Council has no power to make rules in regard to the medical curriculum or examinations, but it can pass resolutions and make recommendations relating thereto, and if any of these were ignored by the licensing bodies, it would be open to the Council to make representations to the Privy Council, which, if it thought fit, might order that the qualifications obtained from such bodies should not be registrable.

The name of any medical practitioner who has been convicted of felony or misdemeanour, or who is judged, after due inquiry before the Council itself, to have been guilty of "infamous conduct in any professional respect," may be erased from the *Medical Register.*

The Medical Acts prohibit attempts being made to impose restriction as to any theory of medicine or surgery, and, once a practitioner has been trained and tested in the knowledge essential for public safety, he may adopt any "theory" of medicine or surgery in which he honestly believes. The Medical Acts do not prohibit the practice of medicine by unregistered persons, but if they "wilfully and falsely" assume any title implying registration they are liable to prosecution. In this respect the Medical Acts differ from the Midwives and the Dentists Acts, which entirely preclude the practice of midwifery or dentistry by unregistered persons. Unregistered medical practitioners, however, are under certain disabilities, for they cannot recover charges for medical or surgical attendance, etc., in a court of law; they cannot hold an appointment as medical officer of health, in public (including mental) hospitals, or as a medical officer in the Military or Naval Services, or in ships; they cannot give any valid certificate which is required by any Act from a medical practitioner—for example, a certificate of death; and they cannot engage in insurance practice, obtain dangerous drugs, or attend cases of venereal disease.

An account of the recommendations which the Council has drawn up in respect of the education of medical students here follows.

Registration of Medical Students

The Council recommends that every intending student of medicine should be registered as such at one of its three offices, whose addresses are given on page 448.

Candidates must produce evidence (*a*) that they have attained the age of 17 years; (*b*) that they have passed an approved examination in general education; and that in addition thereto they have passed an examination in elementary chemistry and elementary physics conducted or recognized by one of the licensing bodies.

Application for registration should be addressed to the Registrar for the Division of the United Kingdom in which the applicant is residing—England and Wales, or Scotland, or Ireland. It must be made on a special form, which can be obtained from any of the offices of the General Medical Council itself, or from one of the various licensing bodies or medical schools.

The regulations with regard to registration apply alike to medical and to dental students, with the exception that for dental students pupilage with a registered dental practitioner may be regarded as the beginning of professional study, and that applications for registration should be addressed to the London office of the Council only.

Professional Education *

The rule is that it is only from the date which appears against his name in the *Students' Register* that the medical student's career officially begins; thereafter five academic years at least must pass before he can present himself for the final examination for any diploma entitling its lawful possessor to registration as a qualified medical practitioner under the Medical Acts. But to meet the circumstances brought about by the dates at which sessions of the medical schools begin and end, the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration. In any case, the period of five years must be one of bona-fide study; and in every course the following subjects should be included:

(i) Elements of General Biology, including an introduction to Embryology. This course, if the licensing bodies permit, may be taken before registration, and the examination may be passed immediately after registration.

(ii) Chemistry, Physics, and Biology in their application to Medicine.

(iii) Human Anatomy and Physiology, including Histology, Elements of Embryology, Biochemistry, and Biophysics.

(iv) Elementary Bacteriology, before regular clinical appointments.

(v) Pathology, general, special, and clinical, and Morbid Anatomy.

(vi) Pharmacology and Materia Medica, to be taken concurrently with clinical instruction.

(vii) Forensic Medicine, Hygiene, and Public Health.

(viii) Medicine, including Applied Anatomy and Physiology, Clinical Pathology and Therapeutics, Children's Diseases, Acute Infectious Diseases, Tuberculosis, Mental Diseases, Skin Diseases, and Vaccination.

(ix) Surgery, including Applied Anatomy and Physiology and Clinical Pathology, Anaesthetics, Diseases of the Eye, Ear, Throat, and Nose, Radiology, Venereal Diseases, and Orthopaedics.

(x) Midwifery and Diseases of Women, including ante-natal conditions and infant hygiene.

The Council recommends that during the last three of the five academic years clinical subjects shall be studied.

The first two years must be passed at a university, or at a school of medicine recognized by any of the licensing bodies, and the remainder must be devoted to clinical work at any public hospital or dispensary at home or abroad which is recognized by a licensing body.

*New Resolutions in Regard to Professional Education were adopted by the Council on May 29, 1936, and will come into operation on November 1, 1938.

Special Considerations

The requirements of the General Medical Council in respect of the education of those who desire to enter the medical profession have now been given in outline, but before leaving this part of the subject the steps which the aspirant should take may be rehearsed in their due order:

(1) Pass an approved examination in general education;

(2) Pass an examination conducted or recognized by a licensing body in elementary physics and elementary chemistry;

(3) Having attained the age of 17, enter himself at a university or at a medical school recognized by one of the licensing bodies;

(4) Obtain registration as a medical student;

(5) Study for a minimum of five years certain prescribed subjects;

(6) Meanwhile pass sundry intermediate examinations; and at the end of the fifth year pass a "qualifying examination" which will entitle him to receive from a licensing body a qualification enabling him to obtain registration in the *Medical Register*, whereby he receives legal authority to practise.

The Minimum Period.—It must be remembered that the period of five years is a minimum; more is often required, even by the man of good abilities and reasonable industry, and some of the universities prescribe a longer period. Besides these qualities a student, to obtain a registrable qualification in the minimum period of five years, or fifty-seven months, must have a considerable amount of good luck; in other words, he must keep in good health through every term, and never fail at a single examination. Thus, for instance, before presenting himself for any examination he must be "signed up" for the subjects covered by that examination; this means that his teachers have to certify that he has diligently attended the required number of lectures or classes in the subjects in question. If, however, the student happens to be ill during the term when such lectures or classes are taking place, he may miss enough of them to make it impossible for him to be signed up. Then again, should he fail to satisfy the examiners at some examination, he cannot present himself for re-examination for at least three months. This generally entails further consequences, because, apart from the student's success at the next stage in his career being imperilled by the need for restudying the subjects in which he has failed, the Examining Boards usually insist upon a definite interval elapsing between one examination and the next. Further, many Boards have refused to recognize lectures and classes which have been attended before the student has passed the requisite examination in earlier subjects, and the Council now recommends that the professional examinations in anatomy and physiology be passed before the minimum period of three years' subsequent study be entered on; in other words, no clinical study should count as such until these examinations have been successfully completed. Failure at an examination may thus not only mean deferment of the date of examinations, but deferment of the beginning of the student's study of certain subjects. It is thus exceedingly easy for a student to fail to qualify in five years, and, as a fact, the majority of students take longer.

In speaking of the minimum period, it is to be remembered also that that time is only sufficient to gain a registrable qualification, such as a Bachelorship of Medicine or Surgery or the Diplomas of the Royal Colleges. Those who wish to take a higher qualification—for instance, the F.R.C.S.Eng.—must prolong their work for another year or more. So, too, in some cases, must those who desire to convert their Bachelorship into a Doctorate. This may entail further formal examination, but at some universities the M.D. is obtainable on presentation of a thesis when the Bachelor has attained a certain age and has practised for a certain number of years. However, a student's career proper may be considered, perhaps, to have ended when he obtains his first registrable qualification, for while preparing himself for any further tests he can, and usually does, hold some junior appointment which more or less covers his expenses.

Memorandum on Students' Registration

The following memorandum has been drawn up on behalf of the General Medical Council as to the procedure for those who desire to be registered as medical or dental students.

The requirements for the registration of medical and dental students are the same, and every intending student should, in his own interest, register as soon as he begins his professional curriculum.

A recognized examination in general education must first be passed. If the student intends to obtain a university degree, he should apply to the university he selects for information as to its matriculation requirements in arts or pure science, or as to any examinations which may be accepted in fulfilment thereof. If the student intends to obtain a qualification from one of the licensing corporations (these are the Conjoint Boards in England, Scotland, and Ireland, the Society of Apothecaries of London, and the Apothecaries' Hall of Dublin), any of the examinations indicated below will be accepted. The subjects required are: (1) English, (2) Mathematics (elementary), (3) a language other than English, and (4) a fourth subject as required by the regulations of the particular examination, to be chosen from the following—namely, History, Geography, Botany, Physical Science, Natural Science, Latin, Greek, Hebrew, French, German, or other language accepted by a university for matriculation. School certificates (other than "Higher") must show "Credits" in each of the prescribed subjects. When school certificates with four credits are presented, or certificates from the Educational Institute of Scotland and College of Preceptors, the passes in the four subjects must be shown to have been obtained at not more than two sittings.

The requirements of the preliminary examination in general education being satisfied, it is then necessary for the student to pass a further or pre-registration examination (theoretical and practical) in elementary chemistry and elementary physics, which is conducted or recognized by one of the licensing bodies—that is, a university or licensing corporation. These subjects must be passed *in addition* to those included in the preliminary examination—for example, chemistry, taken as one of the four required subjects in the preliminary examination cannot also count as one of the subjects of the pre-registration examination. These subjects may be studied at a university or medical school, or at a secondary school or other institution recognized by the body whose pre-registration examination it is intended to take. The student should, in every case, write beforehand to the body whose qualification he desires to obtain (a list will be found below) for information in regard to its requirements for this examination, and, although it is not necessary to pass in biology before registration as a student, application should be made at the same time to the body selected to ascertain their requirements in regard to this subject.

These two examinations (in general education and in physics and chemistry) having been passed, and the student having attained the age of 17 years, he should apply to one of the universities or one of the medical schools for admission to its course of medical study. When medical study has been begun, he should apply to the Dean of the School, or to the Registrar of one of the branches of the General Medical Council, for a form of application for registration as a student, and should have it completed and sent in to one of the Branch Councils as soon as possible. There is no fee for this registration. The medical curriculum will extend for at least five years, and the dental curriculum for at least four years, from the date of registration as a student.

A dental student may begin his curriculum, if he so desires, as a pupil in dental mechanics of a registered dental practitioner; but study at a dental school is to be preferred. If, however, he is apprenticed to a dental practitioner he will have to devote twice as much time to instruction in dental mechanics as he would if he had taken this subject in a school. This will have the effect of lengthening the curriculum. In any case a student can only obtain a concession of twelve months out of the four years' curriculum in respect of such apprenticeship.

The addresses of the Branch Registrars are:

General Medical Council, 44, Hallam Street, Portland Place, London, W.1.

Scottish Branch Council, 44, Queen Street, Edinburgh, 2.

Irish Branch Council, 35, Dawson Street, Dublin.

EXAMINING BODIES IN PRELIMINARY EDUCATION

The following is a list of the officials of the examining bodies in preliminary education, with the names of the examinations in parentheses:

Secretary, Queen's University of Belfast. (Matriculation.) Assistant Secretary, Ministry of Education, Belfast. (Senior Certificate.)

Registrar, The University, Bristol. (Matriculation, School Certificate, or Higher School Certificate.)

Registrary, The University, Cambridge. (Previous.)

Secretary, Cambridge Local Examinations, Syndicate Buildings, Cambridge. (School or Higher School Certificate.)

Medical Registrar, University of Dublin (Trinity College), Dublin. (Entrance examination to the School of Physic.)

Registrar, University of Durham College of Medicine, Newcastle-on-Tyne. (Matriculation, School or Higher School Certificate.)

Registrar, Irish Conjoint Board, Royal College of Surgeons, Dublin. (Preliminary Examination.)

Registrar, National University of Ireland, Dublin. (Matriculation.)

The Assistant Commissioner of the Department of Education, 1, Hume Street, Dublin. (Senior Grade Examination or Leaving Certificate.)

Secretary of the Examinations Council, The University of London, London, W.C.1. (Matriculation, General, or Higher School Certificate.)

Secretary, Northern Universities Joint Matriculation Board, 315, Oxford Road, Manchester. (Matriculation, School, or Higher School Certificate.)

Registrar, University Registry, Oxford. (Responsions.)

Secretary, Oxford and Cambridge Schools Examination Board, Schools Examination Office, Balliol College, Oxford. (School or Higher School Certificate.)

Secretary, Oxford Local Examinations, University Press, Oxford. (School or Higher School Certificate.)

Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1. (Senior Certificate at Credit Standard.)

Secretary, Educational Institute of Scotland 47, Moray Place, Edinburgh. (Preliminary Medical Certificate.)

Secretary, Scottish Education Department, 14, Queen Street, Edinburgh. (Leaving Certificate.)

Secretary, Scottish Universities Entrance Board, 81, North Street, St. Andrews. (Scottish Universities Preliminary Examination.)

Registrar, University of Wales, Cathays Park, Cardiff. (Matriculation.)

Clerk, Central Welsh Board, Cardiff. (School or Higher School Certificate.)

[*Note.*—Certificates of the College of Preceptors and School Certificates (other than "Higher") must show "Credits" in each of the prescribed subjects.]

LICENSING BODIES

The following is a list of officials of licensing bodies and their addresses:

ABERDEEN. The Secretary of the Medical Faculty, The University.

BELFAST. The Secretary, Queen's University.

BIRMINGHAM. The Registrar, The University.

BRISTOL. The Registrar, The University.

CAMBRIDGE. The Registrary, The University.

DUBLIN. The Medical Registrar, The University, Trinity College, The Registrar, National University of Ireland.

DURHAM. The Registrar, University of Durham College of Medicine, Newcastle-upon-Tyne.

EDINBURGH. The Dean of the Faculty of Medicine, The University.

GLASGOW. The Registrar, The University, W.2.

LEEDS. The Registrar, The University.

LIVERPOOL. The Registrar, The University.

LONDON. The Academic Registrar, The University, W.C.1.

MANCHESTER. The Registrar, Victoria University.

OXFORD. The Dean, Department of Medicine, The University.

ST. ANDREWS. The Secretary, The University.

SHEFFIELD. The Registrar, The University.

WALES. The Registrar, The University Registry, Cathays Park, Cardiff.

LICENSING CORPORATIONS

ENGLISH CONJOINT BOARD. The Secretary, 8, Queen Square, Bloomsbury, W.C.1.

SCOTTISH CONJOINT BOARD. The Secretary, 18, Nicolson Street, Edinburgh.

IRISH CONJOINT BOARD. The Secretary, Royal College of Surgeons in Ireland, Dublin.

APOTHECARIES' SOCIETY OF LONDON. The Registrar, Blackfriars, London, E.C.4.

APOTHECARIES' HALL OF IRELAND. The Registrar, 95, Merrion Square, Dublin.

MEDICAL SCHOOLS

The following is a list of medical schools (other than universities) and their officials:

ABERYSTWYTH. The Registrar, University College. (University of Wales. First year only.)

BANGOR. The Registrar, University College. (University of Wales. First year only.)

CARDIFF. The Dean of the Medical School, Welsh National School of Medicine.
The Registrar, University College of South Wales and Monmouthshire.

CORK. The Registrar, University College.

DURHAM. The Registrar, College of Medicine, Newcastle-upon-Tyne.

DUBLIN. The Medical Registrar, University of Dublin, Trinity College.
The Registrar, University College.
The Secretary, School of Medicine, Royal College of Surgeons.

EDINBURGH. The Dean, School of Medicine of the Royal Colleges, Surgeons' Hall.

GALWAY. The Registrar, University College.

GLASGOW. The Dean, St. Mungo's College.
The Dean, The Anderson College of Medicine.
The Mistress, Queen Margaret College, W.2 (for women students of the University of Glasgow).

LONDON. Charing Cross Hospital, The Dean of the Medical School, W.C.2.
Guy's Hospital, The Dean of the Medical School, S.E.1.
King's College, The Dean of the Medical Science Faculty, Strand, W.C.2.
King's College Hospital, The Dean of the Medical School, S.E.5.
London Hospital, The Dean of the Medical College, E.1.
London (Royal Free Hospital) School of Medicine for Women, The Dean, 8, Hunter Street, W.C.1.
Middlesex Hospital, The Dean of the Medical School, W.1.
St. Bartholomew's Hospital, The Dean of the Medical College, E.C.1.
St. George's Hospital, The Dean of the Medical School, S.W.1.
St. Mary's Hospital, The Dean of the Medical School, W.2.
St. Thomas's Hospital, The Dean of the Medical School, S.E.1.
University College Hospital, The Dean of the Medical School, W.C.1.
Westminster Hospital, The Dean of the Medical School, S.W.1.

SWANSEA. The Registrar, University College. (University of Wales. First year only.)

This section of the Educational Number would be incomplete without brief mention of the memorandum drawn up on behalf of the General Medical Council on the procedure to be adopted by those who desire to enter the profession of medicine, to which reference is made in the introductory article at page 442. The pamphlet (price 1s. post free) sets out in plain language the information for which the Council is often asked by prospective medical students or their guardians.

Universities in England and Wales

There are eleven universities in England and Wales, and some account of each of them follows. They all have now fully developed medical faculties.

UNIVERSITY OF OXFORD

Though the Oxford Faculty is the oldest in the kingdom systematic university teaching for students of medicine only really began in 1883, when Burdon-Sanderson came to Oxford from University College, London, to be the first Waynflete Professor of Physiology. From that date onwards there was a steady increase in the provisions for teaching and for the conduct of original investigation; the rate of this increase has in the last two years been accelerated—first, by the opening of the Nuffield Institute for Medical Research, and, secondly, by Lord Nuffield's munificent further gift of £2,000,000 to the University for the benefit of the Medical School. The first appointments under the scheme have already been made, and in the next few years the facilities for teaching and research, both in the preclinical and in the clinical departments of the school, will be considerably strengthened. On the other hand it is perhaps necessary to emphasize two points. In the first place Oxford does not wish to in-

crease the number of its medical students, but to keep up their standard of quality. In the second place it is not the intention of those who are planning the future that the average student should complete his clinical work in Oxford; possibly a few who are engaged in research may be given this opportunity when the Nuffield scheme is fully developed.

The courses leading to the medical and surgical degrees of the University (B.M., B.Ch.; D.M.; M.Ch.), as also that for the diploma in ophthalmology (D.O.), are open to both sexes. Whereas, however, a student must be a member of the University and have taken the degree of B.A. before he can take the medical and surgical degrees, these restrictions do not apply to candidates for the diploma in ophthalmology.

Guidance for Medical Students

At school, apart from acquiring knowledge, the prospective medical student should train himself to think clearly and to write clearly; he is also well advised to learn those languages, in particular German, which will be of use to him in his future reading.

Before he can become a member of the University, and thereby of the Medical School, a student has to be accepted by a college or by one of the non-collegiate bodies. This normally involves the taking of a college entrance examination, but exemption may be gained on the result of a college scholarship examination or in other ways. Correspondence on such matters should be addressed to the Head of the college concerned, and not to the Dean of the Medical School.

When a student has been accepted by a college he next has to pass, or obtain exemption from, the University entrance examination, Responsions; Latin is a compulsory subject in this or the exempting examination. Entries for Responsions or claims for exemption should be made through the Head of the student's college.

After passing Responsions or the equivalent the medical student normally takes the preliminary examinations in physics and chemistry and in biology. These he can attempt, if his school authorities are willing, before he comes into residence, and it is an advantage to him so to do, provided such a course does not interfere with his general education. These particular examinations satisfy simultaneously the preliminary requirements both of the University in respect of the B.A. degree in animal physiology and also of the General Medical Council in respect of medical qualification. Questions about alternative courses, and about entry for or exemption from these examinations, should be addressed by the student to the authorities of his college, and not to the Dean of the Medical School.

The first step taken after this is usually the passing of the examination in organic chemistry for First B.M. Exemption can only be claimed by those who have passed certain examinations in chemistry of the University. A man who has passed the preliminary examinations before coming into residence normally takes organic chemistry in his first term, and thereafter prepares for the examinations in human anatomy and physiology for First B.M., which he will probably take in his sixth term, though there are alternative courses. He must pass simultaneously in both anatomy and physiology, unless he has previously been placed in the first or second class in the Final Honours School of Animal Physiology, in which case he is exempted from the physiology part of First B.M. Nothing else can exempt him from the examination in this subject, and there is no exemption at all from that in human anatomy.

Practically every medical student attempts to obtain the B.A. degree by taking the Final Honours School of Animal Physiology, for this course diverts him least from purely professional work, and passing the preliminary examinations mentioned above allows him to enter for this final examination. The special course in preparation for it lasts one year, and the examination may not be taken earlier than the eighth term of residence unless the student has special status. If he enters for the examination later than his twelfth term of residence he is over standing for honours.

The student who has passed his preliminary examinations before coming into residence should thus have passed the examinations for First B.M. and for the degree of B.A. by the end of his third year at the University.

He must thereafter prepare for the examinations for Second B.M. The subjects are materia medica and pharmacology, pathology, forensic medicine and public health, medicine, surgery, and midwifery. The examinations in the first three of these can be taken separately, as soon as the necessary conditions are fulfilled, or simultaneously with any of the other Second B.M. examinations; on the other hand, a student must pass simultaneously in the three last subjects. The examination in these may not be taken, unless the candidate is already a registered medical practitioner, until the eighteenth term from matriculation and the lapse of at least thirty-three months from the date of passing the examinations for First B.M.

The whole of the work for Second B.M. may be done in recognized institutions away from Oxford—for example, the London medical schools. Alternatively, a student who has the necessary qualifications may spend the first six months in Oxford, and thereafter do a further twenty-seven months' work elsewhere. In this second case the courses which he will take at Oxford will last from September to the following March, and will include instruction in pharmacology, general pathology, and elementary medicine and surgery.

Further details about the course for the qualifying degree of B.M., B.Ch., and also about the higher medical and surgical degrees, are to be found in the current edition of *University of Oxford Examination Statutes* and in a pamphlet entitled "Information Concerning the School of Medicine, etc.," both of which can be obtained from the Clarendon Press, Oxford. College authorities, and the Dean of the Medical School, University Museum, Oxford, will also give any assistance that is within their power.

College entrance scholarships, open to would-be medical students, are advertised each July in a special number of the *University Gazette*, which can be bought for a few pence through any bookseller. In addition many valuable prizes, scholarships, and fellowships are awarded to medical students and graduates; they include the Radcliffe Travelling Fellowship, the oldest of such endowments for postgraduate travel and study, which is awarded annually, after examination, by the Master and Fellows of University College. Details about these prizes, etc., can be found in the current edition of the *Oxford University Calendar*.

It is very difficult to give an estimate of the expense of that part of the course which is passed in Oxford, as the cost varies very much with the different colleges. Eighty pounds a term is perhaps the amount paid by the average student, but many manage on less than this. Once the B.A. degree has been taken university and college dues are less.

UNIVERSITY OF CAMBRIDGE

The professional degrees given by this university are those of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.Chir.) (these degrees cannot be taken separately), and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants a diploma in medical radiology and electrology to medical practitioners, not necessarily graduates of the university. Information regarding this diploma will be found in a later section under the heading "Radiology." A candidate for the M.B., B.Chir. degrees must have passed the Previous Examination or some other examination accepted by the university as its equivalent under the new regulations. He must reach an honours standard in a Tripos. Naturally, most students will take the Natural Sciences Tripos, which qualifies him for the degree of B.A. The attainment of a sufficient standard in certain subjects in this Tripos will secure exemption from the corresponding tests in the M.B. course. Members of Girton College and Newnham College are admitted to the examinations.

Professional Examinations

An explanation of the changes in the medical curriculum at Cambridge, which came into force in October, 1934, was given in the *British Medical Journal* of July 7, 1934 (p. 26). To obtain the M.B., B.Chir. degrees candidates must have reached an honours standard in a Tripos and passed the First and Final Medical Examination.

First M.B.—This comprises (1) general and inorganic chemistry, (2) physics, (3) elementary biology, (4) organic chemistry. The parts may be taken together or separately. In either case the candidate, before admission to examination, must have passed or been exempted from the Previous Examination. Certain exemptions from the First M.B. Examination are allowed; the regulations may be obtained from the

Registrary. An examination in each part is held three times in the year.

A candidate for the Final Examination must have (*a*) completed the First Examination; (*b*) dissected the whole body adequately and thoroughly; (*c*) attended an approved course, and passed an examination in Pharmacology; (*d*) attained the honours standard in some Tripos; (*e*) attended an approved course, and passed an examination in anatomy and (*f*) in physiology.

Final M.B.—This is divided into two parts, to neither of which the candidate is admitted until he has fulfilled the conditions previously mentioned. A candidate for the first part, which deals with the principles and practice of surgery (including special pathology) and midwifery and diseases peculiar to women, must have completed five years of medical study and be signed up in these subjects, and have completed two years and a half of hospital practice. Before admission to the second part the candidate must have completed five years of medical study, and be duly signed up in all subjects and have completed three years of hospital practice. The examination is in the principles and practice of physic (including diseases of children, mental diseases, and medical jurisprudence), pathology (including hygiene and preventive medicine), and pharmacology (including therapeutics and toxicology). The Final M.B. examinations are held twice a year—in June and December.

The Higher Degrees

The M.D. degree may be taken by a graduate of the University of eight years' standing who has passed the Final M.B. Examination, after writing a thesis approved by the M.D. Degree Committee, and keeping a further Act. He may also be allowed or required to take an examination, oral or written, or both, on the field of Medicine within which the subject of his thesis falls.

A candidate for the M.Chir. degree who is an M.A. may be admitted to the examination after he has become legally qualified to practise surgery. Other candidates may be admitted when two years have elapsed after they have completed the requirements for the B.Chir. degree, and may be admitted to the M.Chir. degree after three years have elapsed since they were admitted to the B.Chir. degree. The examination comprises pathology, surgery, surgical anatomy, and surgical operations. The tests are partly in writing, partly oral, and partly practical: they include the writing of an extempore essay. The examination is held in February in each year.

FEES

In addition to college fees, tutorial fees, and the expense of living, the following examination fees are payable: First M.B., £5 5s.; tests in Pharmacology, Physiology, and Anatomy, £1 1s.; Final Examination, £12 12s. For schedules referring to the examinations, list of schools and hospitals recognized by the university, and other information, application should be made to the University Registrary, Cambridge.

UNIVERSITY OF LONDON

Under the regulations of the University of London the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Bachelor of Surgery, Master of Surgery in four branches, Doctor of Medicine in six different Branches, Bachelor of Dental Surgery, and Bachelor of Pharmacy. The university has its own matriculation examination, and it is most advisable that candidates should obtain and carefully study the booklets relating to it. The matriculation examination is open to any person, of either sex, who has attained the age of 16. It is held in January, June, and September, and lasts four days; the first two take place both in London and in certain provincial centres; the September examination is held in London only.

In no circumstances is a degree granted to anyone in less than three years after the date at which he passed the matriculation examination or obtained registration in some other way. All medical students must normally spend not less than five and a half years in professional study subsequent to matriculation, of which the last three years must be spent at a school of advanced medical studies.

Professional Examinations

M.B., B.S.—There are three examinations, the last two being subdivided. They are held twice a year.

The First Examination (held in July and December) covers inorganic chemistry, general biology, and physics, there being two papers, a practical test, and a possible oral test in each subject. The names of successful candidates are placed in alphabetical order.

The Second Examination is held in March and July. Part I covers organic chemistry, the candidate's knowledge being tested as in the earlier examination. Candidates for Part II must have passed the First Examination at least eighteen months previously, besides having completed Part I of the Second Examination. The subjects are anatomy, physiology, and pharmacology, the tests being written, oral, and practical. Candidates who fail in pharmacology may sit for re-examination in that subject alone if the examiners think fit, and candidates who pass in pharmacology only may similarly be credited with that subject.

No candidate, unless he is already a registered medical practitioner, is admitted to the Third M.B., B.S. Examination within thirty-three months of the date of his passing the Second Examination in Anatomy and Physiology. The subjects are medicine (including mental diseases), pathology, forensic medicine and hygiene, surgery, and obstetrics and gynaecology. They may be divided into two groups, one comprising medicine, pathology, forensic medicine, and hygiene, and the other surgery and obstetrics and gynaecology. Either group may be taken first at the option of the candidate, or the groups may be taken together. Only candidates who show a competent knowledge of all the subjects comprising a group are passed. There is no separate examination held for honours, but the names of successful candidates, who have passed both groups of the examination at one time, are divided into an honours list and a pass list, and a university medal may be awarded the candidate who has most distinguished himself in the whole examination. A supplementary list is issued of candidates who have passed in one group only.

The Higher Degrees

M.D.—An examination for the M.D. is held twice yearly—in December and July. Every candidate must have passed the examination for the M.B., B.S. unless he became M.B. before May, 1904. He may present himself for examination in any one of the following branches: (1) medicine, (2) pathology, (3) mental diseases and psychology, (4) midwifery and diseases of women, (5) hygiene, (6) tropical medicine, and if he wishes, may pass also in another branch at a subsequent examination.

Two years must elapse between acquiring the M.B., B.S. and sitting for the M.D. in any branch, except that in the case of Branches I–IV a candidate who has obtained honours at the M.B., B.S. Examination may enter for the M.D. Examination after one year. Candidates may also be admitted to the M.D. Examination (Branches I–VI) one year after taking the M.B., B.S. examination on the grounds of exceptional experience in their subject. Certificates of approved appointments are required for the M.D. (Branches I–IV) except in the case of candidates who have been engaged in professional practice for five years. In each branch the scheme of examination is the same: two papers on its special subject, a paper on an allied subject—for example, medicine in the case of Branch IV, pathology in Branch I—an essay on one of two suggested topics with the special subject, and a clinical or other practical test. Both written and practical examinations must be passed, though exemption can be obtained from the former in exceptional circumstances. In any branch of the M.D. Examination a gold medal of the value of £20 may be awarded.

M.S.—The regulations with regard to the Mastership in Surgery are of a corresponding kind, but there are four branches in which it may be obtained—general surgery, dental surgery, ophthalmology, and laryngology, otology, and rhinology.

FEES

For Matriculation: 2½ guineas for each entry. First Examination: 6 guineas for each entry to the whole examination. For re-examination in one subject the fee is 2 guineas. Second Examination, Part I: 3 guineas for the first and each subsequent entry. Second Examination, Part II: 9 guineas for each entry to the whole examination. For re-examination in Pharmacology the fee is 4 guineas. For re-examination in Anatomy and Physiology the fee is 6 guineas. M.B., B.S.

Examination: 12 guineas for each entry to the whole examination, and 6 guineas for examination or re-examination in either group. M.D. and M.S. Examinations: 20 guineas, and 10 guineas on re-examination.

Inquiries should be addressed to the Academic Registrar, the University of London, W.C.1.

UNIVERSITY OF BIRMINGHAM

This university confers medical and surgical degrees—namely, M.B., Ch.B., M.D., Ch.M., and M.D. (State Medicine)—also degrees in dentistry (B.D.S. and M.D.S.), and Diplomas in Dentistry (L.D.S.) and in Public Health (D.P.H.). A degree of Ph.D. is also conferred for research study in medicine under special regulations. Candidates must be graduates in medicine of a recognized university. The M.B., Ch.B. candidate may also take in the earlier part of his medical curriculum courses leading to the ordinary B.Sc. degree in anatomy and physiology, or B.Sc. with honours. The extra time required for either of these science degrees is one year. The full course of study for the degrees of M.B., Ch.B. extends over six years. The Senate has power to accept courses of study and examinations passed at other recognized universities as exempting from the examinations in physics, chemistry, biology, and organic chemistry. In the case of such students at least three years must be spent in attendance upon classes at the university.

Students entering the Medical Faculty for the M.B., Ch.B. degrees must have passed—

(1) Either (*a*) the matriculation examination of the Joint Board of the Universities of Manchester, Liverpool, Leeds, Sheffield, and Birmingham; or (*b*) some other examination recognized as equivalent to the matriculation. Candidates for medical degrees are required to have passed in English literature and mathematics, and are recommended to take Latin and a science subject—chemistry or physics—at the matriculation examination. The matriculation examination of the Joint Board is held in July and September. The regulations and the list of examinations accepted in lieu thereof will be sent on application to the Secretary to the Board, Joint Matriculation Board, 315, Oxford Road, Manchester. *Note.—In and after October, 1938, revised entrance requirements will come into force.*

(2) A recognized pre-registration examination in the subjects of chemistry, physics, and biology—for example, the higher school certificate of the Joint Matriculation Board; or a candidate may attend first-year courses in the university, October to June (chemistry, physics, and biology)—that is, First M.B., Ch.B. This examination may be passed in two sections; not less than two subjects must be passed on first entry.

Professional Examinations

The candidate for the M.B., Ch.B. degrees has four examinations to pass subsequent to passing the First M.B., Ch.B. Examination or exemption therefrom. In the Second (Part II) and Final examinations the candidate must pass in all the prescribed subjects or undergo the whole examination again.

The First M.B. deals with physics, chemistry, and biology (pre-registration). The Second M.B. (Part I) comprises the subject of organic chemistry. The Second M.B. (Part II) comprises anatomy and physiology, and the student must pass in both simultaneously. The Third M.B. comprises pathology and bacteriology taken as one complete subject. The Fourth M.B. takes place at the end of the fifth year, the subjects being forensic medicine, toxicology, public health, and therapeutics (inclusive of pharmacology and materia medica).

Final M.B.—This comprises medicine, surgery, midwifery and diseases of women, ophthalmology, and mental diseases. The candidate, in addition to more ordinary certificates, must be prepared with a certificate of having acted as a post-mortem clerk for three months, and received special instruction in anaesthetics and clinical instruction in diseases peculiar to women, asylum ward work, ophthalmology, children's diseases, venereal diseases, ear and throat and skin diseases, etc. In respect to ophthalmology he must show that he has learnt refraction work. He also has to present to the examiners at the time of his examination a short written commentary on a gynaecological subject or case investigated during the period of gynaecological clerking. *Revised regulations for First-year and Second-year Courses and Examinations will come into operation in October, 1938.*

M.D.—An ordinary candidate for this degree must be an M.B., Ch.B. of not less than one year's standing. He presents an original thesis for approval, and then passes a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit. The regulations respecting the Ch.M. are of the same general character. Subject to certain requirements as to special research or other post-graduate study, graduates of other universities may obtain the M.D. and Ch.M. in the same way as holders of the Birmingham M.B., Ch.B.

The degree of M.D. (State Medicine) is open to M.B., Ch.B. graduates of the university who possess also a diploma in public health or degree in sanitary science or public health recognized by the university. The period of postgraduate study for this degree must occupy one year in the case of Birmingham M.B., Ch.B. graduates, and two years in the case of graduates of other universities.

The degree of Ph.D. is open to qualified medical practitioners under special conditions applicable in the Faculty of Medicine. Under these regulations the necessary attendance and research during a period of two years may be carried out in the laboratories of the university or in associated hospitals.

FEES

The fee for Matriculation is £2 (payable to the Joint Matriculation Board); £2 10s. for First M.B. Examination (if taken in university), and £2 10s. for each of the first four Professional Examinations; M.B., Ch.B. degree fee, £10; M.D. and Ch.M. Examinations, £12 10s. each. For further particulars application should be made to the Registrar or the Dean of the Medical Faculty, University of Birmingham, Edmund Street.

UNIVERSITY OF BRISTOL

In the Faculty of Medicine the following degrees are conferred: Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Dental Surgery (B.D.S.), and Master of Dental Surgery (M.D.S.). There are also the following diplomas: diploma in public health (D.P.H.),[1] diploma in dental surgery (L.D.S.), and diploma in veterinary State medicine. All candidates for degrees in medicine, surgery, and dentistry are required to reach matriculation standard in the school certificate examination, or to pass such examination as may be regarded as equivalent by the Senate. All courses, degrees, and diplomas are open to men and women alike.

Conjoined Degrees of Bachelor of Medicine and Bachelor of Surgery.—Candidates must be not less than 21 years of age and have pursued the courses prescribed by university regulations during not less than five years after passing the First Examination in chemistry and physics, and entry upon professional study at a medical school, of which three shall have been spent in the university, and two of these three subsequent to passing the Second Examination. All candidates for the degrees of M.B., Ch.B. are required to satisfy the examiners in the several subjects of three examinations.

The First Examination.—The subjects of examination are: chemistry, physics, and biology. This part of the curriculum shall extend over one year. (Candidates who have passed an equivalent higher school certificate examination in these subjects will not be required to sit for the First Examination, and will be regarded as having completed one year of study.)

The Second Examination.—The subjects of examination are: anatomy, physiology, elementary pharmacology, and elementary pathology.

The Final Examination.—The subjects of examination are: materia medica and pharmacy, pharmacology, pharmacotherapeutics and toxicology, pathology and bacteriology, (Section I); forensic medicine, public health, obstetrics (including diseases of women), surgery (systematic, clinical, practical and operative, including ophthalmology and oto-rhino-laryngology), medicine (systematic, clinical, and practical, including mental diseases) (Section II). The subjects included in Section II may be taken in two groups—namely, Group I: surgery and obstetrics; Group II: medicine, public health, and forensic medicine. Candidates may pass Sections I and II together or separately, and the two groups of Section II may

[1] At present in abeyance.

likewise be taken together or separately, but no student can obtain honours who elects to take the two groups of Section II separately.

Degree of Doctor of Medicine.—Candidates must be Bachelors of the university of not less than two years' standing as such, and may elect either (1) to pass an examination in general medicine, or (2) to pass an examination in State medicine, or (3) to present a dissertation. The candidate who elects to pass the examination in State medicine must hold a diploma in public health of some university or college, and the candidate who elects to present a dissertation may be examined in the subject thereof.

Degree of Master of Surgery.—The degree may be taken in general surgery or in special subjects. Candidates shall be Bachelors of the university who have practised for two years in an approved hospital (including the holding of an approved appointment for six months), and one of the two years shall have been spent in a hospital with a medical school attached. They shall present a dissertation and pass an examination. For general surgery, the examination shall include a written examination in surgery, a written examination in surgical anatomy and surgical pathology, a clinical examination, an oral examination, and an examination in operative surgery. For special subjects—that is, ophthalmology or oto-rhino-laryngology or gynaecology—the examination shall include a written examination in the anatomy, physiology, and pathology of the region of the body concerned (including in the case of ophthalmology, physiological optics), and a written examination in general surgery, together with a written, oral, and clinical examination in the particular branch of surgery concerned, as well as an examination in operative surgery of the region concerned.

UNIVERSITY OF DURHAM

To its own undergraduates, who may be of either sex, this university grants the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.), and also grants the higher degrees of Doctor of Medicine (M.D.), Master of Surgery and Doctor of Surgery (M.S. and D.Ch.), Bachelor of Hygiene, Doctor of Hygiene (B.Hy. and D.Hy.), and Bachelor of Dental Surgery and Master of Dental Surgery (B.D.S. and M.D.S.); it also grants diplomas in public health, psychiatry, and dental surgery. The university accepts the Durham University school certificate examination (if a sufficient standard is obtained in certain specified subjects) for matriculation purposes, but also accepts the tests of a considerable number of other educational bodies as a full or partial equivalent. A list may be obtained on application. In addition to satisfying the matriculation requirements of the university, every student must (1) pass a pre-registration examination in physics and inorganic chemistry conducted or recognized by the university, and (2) be registered on the books of the General Medical Council. The university requires that at least three years be spent in residence in the university; in certain cases candidates may obtain exemption from the First and Second Examinations, but the later professional examinations must be passed in the university.

Professional Examinations

There are four professional examinations for the M.B., B.S. degrees. The First Examination is held in March, June, and December; the Second and Third Examinations in March and June; and the Final Examination in June and December. The first deals with biology and chemistry in relation to medicine; the second with anatomy and physiology; the third with pathology, bacteriology, materia medica, pharmacology and [illegible] l jurisprudence, and public health. At [illegible] he candidate is examined *in medicine*, and clinical medicine; surgery and clinical surgery; midwifery and diseases of women and children; clinical and practical midwifery and gynaecology; and clinically in psychological medicine, diseases of the throat, nose and ear, diseases of the skin, diseases of the eye, and diseases of children.

M.D.—This degree is only open to Bachelors of Medicine of the university. They must be of at least two years' standing, and must comply with the regulations printed in the Calendar of the Medical School, King's College, Newcastle-upon-Tyne (formerly the University of Durham College of Medicine).

M.S.—Candidates for this degree must have been engaged in practice for at least two years subsequent to qualifying M.B., B.S.Durham. The subjects of the examination are surgery, systematic and clinical, surgical anatomy and pathology, and surgical operations.

D.Ch.—The university grants also the degree of Doctor of Surgery. Candidates for this degree must be registered medical practitioners, not less than 25 years of age. They must devote three years, subsequent to obtaining a registrable qualification, to the study of surgery and ancillary subjects; one at least of the three years must be spent in the university. The candidate must submit to the professor of surgery the course of study he proposes to follow, and this course must be approved by the Board of Faculty of Medicine.

One year must be devoted mainly to work in the departments of anatomy, physiology, pathology, and bacteriology, and the candidate must submit evidence of having so worked. Not less than six months of another year must be spent as a resident surgeon in a recognized teaching hospital, and the rest of the year in the study of surgery in a recognized medical centre. Not less than six months of one of the three years must be spent in surgical study abroad.

The Degree of Bachelor of Hygiene and the D.P.H.

A period of not less than two years must elapse between the attainment by a candidate of a registrable degree or qualification in medicine, surgery, and midwifery and his admission to the final examination for the degree of B.Hy or for the D.P.H. of the University as the case may be. The curriculum extends over a period of not less than twelve calendar months (or an academic year of whole-time study covering a period of not less than nine calendar months) subsequent to the attainment of a registrable degree or qualification. Candidates for the B.Hy. must take out the curriculum for Part I of the examination at the University of Durham, but for the D.P.H. may do so either at the university or at any medical school or institution recognized by the university. The examination is divided into two parts. Part I is practical, written, and oral, and includes the subjects of bacteriology and parasitology (including immunology, serology, medical entomology, etc.) especially in their relation to diseases of man, and to those diseases of the lower animals which are transmissible to man; chemistry, physics, radiology, and electrology in relation to public health; physiology and biochemistry in their application to nutrition and hygiene; and meteorology and climatology in relation to public health. The subjects in Part II include the principles of public health and sanitation; epidemiology and infectious diseases; vital statistics; sanitary law and administration (including public medical services); sanitary construction and planning; and public health administration. This part of the examination is written and oral, and includes practical examinations in infectious diseases; food inspection; inspection of premises, dwelling-houses, factories, workshops, schools, etc.

Candidates are not admitted to examination in either part until after they have completed the prescribed courses of instruction in the required subjects.

Doctor of Hygiene

Candidates for the degree of Doctor of Hygiene must be Bachelors of Hygiene of the university of two years' standing, and are required to satisfy the examiners that they have conducted original research in the subject of public health.

Diploma in Psychiatry

Candidates must be registered medical practitioners, and, unless qualified before January 1, 1911, must have attended, subsequent to passing their qualifying examinations, courses of instruction in (*a*) anatomy; (*b*) physiology; (*c*) pathology; (*d*) bacteriology; (*e*) psychology and experimental psychology; (*f*) clinical neurology; (*g*) psychiatry; (*h*) clinical psychiatry. The examination consists of two parts, namely: (1) anatomy, physiology, pathology, and bacteriology; (2) psychology and experimental psychology, neurology, and psychiatry (systematic and clinical); and candidates may present themselves for the whole examination or for either part separately.

FEES

The following fees are payable: Matriculation, £2; Examinations, Pre-registration, £3 3s.; First, Second, and Third M.B., B.S., each £5; Final M.B., B.S., £15; M.D. and M.S., each £5; B.Hy. and D.P.H., £12 12s., D.Psy., £10 10s., and D.Hy. and D.Ch., each £20; First, Second, and Third L.D.S., each £3 10s., and Final L.D.S. £5; First, Second, and Third B.D.S., each £5. Final B.D.S., £8; and M.D.S. £5. For degrees

and diplomas: M.B., B.S., B.Hy., and B.D.S., each £6 6s. *plus* the sum of 10s. if it is the initial degree taken in the university; M.S. and M.D.S., each £6 6s.; M.D., D.Ch., and D.Hy., each £10; D.P.H., D.Psy., and L.D.S., each £3.

Further information may be obtained from the Dean, Medical School, King's College, Northumberland Road, Newcastle-upon-Tyne.

UNIVERSITY OF LEEDS

The degrees granted in the Medical Faculty of this university are Bachelor of Medicine, Bachelor of Surgery (M.B. and Ch.B.), and Bachelor of Dental Surgery (B.Ch.D.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), and Master of Dental Surgery (M.Ch.D.). It also gives diplomas in public health, in psychological medicine, in dental surgery, and in nursing.

Candidates for the M.B. must have attended courses of instruction approved by the university for not less than five years, two at least of such years having been passed in the university, at least one year being subsequent to the date of passing the first examination. They must also have matriculated by satisfying the examiners in:

I. *Either* English Composition and English Literature, *or* English Composition and History.
II. *Either* Mathematics or Latin.
III., IV., V. *Three* other subjects not already taken under I and II above, chosen from the following list:

(1) English literature; (2) History; (3) Geography; (4) Greek; (5) Latin; (6) French; (7) German; (8) Some one other language approved by the Board; (9) Mathematics; (10) Mechanics; (11) Physics; (12) Chemistry; (13) General experimental science; (14) Natural history; (15) Botany.

Provided that (*a*) candidates who take Mathematics under II above must include one of the subjects 4–8; (*b*) candidates who take Latin under II above must include one of the subjects 9–15. Except in cases specially approved by the Senate candidates are required to present evidence of possessing a knowledge of mathematics at least equivalent to that of the "Pass" standard at a School Certificate Examination.

Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination.

Professional Examinations

The examination for the M.B., Ch.B. number three.

The First Examination.—This consists of four parts (1) physics and inorganic chemistry, (2) organic and physical chemistry, (3) botany, (4) zoology, each of which may be taken separately, but candidates are not permitted to start their second year's work until Parts 1, 2, and 3 have been passed.

The Second Examination.—This consists of Part I, materia medica and practical pharmacy. Part II, anatomy and physiology. Candidates will be allowed to pass each part separately.

The Final Examination.—The Final Examination consists of Part I, pharmacology and pathology and bacteriology; Part II, medicine, surgery, obstetrics and gynaecology; Part III, forensic medicine, public health, and therapeutics. Part I may be taken at the end of the second clinical year, and must be passed before Parts II and III are taken. Parts II and III may be taken at the end of the third clinical year but not before the completion of the fifth year of medical study. If taken separately Part III may not be passed before Part II.

M.D.—Candidates for this degree must be bachelors of medicine and bachelors of surgery of the university, and subsequently to having graduated must have completed two years of hospital practice or special study approved by the university; or four years in the practice of their profession in one or other of its various branches; six months' hospital practice or special study to count as the equivalent of one year's ordinary practice. Any subject of the medical curriculum except surgery may be chosen for the examination, but a thesis, the title of which must previously receive the approval of the Board of the Faculty of Medicine, may be submitted, and if it is adjudged to be of exceptional merit the candidate may be exempted from further examination.

Ch.M.—The candidate for this degree must have been admitted to the M.B., Ch.B. of the university not less than a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery. He must also have attended certain courses, including one on ophthalmology and one on pathology and bacteriology; he is then examined in surgery in all its branches and in ophthalmology and pathology and bacteriology.

FEES

The Matriculation fee is £2, and on readmission £2 or £2 2s. 6d; for each of the other examinations £6 and £6 on readmission.

The fees for the M.D. and Ch.M. degrees are each £10 and the same on readmission. The fee for conferment of each of these degrees is £5.

UNIVERSITY OF LIVERPOOL

This university, besides granting degrees in medicine and surgery (M.B., Ch.B., M.D., Ch.M., M.Ch.Orth.), awards degrees in dental surgery and in veterinary science. Diplomas are awarded in tropical medicine (D.T.M.), tropical hygiene (D.T.H.), public health (D.P.H.), medical radiology and electrology (D.M.R.E.); also in dental surgery and in veterinary hygiene. The degree of Doctor of Philosophy (Ph.D.) may also be taken in the Faculty of Medicine.

Matriculation

The matriculation examination is governed by the Joint Matriculation Board, 315, Oxford Road, Manchester, 13, which accepts, under certain conditions, the tests of several other bodies as its equivalent. Candidates will be required to have included mathematics among the subjects in which they have passed at such examination. Revised conditions of entry upon degree courses will become operative as from December, 1937.

Professional Examinations

Candidates for the M.B., Ch. B. degrees have three examinations to pass, the first including (1) chemistry, (2) biology (zoology and botany), (3) physics.

Second M.B.—This covers (1) anatomy, (2) physiology, including biochemistry and histology.

Final M.B.—The subjects of the Final Examination are: Part I—(*a*) pathology; (*b*) pharmacology and general therapeutics. Part II—(*a*) forensic medicine and toxicology; (*b*) public health. Part III—(*a*) obstetrics and gynaecology; (*b*) surgery, systematic, clinical, operative and practical, including ophthalmology; (*c*) medicine, systematic and clinical, including therapeutics, mental diseases, and diseases of children. Candidates may take Parts I, II, and III separately, provided that candidates may not present themselves for Part III until they have completed the sixth year of medical study and have passed the examinations in Parts I and II.

M.D.—May be conferred on graduates (M.B., Ch.B.Liverpool): (i) on candidates of two years' standing. Such candidates shall be required to present a thesis certified to be the candidate's own work, together with copies of published original papers upon Medical Science (if the candidate desires). The thesis shall embody the results of personal observations or original research either in some branch of medicine or in some science directly relative to medicine. If the thesis is accepted by Faculty after report from the assessors, the candidate shall present himself for an oral examination on the subject of the thesis; (ii) on candidates of five years' standing by examination in (*a*) medicine and (*b*) a selected branch of medicine.

Ch.M.—May be conferred on graduates (M.B., Ch.B.Liverpool) after examination.

M.Ch.Orth.—May be conferred on graduates in Medicine of Liverpool or other approved university and graduates of a Faculty other than Medicine of Liverpool or other approved university who are Fellows of the Royal College of Surgeons of England, Edinburgh, or Ireland, or of the American College of Surgeons.

Other information concerning the diplomas of this university will be found on page 474.

Fellowships, Scholarships, Exhibitions, and Prizes

The university awards Fellowships annually to students of distinguished merit, as follows:

(1) John Rankin Fellowships in anatomy, two, each of the value of £120, tenable for two years. (2) Ethel Boyce Fellow-

ship in gynaecology, value £100 and tenable for one year. (3) John W. Garrett International Fellowship in bacteriology, value £100 and tenable for one year. (4) Robert Gee Fellowship in human anatomy, value £100 and tenable for one year. (5) Holt Fellowships in physiology and pathology, two in number, value £150 each and tenable for one year. (6) Johnston Colonial Fellowship in biochemistry, value £100 and tenable for one year. (7) Thelwall Thomas Fellowship in surgical pathology, value £150 and tenable for one year. (8) Lady Jones Fellowship in orthopaedic surgery, one, tenable for one year, value £200, offered every two years.

There are, in addition, scholarships, exhibitions, and prizes open to medical students:

Scholarships.—The awards made each year to successful students total over £1,500. They include the following: a University Scholarship of £50, awarded on the results of Part I of the Final M.B. Examinations; a Ridgway Research Scholarship (£94); a T. J. Hughes Research Scholarship (£72); a Scholarship in mechanical dentistry of £20; two Lyon Jones Scholarships, of the annual value of £19 each for two years, awarded one on the results of the First M.B. Examination, the other on the Second M.B.; the Derby Exhibition of £15; the Clinical School Exhibition of £15; the Owen T. Williams Prize; the Torr Gold Medal in anatomy; John Rankin Exhibition in practical anatomy, £23; the George Holt Medal in physiology; the Kanthack Medal in pathology; Mitchell Banks Medal in anatomy; the Robert Gee Prize of £5 5s. in children's diseases; Mary Birrell Davies Memorial Scholarship (women), £60 per annum for four years; Robert Gee Entrance Scholarship (men), value of £42 10s. per annum for four years; Dental Operating Prizes (four); Orthodontia Prizes (two); Samuels Memorial Scholarships, three at £27 each; one Thomas H. Bickerton Prize in anatomy; Dr. N. E. Roberts Prize in zymotic diseases; Adami Prize in pathology; Leith Murray Memorial Prize in obstetrics and gynaecology; Rich Prize; J. Hill Abram Prize in pharmacology and general therapeutics; J Hill Abram Prize in medicine; Ash's Prize in dental surgery, value £2 2s.; Gilmour Medal; and other entrance scholarships. In addition, a number of gold and silver medals have recently been instituted in the following subjects: pharmacology, surgery, forensic medicine and toxicology, public health, medicine, orthopaedic surgery, obstetrics and gynaecology, and laryngology and otology.

FEES

Information as to the fees for the courses of instruction should be sought from the Dean of the Medical Faculty.

VICTORIA UNIVERSITY OF MANCHESTER

This university grants the four ordinary degrees in medicine and surgery—M.B. and Ch.B. and M.D. and Ch.M.; degrees and a diploma in dental surgery; a diploma in public health; a diploma in psychological medicine; and a diploma in bacteriology. Candidates for degrees must pass the special matriculation examination prescribed by the Faculty of Medicine (or some equivalent examination accepted in lieu thereof: see the prospectus of the Joint Matriculation Board), and study at the university itself for at least two years of the six years' curriculum, subsequent to the passing of the First M.B. Examination. The matriculation examination comprises (1) Latin, (2) mathematics, (3) English, (4) mechanics, (5) one subject at choice as approved by the Joint Board. It is held in July and September.

Professional Examinations

M.B., Ch.B.—There are four examinations for this degree. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. The First M.B. is divided into Part I, chemistry and physics; Part II, biology—(*a*) botany, (*b*) zoology. The parts may be taken separately or together. At the Second M.B. the candidate is examined in anatomy (including histology) and physiology; at the third in pathology, bacteriology, and pharmacology (including materia medica and practical pharmacy). The Final Examination is divided into two parts, which may be taken separately. Part I consists of (*a*) forensic medicine and toxicology, and (*b*) hygiene and preventive medicine. Part II consists of (*a*) medicine, including dermatology, diseases of children, and mental diseases; (*b*) surgery, surgical pathology, and diseases of the eye and of the ear, nose, and throat; (c) obstetrics and gynaecology.

M.D.—A candidate for this degree must be a Bachelor of Medicine of the university of at least one year's standing. He has a choice between presenting an original dissertation or undergoing a written (as well as a practical and clinical) examination in medicine, a written and practical examination in pathology, and one other subject selected by himself.

Ch.M.—A candidate must have held, since becoming Ch.B., and for not less than twelve months, a post in a public institution affording opportunity for the study of the branch of surgery in which examination is desired. The examination in Branch I comprises the general field of surgery; Branch II, obstetrics and gynaecology; Branch III, ophthalmology; Branch IV, otology, laryngology, and rhinology.

B.Sc. and M.Sc.—The ordinary degree of B.Sc. in the Schools of Anatomy and Physiology may be obtained by students in medicine who in their third year of study for the degrees of M.B., Ch.B. complete the additional courses in these subjects prescribed for this degree. The degree of B.Sc. with Honours in Anatomy or Physiology may be obtained by students in medicine who, after completing the third year of study for the degrees of M.B., Ch.B. devote the following year to the study of the subject of the Honours School. Graduates in science of this university, of not less than one year's standing from the date of their graduation as Bachelors, may proceed to the degree of M.Sc. by the presentation of an approved thesis on some subject coming within the scope of the Faculty of Science.

FEES

The following examination fees are payable: Matriculation, £2; on readmission, £2. Each M.B. examination £8 8s.; on readmission, £3 3s. M.D., including the conferring of the degree, £15 15s. Ch.M., £10 10s. for the examination and £8 8s. for conferment of degree. Application for further information should be addressed to the Dean of the Medical School.

UNIVERSITY OF SHEFFIELD

The degrees of this university (M.B., Ch.B., M.D. and Ch.M., B.D.S., and M.D.S.), and the diploma of licentiate in dental surgery, are open to candidates of either sex. Candidates for a degree must have matriculated in the university or have passed such other examination as may be recognized for this purpose, and have passed the preliminary examination in chemistry and physics.

Professional Examinations

A candidate for the degrees of M.B., Ch.B. must produce certificates that he will have attained the age of 22 years by the day of graduation; that he has pursued the courses of study required by the university regulations during not less than five and a half years subsequent to the date of his matriculation or exemption from matriculation, three of such years at least having been passed in the Faculty of Medicine of the University, one at least being subsequent to the passing of the Second Examination. The following examinations must be passed in due order.

First Examination.—The subjects are chemistry, physics, and biology. Candidates who have passed the Intermediate Examination of the Faculty of Pure Science in any or all of the subjects of the First M.B. Examination will, on payment of the fee for the latter examination, be deemed to have passed it when they have passed in such subjects as they did not take for the Intermediate B.Sc. Examination. Candidates on presenting themselves for this examination are required to furnish certificates of having attended for not less than one year approved courses of instruction, after matriculation, in (i) chemistry, inorganic and organic; (ii) physics; (iii) biology; and of having passed or obtained exemption from the preliminary examination in chemistry and physics.

Second Examination.—The subjects are anatomy and physiology (Part I). Candidates must have passed the First Examination, and must have attended (1) courses on anatomy, including lectures and practical anatomy, during five terms; (2) courses on physiology, including lectures and practical physiology, during one year.

Third Examination.—The subjects are pathology and pharmacology, applied anatomy, and physiology (Part II). Candidates must have attended courses of instruction in pathology for five terms, in pharmacology for three terms,

(and one term in pharmacy), in applied anatomy for four terms, and in physiology (Part II) for six terms.

Final Examination.—The subjects are: Part I, forensic medicine, and public health; candidates must have attended courses for one term in each subject. Part II, medicine (including mental diseases, diseases of children, vaccination, special pathology with morbid anatomy and clinical pathology), and therapeutics. Part III, surgery (including the administration of anaesthetics, diseases of the ear, nose, and throat, ophthalmology, and surgical pathology), and obstetrics and gynaecology (including ante-natal and post-natal practice and infant hygiene. Candidates for Parts II and III must have completed a minimum of five and a half years of study.

M.D.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch.B. at least three years previously, must present a thesis embodying observations in some subject approved by the Professor of Medicine, and must pass an examination in the principles and practice of medicine.

Ch.M.—Candidates for the degree of Master of Surgery must have passed the examination for the degrees of M.B., Ch.B. at least three years previously, and must, since taking the degrees of M.B., Ch.B., have held for not less than twelve months a surgical appointment in a public hospital or other public institution affording full opportunity for the study of practical surgery. The subjects of examination are systematic, clinical, and operative surgery, surgical anatomy, surgical pathology, and bacteriology.

Other information concerning this university will be found in the section devoted to Provincial Medical Schools.

UNIVERSITY OF WALES

The Welsh National School of Medicine

The university grants degrees in Medicine and Surgery—Bachelor in Medicine and Bachelor in Surgery (M.B., B.Ch.), Doctor in Medicine (M.D.), and Master in Surgery (M.Ch.)—and Diplomas in Public Health (D.P.H.), and Tuberculous Diseases (T.D.D.).

M.B. and B.Ch. Degrees—Candidates are required to pursue a course of study of not less than six academic years subsequent to their matriculation in the university. They must hold an arts or science degree of the University of Wales, or of some other university approved for the purpose, but certain of the courses pursued for a B.Sc. or a B.A. degree may be counted as required for the medical degrees. The courses for the M.B., B.Ch. are divided into two sections. The first includes Physics, Chemistry, Botany, and Zoology (Preliminary Subjects); Organic Chemistry (Subsidiary Subject); Human Anatomy and Physiology (Ancillary Subjects). Study of the preliminary subjects and of Organic Chemistry must extend over at least one academic year; study of Physiology and Human Anatomy must extend over at least two academic years; the first section of the course must occupy not less than three years. The second section includes courses in Materia Medica and Pharmacology, Pathology and Bacteriology, Hygiene and Forensic Medicine, Medicine, Surgery, and Obstetrics and Gynaecology. These courses cannot be commenced until the examinations of the first section have been completed. Examinations in all subjects of the second section are held twice each year.

M.D. Degree.—Every candidate for the degree of *Doctor in Medicina* shall satisfy the examiners in an examination in clinical medicine and shall submit a thesis to the judgement of the university. A candidate may present himself for the examination in clinical medicine during or subsequently to the second year after qualification for the degrees of *Baccalaureus in Medicina* and *Baccalaureus in Chirurgia*, and may submit his thesis during or subsequently to the third year after qualification for those degrees. The thesis shall embody the results of the candidate's personal observation or original research in some branch of medical knowledge or of some science directly relative to medicine, excepting a subject that is exclusively surgical. The candidate shall indicate in what respects his thesis appears to him to advance medical knowledge or practice. A candidate shall be required to submit himself to an oral or other examination on the subject-matter of the thesis; provided always that in exceptional circumstances it shall be within the discretion of the university to exempt a candidate from such an examination.

M.Ch. Degree.—Every candidate for the degree of *Magister in Chirurgia* shall satisfy the examiners in an examination in Surgery and shall submit a thesis to the judgement of the university. A candidate may present himself for the examination in Surgery during or subsequently to the second year after qualification for the degrees of *Baccalaureus in Medicina* and *Baccalaureus in Chirurgia*, and may submit his thesis during or subsequently to the third year after qualification for those degrees. The examination in Surgery shall consist of two parts: Part I—(i) Surgical Anatomy, (ii) Bacteriology and Surgical Pathology; Part II—(i) Surgery, (ii) Clinical Surgery, (iii) Operative Surgery. No candidate shall be deemed to have passed in Part II unless he has satisfied the examiners in Part I of the examination. The thesis shall embody the results of the candidate's personal observation or original research in some branch of surgical knowledge or of some science directly relative to surgery. The candidate shall indicate in what respects his thesis appears to him to advance surgical knowledge or practice. A candidate shall be required to submit himself to an oral or other examination on the subject-matter of his thesis; provided always that in exceptional circumstances it shall be within the discretion of the university to exempt a candidate from such examination.

Clinical Institutions.—Clinical teaching is carried out in the Cardiff Royal Infirmary (489 beds); the Llandough Hospital (City of Cardiff) (345 beds); the City Lodge Hospital (City of Cardiff) (604 beds); the Cardiff City Mental Hospital (790 beds); the Cardiff City Isolation Hospital (230 beds); the Prince of Wales' Hospital (Orthopaedic) (132 beds); the Cefn Mably, Glan Ely, and Sully Hospitals (Tuberculosis) (608 beds); the Lord Pontypridd Hospital (acute Rheumatism of Children) (25 beds). These institutions are modern and well equipped, and provide facilities for both in-patient and out-patient clinical instruction. The Cardiff Royal Infirmary is the main teaching hospital. It serves a district having a population of more than half a million, and during the year 1936 6,268 patients were admitted to the wards, and 39,875 patients treated in the out-patient departments.

Scholarships, Free Studentships, Prizes, and Medals.—Entrance Scholarships, County Free Studentships, and Scholarships are available. Particulars of these are contained in a special prospectus, which can be obtained on application. An Isaac Roberts Scholarship in Science, of the value of £50 per annum, tenable for three years, is awarded triennially on the results of the Entrance Scholarship Examination of the Cardiff College. The Samuel Brothers' Scholarship, value £12 to £15, is awarded annually on the results of the work of the first year medical course at Cardiff College. The Dr. Price Prize, value £50, is awarded annually on the results of the work of the first year of the medical course at the Cardiff College. The Dr. Howell Rees Scholarship, value £17 10s., is awarded triennially, and is held in The Welsh National School of Medicine; it is awarded on the results of the examinations in anatomy and physiology. Numerous other prizes are awarded for proficiency in different subjects.

Research Scholarships.—A Catherine Buckton Scholarship of £60 for one year is offered periodically by the council of Aberdare Hall (one of the halls of residence for women students) to a woman who shall undertake to do postgraduate work. The Mrs. John Nixon Research Scholarship of £150 per annum is available for the promotion of research in Medicine and Medical Pathology. The Lord Merthyr Research Scholarship, value £200 per annum, is available for the promotion of research in cancer. A Cecil Prosser Research Scholarship, value £250 per annum, is available for the promotion of research in tuberculosis. The Ewen Maclean Research Scholarship, value £150 per annum, is available for the promotion of research into the factors which constitute and the conditions which vary resistance to disease, especially as regards midwifery. Inquiries should be addressed to the Secretary, Welsh National School of Medicine, 10, The Parade, Cardiff.

English Medical Corporations

There are in England three medical corporations which grant licences to practise—the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the Conjoint Board in England. Details concerning this body, its component Colleges, and the third licensing body here follow.

THE CONJOINT BOARD

This body—the Examining Board in England—deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study, and recommends those who pass the required examinations for the Licence and for the diploma of Member respectively. The successful candidate is then entitled to register as L.R.C.P.Lond., M.R.C.S.Eng. It performs the same task in connexion with diplomas in public health, tropical medicine and hygiene, ophthalmic medicine and surgery, psychological medicine, laryngology and otology, medical radiology, anaesthetics, and child health, jointly issued by the two Colleges. Under the present regulations every candidate for the L.R.C.P. and M.R.C.S. must (1) complete five years of professional study after passing a recognized preliminary examination and a recognized pre-medical examination in chemistry and physics; (2) comply with the regulations, which may be had from the Secretary, Examination Hall, Queen Square, London, W.C.1; and (3) pass the two professional examinations of which particulars appear below.

Regulations for the Conjoint Diplomas

The following is an outline of the present regulations for the L.R.C.P.Lond. and M.R.C.S.Eng. The full regulations and synopses and forms of certificate may be obtained from the Secretary.

PRE-MEDICAL EXAMINATION

Students are required to pass a pre-medical examination in chemistry, physics, and elementary biology, conducted by the Conjoint Examining Board, before commencing the five years' curriculum of professional study, or some other examination recognized by the Board—namely, the examination in chemistry, physics, and biology for the degree in Medicine of any university recognized by the Board, the higher school certificates of Oxford and Cambridge Universities and the Oxford and Cambridge Schools Examination Board, the higher certificates of London, Bristol, Durham Universities, the Joint Matriculation Board of the Northern Universities, or the Central Welsh Board higher certificate.

A candidate must enter for chemistry and physics together, and he will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other subject. He will be admitted to the examination on producing evidence of having passed the required preliminary examination in general education.

The examination is partly written, partly oral, and partly practical. A candidate rejected in one or both subjects of the examination will not be admitted to re-examination until after the lapse of a period of not less than three months. Not more than two terms of professional study is recognized before the examination in elementary biology is passed.

PROFESSIONAL EXAMINATIONS

There are two professional examinations, called the First and Final Examinations. The courses of study for the First Examination may be commenced before the pre-medical examination in biology or some equivalent examination has been passed provided three terms of study of anatomy and physiology are completed after passing such examination.

First Professional Examination.—The subjects of this are: Section I, (*a*) Anatomy, including histology and embryology; (*b*) Physiology, including biochemistry. Section II, Pharmacology and materia medica. A candidate must have attended at a recognized Medical School courses of instruction in anatomy, including embryology, during five terms, in the course of which he must have dissected the whole body; courses of instruction in physiology, including biochemistry and biophysics, during five terms; courses of instruction in pharmacology and materia medica. A candidate may present himself for the two sections together or separately, but he must take parts (*a*) and (*b*) of Section I together until he has passed in one or both parts, but a candidate will not be allowed to pass in one part unless he obtains at the same time at least half the number of marks required to pass in the other part. Section II of the examination may be passed at any time before the candidate enters for the Final Professional Examination, provided that the courses for admission to Section I have been completed. A candidate who produces satisfactory evidence of having passed an examination in the subjects of Section I or either part of Section I and of Section II in the examination for the degree in Medicine conducted at a university recognized by the Board will be exempted from further examination in such subject or subjects.

Final Professional Examination.—The subjects of this are: Section I, Pathology (including morbid anatomy, morbid histology, and clinical pathology) and Bacteriology. Section II, Part I, Medicine, including medical anatomy, forensic medicine, and public health; Part II, Surgery, including surgical anatomy and the use of surgical appliances; Part III, Midwifery and gynaecology. The examination is partly written, partly practical, partly clinical, and partly oral. A candidate may take Sections I and II and the three parts of Section II of the Final Examination separately, or may take the whole examination together. He will be required to produce the certificates prescribed by the regulations before being admitted to the respective parts of the examination. No exemption is granted from any subject in the Final Examination.

FEES

The fee for the *Pre-Medical Examination* is four guineas, for re-examination in Chemistry two guineas, for re-examination in Physics one guinea, and for Biology one guinea. The fee for the *First Professional Examination* is ten guineas, for re-examination after rejection in Section I six guineas, for re-examination after rejection in either part of Section I three guineas, for re-examination after rejection in Section II three guineas. The fee for admission to Section I of the *Final Professional Examination* is four guineas; for admission to Section II, Part I, ten guineas; Part II, ten guineas; Part III, six guineas; and the re-examination fees are respectively three guineas, six guineas, six guineas, and five guineas.

Royal College of Physicians of London

This College has three grades—its Licentiates, its Members, and its Fellows. The Licence is now only issued through the Conjoint Board. The Membership (examinations for which are held in January, April, July, and October) is only granted to those who have obtained the Licence or to those who are graduates of a recognized university; in any case they must be persons over 23 years of age. Candidates are examined in pathology and the practice of physic, partly in writing and partly viva voce; they are also examined in French and German. The languages are not compulsory, but credit is given to those who show a knowledge of them. The fee for the Membership is £42, or in the case of a Licentiate £21. There is a fee of £10 10s., payable before entrance to the examination, which in the case of successful candidates is reckoned as part of the Membership fee. The body of Fellows is maintained by election from among the Members.

Royal College of Surgeons of England

This College conducts examinations for the Membership and for the Fellowship. The Members are admitted as stated in the section dealing with the Conjoint Board. The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations for the Fellowship—the Primary in anatomy and physiology, held in the months of June and December, which may be passed after the third winter session; the Final held in the months of May and November, chiefly directed to surgery, which may be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of graduates in medicine and surgery of not less than four years' standing of universities recognized by the College for the purpose. All candidates are required to have held for six consecutive months a responsible post in charge of general surgical patients

in the wards of a general hospital recognized by the Council.

Fees.—At First Examination, £8 8s. (for re-examination, £5 5s.). At Second Examination, £15 15s: Admission fee £10 10s. for members, £31 10s. for non-members.

Society of Apothecaries of London

This Society confers a registrable diploma in medicine, surgery, and midwifery (Licentiate in Medicine and Surgery of the Society of Apothecaries, L.M.S.S.A.), on those successful at the following examinations:

Pre-medical Examination.—Chemistry and physics, and elementary biology.

Primary Examination.—This includes anatomy, physiology and histology, written, oral, and practical, and materia medica and pharmacy, written and oral. Candidates referred in anatomy or physiology will be required to produce evidence of further study before being admitted to re-examination. Candidates will be excused any or all the subjects of the Pre-Medical and Primary Examination on producing evidence that they have passed the equivalent examinations before an examining body recognized by the Society.

Final Examination.—This is divided into three sections, which may be taken at separate examinations—namely, A, B + D, and C. A, Principles and practice of surgery, including surgical pathology, surgical anatomy, operative manipulation, instruments and appliances; B, Principles and practice of medicine, including therapeutics, pharmacology, and prescriptions), general and medical pathology, bacteriology, and morbid histology; C, Midwifery, gynaecology, diseases of newborn children, obstetric instruments and appliances; D, Forensic medicine, hygiene, theory and practice of vaccination, and mental diseases. A, B, and C are written, oral, and clinical. D is written and oral. There is no exemption from any subject of the Final Examination. Candidates referred in A, B, or C will be required to produce evidence of further study before re-examination.

The fee for the Pre-medical Examination is £5 5s.; for the Primary and Final, £21, payable in two instalments. The regulations and synopses relating to the several examinations, and other information, may be obtained from the Registrar, The Society of Apothecaries, Water Lane, Queen Victoria Street, E.C.4. (telephone Central 1189).

MASTERY OF MIDWIFERY

The Society in 1928 instituted a Mastery in Midwifery, and issues a diploma under this title denoting the possession of specialized knowledge of ante-natal care, midwifery, and infant welfare, and the public health aspects of these subjects. The examinations take place in May and November, and candidates are required to submit certificates, etc., twenty-one days before date of examination. A severe test has been imposed so as to ensure a high standard of professional knowledge, but the diploma is not registrable under the Medical Acts. Admission is open to all who have been for not less than three years in possession of a registrable medical qualification, and who have had certain prescribed experience at recognized institutions concerned with obstetrics, ante-natal work, and infant welfare work. Medical officers employed by a public health authority, and having special duties connected with maternity and child welfare, are admitted to the examination on production of evidence to that effect. The entrance fee for the examination is £10 10s., and a further fee of £10 10s. is payable by successful candidates before admission to the Mastery. Copies of the regulations may be obtained from the Registrar at the address given in the preceding paragraph.

British College of Obstetricians and Gynaecologists

One of the principal objects of the College is to encourage the study and practice of obstetrics and gynaecology, subjects which should be inseparably interwoven. The College consists of Fellows and Members.

Candidates for the Membership must have been entered on the British *Medical Register* for at least three years or be eligible for entry thereon. Before being accepted for the examination they must produce evidence, satisfactory to the examination committee, of having held resident hospital appointments in general medicine or surgery and in obstetrics and gynaecology for the period laid down in the regulations (at present six months each). The examination consists of the presentation of case records and commentaries, two written papers, and an oral and clinical examination. The Fellowship is granted to those Members who are judged to have advanced the science and art of obstetrics and gynaecology.

The Fellowship and Membership include practically every teacher of obstetrics and gynaecology in Great Britain and the British Dominions. Fellowship or Membership is now a necessary qualification for election to the staff of many obstetric and gynaecological hospitals, and it is anticipated that in time it will be essential for election to the staff of all such hospitals; consequently all intending to specialize in obstetrics and gynaecology should endeavour to obtain the Membership as soon as possible.

For those practitioners who have had special post-graduate experience in obstetrics, but whose experience and work do not allow of their admission to the Membership, the College grants a diploma (D.C.O.G.). Candidates for it must be entered on the British *Medical Register*. They must produce evidence of resident post-graduate experience in obstetrics as well as in general medicine or surgery. Evidence of having regularly attended at ante-natal, post-natal, and infant welfare clinics and a satisfactory course in gynaecology is also required.

The D.C.O.G. is intended to indicate that the holder is a competent obstetrician and one who may be regarded as sufficiently capable to act in the capacity of consultant to local authorities in midwifery practice. The examination does not, however, include gynaecology except in so far as it is directly associated with child-bearing, and this diploma is not meant for those who aspire to hospital appointments with charge of gynaecological beds.

The regulations governing the Membership and diploma may be obtained from the honorary secretary, British College of Obstetricians and Gynaecologists, 58, Queen Anne Street, London, W.1.

SCOTLAND

THE UNIVERSITIES

There are in Scotland four universities, each possessing a Faculty of Medicine, and having the right to confer degrees which admit the holder to the *Medical Register*. In essential points the regulations in their medical faculties for undergraduates are much alike, so that a general account can be given of all of them together.

The universities are those of St. Andrews, Glasgow, Aberdeen, and Edinburgh. The provision each of the cities in which these universities are situated makes for the education of medical students will be found in the section on Medical Schools in Scotland; here it need merely be said that degrees in medicine from Scotland as a whole have always enjoyed a high repute.

The degrees granted in medicine and surgery to candidates of either sex are four in number—Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.). The two former are not obtainable one apart from the other. Besides these degrees a diploma in tropical medicine and hygiene is obtainable from the University of Edinburgh, as also diplomas in psychiatry and medical radiology. As for public health, registrable degrees and diplomas in this subject are granted by the University of Glasgow, while diplomas in public health may be obtained from the Universities of Edinburgh, St. Andrews, and Aberdeen.

The conditions for admission of graduating students of medicine are the same as those in the Faculties of Arts or Science. Prospective medical students are also required

to pass a pre-registration examination in chemistry and physics. This is not enforced at Aberdeen or at St. Andrews.

Professional Education

The regulations comply in all respects with the requirements and recommendations of the General Medical Council. In respect of the various courses certificates must be obtained showing that the student has not only attended regularly, but has duly performed the work of the class. Out of the necessary five years of medical study not less than three (or in certain circumstances two) must be spent at the university whose degrees the student hopes to obtain, and the balance at any place officially recognized for such purpose. In each academic year there are two sessions—one lasting from the beginning of October to the middle of March, and the other from the middle of April to the beginning of July.

Professional Examinations

The distinctive feature of the Scottish curriculum is that though nominally there are only four examinations, each of these may be, and habitually is, split up by the student into sections. Hence, a student may complete some stage of his career during the course of nearly every session. Thus, by the end of the first winter session the student may pass in zoology* and chemistry.† At the end of the first summer session he can finish with botany* and physics,† and with anatomy and physiology at the end of the second. Pathology and materia medica he may pass at the end of the third year, and so on, until the final examination in midwifery, surgery, and medicine, and the corresponding clinical subjects, at the end of the fifth year of study. At each examination the candidate may pass "with much distinction" or "with distinction"—"with merit" in St. Andrews—and a record is kept of the merit displayed, so that when the time comes for the candidate to graduate, one who has done well throughout can be declared as graduating with honours. (In Glasgow and in Edinburgh a candidate may pass "with distinction," but there is no higher grade of "much distinction.") A further point in the system is that the student's own teachers commonly take some part in his examination.

Of the four examinations, the first deals with physics, botany, zoology, and chemistry (inorganic and organic); the second with anatomy and physiology; the third with materia medica, therapeutics, pathology, and bacteriology; the fourth with forensic medicine, public health, medicine, surgery, midwifery, and gynaecology. At Edinburgh the first two examinations are held three times a year, except in chemistry and zoology, in which subjects examinations are held only twice a year. At St. Andrews all four examinations are held twice a year, and at Glasgow the first two are held twice a year and the third three times. At Aberdeen, degree examinations in all subjects are held twice a year.

Exemption from the first professional examination may be obtained by candidates who have passed an arts, science, or medical degree examination in its subjects at any recognized university.‡

The Higher Degrees

It is open to those who are already M.B., Ch.B. to proceed either to the M.D. or the Ch.M. A candidate for the former must have been engaged for not less than one year in work in the medical wards of a hospital, or in scientific research in a recognized laboratory, or in the Naval or Military Medical Service, or have been at least two years in general practice, and must be at least 24 years of age. A thesis on any subject not exclusively surgical must be submitted, and the candidate is also examined in clinical medicine and, if desired (or, in the case of Glasgow, St. Andrews, and Aberdeen), in some one or other of its special departments. The regulations for candidates for the Ch.M. are of a corresponding character, a period of surgical work in a hospital or elsewhere being substituted for medical work, and the thesis being on a surgical rather than a medical subject. An examination in surgical anatomy, clinical surgery, operative surgery, and in some of the special departments of surgery, is included.

FEES

It is estimated that the class, examination, and other fees for the M.B., Ch.B. come altogether to about £265, the separate examination fees included in this calculation being as follows:

	£ s. d.
First Professional	9 9 0
Second Professional	7 7 0
Third Professional	6 6 0
Final	11 11 0

(At Glasgow the fees are respectively nine, nine, eight, and seven guineas; at St. Andrews nine, six, nine, nine respectively.)

Re-entry in any subject in which the candidate has failed entails a fresh payment of £1 1s. Candidates for the M.D. and Ch.M. pay £21, and on re-entry £5 5s.

More detailed information with regard to the University of Edinburgh can be obtained from the *Medical Programme*, price 6d. (by post 7½d.), which is published by Mr. Thin, 55, South Bridge, Edinburgh, or on application to the Dean of the Faculty of Medicine. Information about Glasgow should be sought from the Registrar, the University, Glasgow. With regard to Aberdeen, application should be made to the Secretary of the University of Aberdeen. In respect of St. Andrews, information can be obtained either from the Secretary of the University, or, alternatively, the Secretary of the United College, St. Andrews, or the Secretary of University College, Dundee, these being the two constituent colleges of the University of St. Andrews.

Finally, it should be mentioned that in connexion with all the Scottish universities there are valuable bursaries and scholarships, some information as to which will be found in the article on Medical Schools.

The Carnegie Trust

The following is a summary of the regulations made by the Carnegie Trust for the Universities of Scotland for assistance in the payment of class fees in the universities and extra-mural colleges of Scotland.

Applicants must be over 16 years of age; they must be of Scottish birth or extraction, or have attended for two years, after the age of 14, at a school or institution under inspection of the Scottish Education Department. Applicants so qualified who have been pupils of schools under the Scottish Education Department will be eligible for assistance in the payment of class fees if they have obtained the leaving certificate of the Department with a minimum of three higher grade passes, provided that it bears evidence of such preliminary education as is required by the universities for their graduating curricula, or that it has been supplemented by such passes either in the Scottish Universities Preliminary or other examination as will satisfy the above requirement of the universities before they begin their graduating curricula. Where applicants have not been pupils of schools under the Scottish Education Department, or where other good ground for not having obtained the leaving certificate can be shown, the Executive Committee has power to accept instead what it deems equivalent evidence of attainments provided that applicants will not be considered eligible who have not obtained three higher grade passes or who require to pass any further preliminary examination before they begin their graduating curricula. No applicant in medicine is eligible for assistance until pre-registration subjects have been passed at any centre where pre-registration examinations are required.

Applicants in the Faculties of Arts and Science must have had their course of study for each academic year approved by the University Adviser of Studies, and all applicants must have passed the graduation examinations belonging to the

* At St. Andrews University botany and zoology may be taken at the end of the first winter term, physics and chemistry at the end of the first year.

† In the case of Glasgow these subjects—chemistry and physics—are transposed.

‡ This does not apply to the University of Aberdeen, where the course in physics includes special instruction on the medical aspects of the subject. Accordingly every student, irrespective of whether he holds an arts or science pass in physics, must take medical physics.

previous stage of their curriculum before becoming eligible for assistance in the payment of fees of classes belonging to a further stage. Beneficiaries must submit to the Executive Committee at the end of each session particulars as to their attendance and work, any distinctions gained, and any graduation examination passed.

The annual allowance towards payment of class fees offered to beneficiaries by the Trust in the Faculty of Medicine is £20 for four years, in all £80. Any unexpended part of a grant will be carried forward to the succeeding year. In combinations of Faculties the allowances available for beneficiaries are: Arts and Medicine—two Arts grants of £9 and four Medicine grants of £20, in all £98; Science and Medicine—two Science grants of £18 and four Medicine grants of £20, in all £116.

Applicants, in writing for application forms (Carnegie Trust, Merchants' Hall, 22, Hanover Street, Edinburgh), must name the university and faculty in which they intend to study, and state whether they have previously obtained the benefits of the Trust. Fully completed application forms must be lodged by new beneficiaries not later than October 20 for the winter session, and by former beneficiaries not later than October 25. Applications for the summer session must be lodged not later than May 10. Payments are made by means of fee coupons, and fees already paid are not refunded.

THE SCOTTISH CORPORATIONS

There are three medical corporations in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Their licences can be separately obtained only by persons who are already in possession of a recognized qualification—in surgery in the case of the College of Physicians, and in medicine in the case of the College of Surgeons and the Faculty of Physicians and Surgeons of Glasgow. All others must submit to the examinations held by the Conjoint Board, which the three corporations have combined to form. Details concerning this Board and its component Colleges follow. The conditions on which their higher qualifications are granted will be found set forth separately in connexion with each corporation.

The Conjoint Board in Scotland

This body has charge of all questions connected with candidates for the Conjoint Licences of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Those finally approved by it are entitled to registration and to the initials denoting the Licences of the three bodies concerned—namely, L.R.C.P.Ed., L.R.C.S.Ed., and L.R.F.P.S.Glas. The Board requires all candidates to comply with the regulations of the General Medical Council. It has an arts examination of its own, but is prepared to accept in its place any of the other educational tests approved by the General Medical Council. All candidates must obtain registration with the General Medical Council.

PROFESSIONAL CURRICULUM FOR CANDIDATES REGISTERED AS MEDICAL STUDENTS AFTER OCTOBER 1, 1930

Subsequent to registration as a medical student the candidate must pass not less than five years in medical study, each comprising a winter and a summer session. The Board does not insist that candidates shall pursue their study at any particular place, and is prepared to accept certificates of having attended the necessary courses from any recognized medical school.

Its examinations are four in number, each of them being held four times every year, and these will fall to be held twice in Edinburgh and twice in Glasgow during the next period; it is open to candidates to present themselves for examination at either place. The First Examination deals with general biology (systematic and practical), and physics and chemistry (systematic and practical); the second with anatomy, embryology, physiology, biochemistry, and biophysics; the third with pathology (including bacteriology and morbid anatomy) and pharmacology (theoretical and practical); and the final with (1) medicine, including therapeutics, applied anatomy and physiology, and clinical pathology, with practical medicine; (2) surgery, including applied anatomy and physiology, clinical pathology, and practical surgery; (3) midwifery and diseases of women, clinical obstetrics and gynaecology, with practical midwifery; and (4) medical jurisprudence and public health. All candidates for the Final Examination must complete portions (1), (2), and (3), which must be taken together, within a period of nineteen months.

These examinations must be passed in due order, and before admission to any of them the candidate must supply certificates showing that he has completed the due periods of study of their subjects. He can present himself in any single subject of the first three examinations. As regards the Final Examination, a candidate can present himself in medical jurisprudence and hygiene at any time after completion of the Third Examination and of his study of these subjects; but in medicine, surgery, and midwifery he cannot present himself until the completion of five years' study, and he must take them all simultaneously. A candidate who takes up several subjects of an examination or the whole of the subjects at one time, but fails in some of them, is credited at the next examination with those subjects in which he has been approved.

Part or entire exemption from the first three examinations may be granted to those who have already passed before other bodies examinations deemed by the Board equivalent to its own, but all candidates for the Conjoint Licence must sit for the Final Examination, and at no examination can a candidate present himself within three months of his rejection by some other licensing body.

FEES

It is estimated that the total cost of lectures and fees for the Conjoint Licence is about £170. The separate examination fees are as follows: First, Second, and Third Professional, £5 each; Final, £15. On re-entry for any of the first three examinations £3, and on re-entry for the Final, £5. If the re-entry is only in one or two subjects of the First, Second, or Third Examination the fees are smaller.

Information concerning this Board should be sought either from Mr. David Thomson, Solicitor, 18, Nicolson Street, Edinburgh, or from Mr. David Willox, Faculty Hall, 242, St. Vincent Street, Glasgow.

Royal College of Physicians of Edinburgh

This College has three grades—Licentiateship, Membership, and Fellowship—all of which are open to men and women. The regulations applying to candidates for the Licentiateship have already been generally indicated. If desirous of receiving it apart from those of the other two corporations, they must be duly registered medical practitioners. Candidates will be required to pass an examination corresponding to the medical part of the final examination of the Conjoint Board, and conditioned in the same way, and also an examination in materia medica. The fee for examination is 15 guineas, a special examination being obtainable on due cause being shown, and on payment of 5 guineas extra. Ordinary examinations take place monthly on the first Wednesday and Thursday, except in September and October.

Candidates for the Membership must be either Licentiates of a British or Irish College of Physicians, or alternatively graduates of medicine of a university approved by the Council, and in either case not less than 24 years of age. Candidates are examined in medicine and therapeutics, also on one or more departments of medicine specially professed, and approved by the Council, in which a high standard of proficiency will be expected. The fee to be paid by a candidate for the Membership is £36 15s. The examination is held quarterly, on the second Tuesday and following days of the months of January, April, July, and October, and application for admission to it must be made a month previous to the date at which it is proposed to appear.

For the Fellowship the candidate must have been a Member of the College for at least three years, and if accepted, pay fees, including £25 stamp duty, amounting altogether to £64 18s. Further details can be obtained on application to the Secretary of the College.

Royal College of Surgeons of Edinburgh

This College has two grades—its Licence and its Fellowship. Licentiates may be of either sex, and for the Fellowship women are eligible also.

Licence

As an original qualification the Licence is only granted after fulfilment of the regulations of the Scottish Conjoint Board, but as an additional qualification it can be obtained by those already possessed of a registrable or equivalent qualification in medicine. In this case the candidate has to pass a written, oral, and clinical examination in surgery and surgical anatomy, and may be asked to operate on the dead body.

The fee is £15 15s., of which £10 10s. is returned to unsuccessful candidates.

Fellowship

Candidates for the Fellowship must be not less than 25 years of age, and have been in the practice or study of their profession subsequent to qualification for at least two years, and must hold either a surgical degree from a university recognized for that purpose by the College, or a registrable diploma obtained as the result of an examination which includes surgery as well as medicine and midwifery. Candidates are examined in (*a*) the principles and practice of surgery, including surgical anatomy, (*b*) clinical surgery, and (*c*) one optional subject, which they may choose from among the following: surgical pathology and operative surgery, ophthalmology, laryngology, otology and rhinology, gynaecology, obstetric surgery, anatomy, and dental surgery and pathology. The examination is written, oral, and clinical or practical. A candidate who desires to be examined must give one month's notice. After having passed the examination he must lodge with the Clerk to the College a petition asking that his name be placed before the College for election as a Fellow. This petition must be signed by two Fellows, as proposer and seconder, who should be sufficiently acquainted with the candidate to vouch that he is in every way a suitable candidate for the Fellowship. Examinations are held four times a year—January, March, July, and September. It is desirable that either the proposer or the seconder should be resident in Edinburgh. Candidates are not allowed to appear more than three times at the examinations unless by express permission of the President's Council.

The admission fee is £20, and after passing the examination the candidate shall pay the sum of £30 to the College funds. In the case of Licentiates of the College £10 thereof shall be remitted in consideration of the fees they have already paid. For further information application should be made to the Clerk of the College, Mr. David Thomson, Solicitor, Surgeons' Hall, 18, Nicolson Street, Edinburgh, from whom a copy of the *Laws Relating to the Fellowship by Examination* may be obtained.

Royal Faculty of Physicians and Surgeons of Glasgow

The Royal Faculty of Physicians and Surgeons grants, after examination, a Fellowship which is registrable by the General Medical Council as an additional qualification. For the Fellowship *qua* physician or the Fellowship *qua* surgeon, the candidate must pass in medicine or surgery as the primary subject and an additional subject cognate with medicine or surgery respectively must also be taken at the same examination. Candidates are required to be approved by the Council before admission to the examination. Successful candidates are later balloted for election by the Faculty and, if elected, are duly admitted *qua* physician or *qua* surgeon. The fee for admission to the Fellowship is £50, or for Licentiates of the Faculty, £40. Examinations are held quarterly.

The Faculty grants, after examination, a single licence. Candidates for admission to the examination for the single licence must produce satisfactory evidence that they are in possession of a medical qualification registrable in the British *Medical Register*.

The regulations respecting the Fellowship together with the dates of the Examinations may be obtained on application to the Secretary, Royal Faculty of Physicians and Surgeons, 242, St. Vincent Street, Glasgow, C.2.

IRELAND

MEDICAL REGISTRATION IN THE IRISH FREE STATE

The Medical Practitioners Act, 1927 (Irish Free State), provides for the establishment of a Medical Registration Council for the Irish Free State. The main functions of the Council are (1) to keep a register of medical practitioners who may desire to practise permanently or temporarily in the Irish Free State, and (2) to exercise disciplinary power with regard to all medical practitioners who are on the *Register* and engaged in practice in the Irish Free State. The first schedule of the Act contains the agreement between Great Britain, the Irish Free State, and Northern Ireland. This agreement provides for the nomination of a member of the General Medical Council, formerly made for Ireland by His Majesty on the advice of the Privy Council, to be made henceforth by His Majesty in Council on the recommendation of the Governor of Northern Ireland. The nominations of members of the General Medical Council by universities and medical corporations in Ireland and the election of a member of the General Medical Council by registered medical practitioners in Ireland will be in all respects the same as heretofore. The constitution of the General Medical Council and of the several Branch Councils as formerly existing under the Medical Acts, and the powers of holding qualifying examinations and granting diplomas for the purpose of registration in the general *Register* formerly vested in certain universities and medical corporations in Ireland, are not affected by the establishment of the Irish Free State or of Northern Ireland, and for the purpose of the preparation and keeping of the general *Register* the General Medical Council and the Branch Council for Ireland have the same powers and jurisdictions under the Medical Acts as they exercised formerly. The agreement provides also that any person who is or shall be registered in the general *Register* shall be entitled on the payment of a prescribed fee to be registered in the *Irish Free State Register*, but this fee is not payable by any person who, on the date of the establishment of the *Irish Free State Medical Register*, is registered on the general *Register*. Then follow provisions with regard to the erasure from the *Register* of the name of a person on account of misconduct.

The *Irish Free State Medical Register* was established on May 26, 1928, this being the date appointed by the Medical Registration Council. The *Register* on establishment contained the name of every medical practitioner who was registered in the general *Medical Register* immediately before May 26, 1928, and who either was then resident in the Free State, according to his address as stated in the general *Register*, or was living outside the Free State and applied to the Council within one month before May 26, 1928, to be registered. No fee for registration was charged in such cases.

For registration in the *Irish Free State Medical Register* subsequent to its establishment a fee is required, together with a prescribed form of application. A person is eligible for registration if he is at the time of application registered in the general *Medical Register*, or if he possesses the requisite qualifying diploma granted by the colleges or bodies in the Free State as set out in the Act. Candidates for medical appointments made under the Appointments Commission must be registered in the *Irish Free State*

Medical Register. Application for further information may be made to the Registrar, Medical Registration Council, Room 35, Upper Fitzwilliam Street, Dublin.

THE IRISH UNIVERSITIES

There are three universities in Ireland, each with a medical faculty. These are, in the Irish Free State, the University of Dublin (usually known as Trinity College, Dublin), and the National University of Ireland; and, in Northern Ireland, the Queen's University of Belfast.

UNIVERSITY OF DUBLIN: TRINITY COLLEGE

This university grants two degrees in medicine (M.B. and M.D.), two in surgery (B.Ch. and M.Ch.), two in midwifery (B.A.O. and M.A.O.), and a postgraduate diploma in public health. It also grants postgraduate diplomas in gynaecology and obstetrics, for which nine months' study is required, and in psychological medicine, for which twelve months' study is required. The degrees are granted to those who, having passed the professional examination, have also graduated in arts.

Professional Examinations

A candidate for the Final Examination for the M.B., B.Ch., and B.A.O. degrees must be a matriculated student of at least five years' standing. The examinations which students must pass are the Preliminary Scientific, the Intermediate Medical, and the Final. Before admission to any of these examinations students must have completed the courses of study in the subjects involved.

Preliminary Scientific.—This covers (*a*) chemistry, (*b*) physics, (*c*) botany and zoology. The three divisions may be taken together or at different times.

Intermediate Medical.—This is divided into two parts: (*a*) anatomy, physiology, and histology; (*b*) applied anatomy and applied (clinical) physiology. The two parts may be taken separately or together.

Final Examination.—Part I: Pathology and bacteriology, materia medica and therapeutics. Part II: (*a*) Midwifery and gynaecology; (*b*) medicine, mental diseases, medical jurisprudence and hygiene; (*c*) surgery in all branches, including clinical ophthalmology. The three sections of Part II may be taken separately or together. In either case the full curriculum must have been completed, and the Final Examination cannot be completed before the end of the fifth year.

M.D.—The candidate must have passed all the qualifying examinations in medicine, surgery, and midwifery, and have taken, or have been qualified to take, the degree of B.A. three years previously. He must send in a thesis for approval. Subsequently the Regius Professor of Physic and an assessor will discuss with him questions connected with the thesis, and also examine him viva voce in general medicine.

M.Ch.—The candidate must be a B.Ch. of not less than three years' standing and must produce satisfactory evidence of having been engaged in practice for two years.

M.A.O.—The candidate must be a B.A.O. of not less than two years' standing and must produce satisfactory evidence of having been engaged for two years in the study or practice of obstetric science. The examination is specially directed to obstetrics and practical gynaecology.

Further information regarding courses of instruction, etc., may be obtained from the Registrar of the School of Physic, Trinity College, Dublin.

QUEEN'S UNIVERSITY, BELFAST

The degrees granted by the Medical Faculty of this University are as follows: Bachelor of Medicine (M.B.), Bachelor of Surgery (B.Ch.), Bachelor of Obstetrics (B.A.O.), Doctor of Medicine (M.D.), Master of Surgery (M.Ch.), Master of Obstetrics (M.A.O.). The university also confers a diploma in public health and a diploma in psychological medicine. The first three degrees mentioned serve as a qualification for admission to the *Medical Register*, and are not granted separately. In addition to matriculating and passing his professional examinations, a candidate for these degrees must have passed three of the regulation five years as a student at the Belfast School of Medicine. Degrees in dental surgery (B.D.S. and M.D.S.) are conferred by the university, and also a diploma in dental surgery (L.D.S.).

Professional Examinations

The examinations for the M.B., B.Ch., B.A.O. are four in number. The first deals with: (1) inorganic, organic, and practical chemistry, (2) experimental and practical physics, (3) botany and practical botany, (4) zoology and practical zoology. It is divided into two parts, of which botany and zoology form one. The Second Examination covers anatomy and physiology (both theoretical and practical), and may be taken at the end of the second year of the student's career. The Third Examination includes: (1) pathology, bacteriology, and practical pathology and practical bacteriology, (2) materia medica, pharmacology and therapeutics, (3) medical jurisprudence, and (4) hygiene. Candidates who have passed the Second Examination may present themselves for Part I of the Third (Nos. 1 and 2) at the close of the third year, and for Part II (Nos. 3 and 4) at the end of the winter session of the fourth year.

The Final Examination includes: (1) medicine, (2) surgery, (3) midwifery, (4) ophthalmology and otology. The student must pass in all subjects at once at the end of his fifth year. No certificate in regard to the study of the subjects of this examination will be valid unless the work was done subsequent to passing in all the subjects of the Second Examination.

The Higher Degrees

Candidates for the degree of Doctor of Medicine must be graduates in medicine of at least three years' standing, unless they hold also a degree of the university in arts or science, in which case a standing of two academic years will suffice. Moreover, candidates must be able to show that the interval has been passed in the pursuit of such courses of study or practical work as may be prescribed. The degree may be conferred either (*a*) after a formal examination, or (*b*) in recognition of the merits of a thesis or of some piece of original study or research carried out by the candidate, followed by an oral or other examination in its subject. When an ordinary examination is imposed it will include (1) a written paper on the principles and practice of medicine, (2) a commentary on a selected clinical case, (3) a clinical and viva voce examination, and (4) a written paper and clinical or practical and viva voce examination on a subject chosen from the following list: (*a*) human anatomy, including embryology; (*b*) physiology, (*c*) pathology, (*d*) pharmacology and therapeutics, (*e*) sanitary science and public health, (*f*) forensic medicine and toxicology, (*g*) mental diseases, (*h*) infant hygiene and diseases of children, (*i*) midwifery and infant hygiene. The regulations for the degrees of M.Ch. and M.A.O. are of the same general nature.

NATIONAL UNIVERSITY OF IRELAND

The National University of Ireland carries on most of its medical educational work through three constituent colleges—University College, Dublin; University College, Cork; and University College, Galway. Each of these provides a full medical curriculum, and all candidates for the medical degrees of the university must pass three of their five years of study at one or other of them. These years do not count except after matriculation in the Medical Faculty. The candidates at each constituent college are examined by the university, and a common standard of education is secured by all courses of instruction and the regulations concerning them having to be approved by the Senate, after considering report thereon from the General Board of Studies of the university. In addition to the ordinary degrees in Medicine and Surgery the university grants those of Bachelor and Master of Obstetrics, Bachelor and Doctor of Science in Public Health, and Bachelor and Master in Dental Surgery, as well as Diplomas in Public Health and in Psychological Medicine.

Application for other information may be made to the Registrar, National University of Ireland, 49, Merrion Square, Dublin, C.17.

THE IRISH CORPORATIONS

There are, in the Irish Free State, three licensing bodies other than the Medical Faculties of the universities; and in Dublin, just as in London, there is a Royal College of Physicians of Ireland, a Royal College of Surgeons in Ireland, and an Apothecaries' Hall. In Dublin, as in London and in Edinburgh, the two Colleges have formed an examining Conjoint Board, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall of Ireland, like the Apothecaries' Society of London, gives its licence separately.

THE CONJOINT BOARD IN IRELAND

This body requires of candidates either the passage of its own preliminary examination in the subject of general education or proof that the candidate has passed one of the tests accepted by the General Medical Council as well as passing in the pre-registration examinations in chemistry and physics and biology.

Professional Examinations

There are three professional examinations, the first of which cannot be passed earlier than the end of the second winter session, nor the final before the conclusion of full five years of medical study. Before being admitted to any of them the candidate must show that he has studied the different subjects in practice and theory for the requisite periods, certificates to this effect being accepted from the authorities of most of the recognized medical schools at home and abroad. The First Examination deals with Part I—(*a*) biology, (*b*) applied chemistry and physics. Part II—anatomy, including embryology; physiology, including physiological chemistry and histology. The Second Examination deals with (*a*) pathology, including morbid anatomy, clinical pathology, and bacteriology; (*b*) materia medica, pharmacy, and therapeutics; (*c*) forensic medicine, hygiene, and public health; (*d*) ophthalmology and aural surgery; and may be taken separately.

Final Examination.—This is divided into three divisions, which cannot be completed until at least five years have passed in medical studies other than those for the pre-registration examinations, and five years at least since the beginning of the curriculum. The divisions are: (*a*) medicine, including fevers, mental diseases, and diseases of children; (*b*) surgery, including operative surgery; (c) midwifery, including diseases of women and newborn children, and the theory and practice of vaccination.

Fees.—Preliminary Examination, £2 2s. Re-examination, £2 2s. Pre-Registration Examination, £3 3s. Re-examination in Chemistry, £2 2s.; in Physics, £1 1s. First Professional Examination—Part I, £17 17s.; Part II, £10 10s.; Second, £9 9s.; Final, £6 6s. Re-examination fee is £2 2s. for each division.

Further information can be obtained from Mr. Alfred Miller, Secretary of the Committee of Management, Royal College of Surgeons, St. Stephen's Green, Dublin.

Royal College of Physicians of Ireland

Those whose names already appear on the *Medical Register* of the General Medical Council or of Saorstat Eireann can obtain the separate Licence in Medicine of this College and its Licence in Midwifery. In either case an examination has to be passed in the subjects indicated, questions on midwifery, hygiene, and jurisprudence being included in the examination for the Licence in Medicine. For the Licence in Midwifery practitioners of over five years' standing are exempted from examination by printed questions. The other grades of the College are Members and Fellows. The former are admitted after an examination which is open to graduates in medicine of recognized universities whose names are on the *Medical Register* of the United Kingdom or the Irish Free State, and Licentiates in medicine of the Royal Colleges of Physicians. The examination deals with the general subjects of medicine. Fellows are selected, by vote, from among the Members of the College.

Fees.—For the Licence in Medicine, 15 guineas; Special Examination, £21. For the Licence in Midwifery, 8 guineas; Special Examination, 16 guineas. For the Membership, 20 guineas to a Licentiate of the College, 35 guineas to others; a special examination costs 10 guineas extra. The Fellowship, £35, in addition to stamp duty, £25.

Information as to special examinations and other matters can be obtained from the Registrar, the Royal College of Physicians, Kildare Street, Dublin.

Royal College of Surgeons in Ireland

This body, besides granting a Licence in Surgery, admits those possessed of registrable surgical qualifications to its Fellowship under certain conditions. Its Licence is usually granted conjointly with that of the Royal College of Physicians, but it is given separately to holders of a registrable qualification in medicine provided the College is satisfied that adequate courses of study have been pursued, and provided its own provisional examination is passed. This examination is held on its behalf by the Conjoint Board, and is identical with the ordinary surgical portion of the examinations imposed by that body.

The Fellowship.—Candidates for the Fellowship must pass two examinations, of which the first is in anatomy (including dissections), physiology, and histology; and the second in surgery (including surgical anatomy) and pathology. Both examinations are partly written, partly practical, and partly viva voce; while the Final Examination includes the performance of operations. All subjects of either examination must be passed at one time, and in neither can a candidate be admitted who has been rejected in any of its subjects by any other licensing body within three months. Candidates are not admitted to the Primary Examination except on evidence that they have already passed an examination in anatomy, physiology, and histology, held by some university or other body whose degrees or licences entitle the holder to admission to the *Medical Register*; if, however, the candidate's name is on the Colonial or Foreign List in the *Medical Register*, at the discretion of the Council. Candidates for the Final Examination must be over 25 years of age, produce a certificate of general good conduct signed by two or more Fellows of the College, and, if successful, must make a declaration before admission to the effect that they do not conduct dispensing practices, and will not do so as long as they are Fellows.

Fees.—Candidates for the Fellowship pay 5 guineas for each examination, the total of 10 guineas being reckoned as part of the fee payable on admission to the Fellowship. That fee is 25 guineas in the case of those who are already Licentiates, and 40 guineas in the case of others.

Apothecaries' Hall of Ireland

A diploma is granted by this Hall which entitles the holder to be registered as a practitioner of medicine, surgery, and midwifery, and confers also the privileges of an apothecary. Women candidates are eligible.

Fees.—First and Second Professional Examinations, £21; Final Examination, £21. Subjects of examination: First Professional, Anatomy and Physiology. Second Professional, Materia Medica and Pharmacy; Medical Jurisprudence and Hygiene; Pathology. Final Examination: Medicine, Surgery, and Midwifery. Candidates must enter for and pass at the one time in Anatomy and Physiology. They are at liberty to enter for the subjects of the Final Examination at separate times, but the Final Examination cannot be completed until a period of three years has elapsed from the date of passing the First Professional Examination.

Applications should be sent to the Registrar (Dr. T. G. McGrath), or to the Secretary (Mr. Jos. F. Kennedy), from either of whom all information can be had. The address is Apothecaries' Hall of Ireland, 95, Merrion Square, Dublin.

Medical Schools and Colleges

LONDON

Information as to the fees at each of the various metropolitan medical schools, and the scholarships, prizes, and junior appointments which they offer, will be found in the following pages. The courses they provide are fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the English Conjoint Board or the Apothecaries' Society, not less than of those who have London or other university degrees in view. At all, too, special facilities are offered to students who have commenced their professional education at Oxford or Cambridge, and are seeking the medical degrees of those universities.

Charing Cross Hospital

Situated in the centre of London, Charing Cross Hospital Medical School is the most easily accessible of all the London schools. Instruction is given in all the subjects for the final examinations of the universities of London, Oxford, and Cambridge, the Conjoint Board, and other licensing bodies. A particular feature of the school is that, by limiting the number of admissions to 30 students a year, they are in constant and intimate contact with the staff throughout the clinical period. The "firms" have no more than five clerks or dressers, and each student has the care of not less than six beds. The policy of the School is to concentrate on undergraduate teaching. In addition to the clinical appointments held by every student, courses of systematic lectures, demonstrations, and tutorial classes are held in all subjects of the curriculum. In the School there are departments devoted to bacteriology, clinical pathology, biochemistry, materia medica, public health, operative surgery, as well as laboratories for research. By reason of the abundance and variety of the material available for investigation, the Institute of Pathology, with its whole-time staff of scientific workers and its completely equipped laboratories, offers peculiar advantages to students in this branch of medicine. The Library has ample accommodation, and contains over 4,000 volumes, including modern textbooks and contemporary reviews. The Pathological Museum is organized in two sections: one devoted to specimens illustrating general conditions; the other consisting of the Lockyer Collection, one of the finest collections of gynaecological and obstetrical specimens in the country.

The hospital contains 300 beds. Of this number, 93 are allocated to medical cases, 92 to surgical, and 41 to obstetric and gynaecological. The remainder are distributed between the special departments. There are special departments for diseases of ear, nose, and throat, the eye, the skin, for children, for mental disorders and psychological medicine, for orthopaedic surgery and massage, for *x*-ray, electrical, and light treatment, for dental surgery, and for tuberculous and diabetic cases. In addition to the number of beds set apart for diseases peculiar to women and for midwifery cases, the hospital serves an extensive and thickly populated district in gynaecological and obstetric work. In-patients numbered 5,156 last year and the out-patient department dealt with 32,614 new cases. Out-patient attendances totalled 165,732.

The Students' Club provides for the athletic, recreational, and social life of the students by means of an 8-acre sports ground, with facilities for football, cricket, hockey, tennis, and badminton, by common rooms, restaurant, etc., and by sections of the club designed for a particular purpose, such as the debating society and the dramatic society. Plans have been passed for the erection of a new permanent brick-built pavilion providing complete accommodation for the club at the sports ground at Colindale.

Appointments.—The number of resident appointments as compared with the number of students in the School is exceptionally large, and students of reasonable ability and industry can usually be certain of obtaining one or more. The resident appointments, to which election is made every six months, number 13 (26 every year). During the time an appointment is held the officer receives a salary, and he is provided with free board and accommodation in the Residency of the hospital. In addition to the foregoing, two non-resident officers and a number of clinical assistants are appointed annually. Higher appointments.—Annual election is made to the posts of resident medical officer (£400), resident casualty officer (£200), medical registrars (two, £150 each), surgical registrars (two, £150 each), obstetric registrar (£100), and registrar to the ear, nose, and throat departments (£100). The holders of these posts are eligible for election for a second year. Every student during the course of his clinical studies serves the offices of medical clerk, surgical dresser, and clerk and dresser to all the special departments.

Scholarships.—The following are offered annually: (*a*) For students beginning medical studies, two scholarships, each of the value of £50. (*b*) For students beginning clinical studies, two University Scholarships, each of the value of £120, in pathology; one University Scholarship, value £120; and one Open Scholarship, value £75, in anatomy and physiology. An "Epsom College" Scholarship (£100) is awarded periodically on the nomination of the Head Master, and a "Cranleigh" Scholarship on similar conditions. In addition there are a number of exhibitions.

Prizes.—(1) The Llewellyn Prize (25), and the Llewellyn Certificate of Merit (with £10) for highest distinction throughout final course of studies. (2) Williams Travers Prize, £15, midwifery and gynaecology. (3) Pereira Prize, £5 5s., clinical commentary. (4) T. H. Green Prize, £5 5s., clinical commentary. (5) Clinical Surgery Prize, £3 3s. (6) Clinical Medicine Prize, £3 3s. (7) John H. Morgan Prize, £10. (8) Dr. H. W. C. Vines Prize in Pathology, £5. (9) Steadman Prize in Pathology, £2 2s. (10) Dr. Russell Reynolds Prize in Radiology, £5. (11) The Governors' Clinical Gold Medal. (12) Class Prizes of £2 2s. each in Hygiene and Public Health; Ophthalmology, Oto-laryngology; Psychological Medicine; Midwifery; Practical Midwifery; Gynaecology; and Pharmacology and Therapeutics.

Fees.—The fees are as follows: Entrance fee, £10 10s.; annual fee, 38 guineas. Annual subscription to Students' Club, £4 4s.

Male students only are admitted.

Further information may be obtained on application to Eric A. Crook, M.Ch., F.R.C.S., Dean of the Medical School, Charing Cross Hospital, London, W.C.2.

Guy's Hospital

The hospital contains 625 beds in constant occupation. Twenty-five beds are set apart for diseases of the eye, and there are special wards for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the ear, nose, and throat department, the departments of orthopaedics, neurology, and dermatology, the department for the treatment of diseases of the genito-urinary system, and the children's department; there are also some special beds for the treatment of syphilis.

The residential college fronts the east gate of the hospital, providing accommodation for resident students. This contains a dining hall, smoking room, reading room, a library of general literature, and a gymnasium for the use of the residents and members of the Clubs Union. The athletic ground at Honor Oak Park is reached from the hospital in fifteen minutes. The Gordon Museum of Pathology, the Wills Library, the departments of chemistry, physics, biology, pathology, and pharmacology, and the school buildings in general, afford opportunities for a liberal education and for research, and provide the full curriculum for all medical degrees and diplomas. The departments of anatomy, physics, and biology have been reconstructed and equipped on the most modern lines, and provide ample accommodation for teaching and research. At the present time a large extension of the medical school is in process of being built, and it is hoped that it will be opened in the summer term of 1938. It will provide accommodation for pathology, including

bacteriology and clinical chemistry. Ample accommodation will be available both for teaching and for research. In addition the new building, which will communicate with the existing building, will house both physics and pharmacology, setting free accommodation in the existing building, which will be devoted to enlarging the Departments of Anatomy, Physiology, and Biology. Special classes are held for the first and second examinations for medical degrees of the University of London, and for the first and final F.R.C.S.Eng. examinations. Special teaching is provided to meet the requirements of the Universities of London, Oxford, and Cambridge in general pathology and pharmacology.

Appointments.—All appointments are made according to the merits of the candidates, as determined by a committee of the medical staff. Sixteen out-patient officers, eight house-physicians, eight house-surgeons, sixteen assistant house-surgeons, two ophthalmic house-surgeons, two house-surgeons in the genito-urinary and orthopaedic departments, two house-physicians (children's department), two house-physicians (dermatological and neurological), and nine resident obstetric assistants are appointed annually. The house-physicians and house-surgeons, obstetric residents, ophthalmic house-surgeons, and the orthopaedic and genito-urinary house-surgeons hold office for six months each, and receive free board and lodging in the college. Every student is provided with rooms and commons in the hospital during the period of his "take in" as senior dresser. In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, ear, nose, and throat, gynaecology, diseases of children, diseases of the nervous system, dermatology, actinotherapeutics, anaesthetics, orthopaedics, vaccine, tuberculosis, genito-urinary and venereal disease; clinical assistantships in the various special departments are open to post-graduates.

Scholarships, Prizes, etc.—The following scholarships in Arts and Science are awarded. A. Open Junior Scholarships: (1) An Arts Scholarship of the value of £100, (2) a Science Scholarship of the value of £100; these are awarded annually in April. (3) A War Memorial Scholarship of the value of £200, awarded alternately in Arts and Science. This scholarship is open every other year; the next award will be made in April, 1938 (in Science). B. Confined Scholarship in Science. A Junior Science Scholarship of the value of £100 is offered for competition annually to candidates who have attended the preliminary science classes at this school. This scholarship is awarded on the results of the first M.B.London Examination held in July. For the Arts Scholarship candidates must be under 19 years of age on August 1 of the year of the competition, and for the Open Junior Science Scholarship candidates must be under 20 years of age on August 1 of the year of the competition. C. University Entrance Scholarships: (1) A War Memorial Scholarship, entitling the holder to free medical education for three years; (2) an exhibition of the value of £60; both of these are awarded annually in June or July. Candidates will be examined in two of the following subjects at their option: (1) anatomy and embryology; (2) physiology; (3) pathology, including bacteriology; (4) organic chemistry. The examination is held in common with the Medical School of St. Thomas's Hospital and the Medical College of St. Bartholomew's Hospital. *Prizes:* Junior prizes for general proficiency, £20, £15, £10; Hilton Prize for dissection, £5; Michael Harris Prize for anatomy, £10; Sands-Cox Scholarship for physiology, £15 for three years (awarded triennially); Wooldridge Memorial Prize for Physiology, £10; Beaney Prize for pathology, £34; Treasurer's Medal and Prize in medicine, Treasurer's Medal and Prize in surgery, Golding-Bird Gold Medal and Scholarship for bacteriology (£29), Golding-Bird Gold Medal and Prize (£29) in obstetrics and gynaecology, Edgcumbe Prize (books to the value of £3 10s.) awarded annually to the student who is placed *proxime accessit* for the Confined Junior Science Scholarship; and the Leonard Lubbock Prize in Clinical Pathology (£10) are awarded annually after competitive examination. *Studentships:* The following studentships are open to graduates from this school. (1) Gull Studentship in pathology, of the value of £250 per annum; (2) Beaney Scholarship in materia medica, of the value of about £60; (3) Anderson Demonstratorship in clinical chemistry, value £175 per annum; (4) Arthur Durham Travelling Scholarship of £100, awarded triennially; (5) Griffiths Demonstratorship in pathology, of the value of £320 per annum; (6) Hilda and Ronald Poulton Fellowship, value £150 per annum; (7) Adrian Stokes Fellowship in pathology and bacteriology, value £200, awarded biennially.

An annual composition fee is paid by all students until a registrable qualification is obtained. Further information may be obtained from the Dean of the Medical School, Guy's Hospital, London Bridge, S.E.1.

King's College Hospital

The New Medical School at Denmark Hill, opened in July, 1933, contains the museum, research laboratory, research rooms, common rooms, lecture rooms, refectory, and two squash rackets courts. Provision is made for all the subjects of the medical curriculum. The hospital was opened in 1913, and is easily reached from all parts of London. In the education at the hospital a special feature has always been the individual attention given to each student. The studies are co-ordinated under the direction of senior members of the honorary staff, assisted by medical, surgical, obstetric, and pathological tutors.

The Hall of Residence for members of the medical school is situated on Champion Hill. Both the Hall and the athletic ground are within ten minutes' walk of the school.

The Clubs and Societies Union combines athletics, music, and other societies connected with the school, and provides also the common rooms.

Appointments.—Thirty-one resident medical and surgical appointments are made during each year, as well as dressers and clerks in the wards, out-patient departments, post-mortem rooms, and special departments. Each of the special departments has clinical assistants. There are eight registrars and four tutors, all of whom receive salaries.

Scholarships, etc.—At entrance: Science Scholarship, £100. At commencement of Final Studies: Anatomy and Physiology Scholarship, £100; Pathology Scholarship, £100; two Raymond Gooch Scholarships, each £105; two Burney Yeo Scholarships, each £105 (for Oxford and Cambridge students); Seamen Scholarships, £50 a year; Epsom College Scholarship, £100; Senior Scholarship, £40; Todd Prize, Tanner Prize, Cheyne Prize, Legg Prize, Ware Prize, Ferrier Prize in Neurology, Class Prizes and Medals.

Fees.—The inclusive fee of £125 covers entrance and tuition fees, and subscriptions to the clubs and societies.

Dental School.—This school was opened in October, 1923, and, in conjunction with King's College, provides complete courses for dental degrees and diplomas.

The calendar of the school can be obtained on application to the Dean, John A. Drake, M.D., F.R.C.P., D.P.H., or to the Secretary of the Medical School, S. C. Ranner, M.A., King's College Hospital, Denmark Hill, S.E.5.

The London Hospital

The London Hospital serves the East End of London, and with 850 beds is the largest voluntary hospital in England. Students have the choice of five medical and five surgical firms. Each firm consists of two physicians or surgeons, a registrar, a house-physician or house-surgeon, about fifty beds, and seven clinical clerks or dressers. The number of students admitted each year is limited, so as to ensure that every student shall have an average of seven or eight beds allotted to him when acting as a clerk or dresser. The out-patient department deals with a hundred thousand new patients per annum, and is extensively used for teaching. Three wards devoted to maternity and gynaecological cases, the "*district*" served by the hospital, and the neighbouring County Council maternity centre for East London afford exceptional opportunities for gaining experience in the practice of midwifery. The size of the hospital necessitates a large number of resident medical officers. Every year seventy resident house-physicians and house-surgeons and eighty salaried non-resident clinical assistants are appointed. As the school is relatively small the chances of a student gaining some of these appointments are con-

siderable. The honorary visiting staff numbers over fifty. All take their part in teaching. The work of the hospital never stops, and at the "London" a student can gain a wealth of clinical experience and obtain a variety of clinical teaching which cannot be surpassed.

The Medical College is attached to the hospital, and is staffed by professors of anatomy, physiology, bacteriology, chemical pathology, morbid anatomy, and medicine of the University of London. Special courses in anatomy and physiology for the Primary F.R.C.S. and advanced courses in surgery for the Final F.R.C.S. examination, and in medicine for the M.D. and M.R.C.P. examinations, are held twice a year.

Scholarships and Prizes.—The following is a list of scholarships and prizes:—At entrance: Price Scholarship in science, £100. Two open scholarships, each of the value of £100. A Scholarship open to students of Oxford and Cambridge Universities: £100, anatomy and physiology; Entrance Scholarship in certain subjects of the preliminary examination in general education, £50; Epsom Scholarship, "free medical education." After entrance: Buxton Prize in anatomy and physiology, £40; Letheby Prizes in organic chemistry and chemical pathology, £25; H. L. B. Haking Prize in clinical obstetrics and gynaecology, £25; Duckworth Nelson Prize in practical medicine and surgery, £10; Hutchinson Prize in clinical surgery, £60; Treves Prize in clinical surgery, £20; Sutton Prize in pathology, £20; Sir Andrew Clark Prize in clinical medicine and pathology, £14; T. A. M. Ross (*prox. acc.*) Prize in clinical medicine and pathology, £10 10s.; Anderson Prizes in elementary clinical medicine, £20; Dressers' Prizes, £20; the F. N. Charrington Prizes in practical anatomy, £20; Arnold-Thompson Prize in medical and surgical diseases of children, £15; Liddle Prize, £120; Francis Farmer Entrance Scholarship in biology, chemistry, and physics, £25; Harold Fink Prize in dental surgery, £8 8s.; The "London" Prize in dental prosthesis, £6 6s. Six class examination prizes of the value of £3 3s. to £5 5s. are offered for competition at the end of the courses of lectures in the dental curricula. Funds to the value of over £113,000 permit of financial assistance being given to students and graduates engaged in medical research.

The Medical College contains a modern museum of pathology and a library provided with all the current medical periodicals in charge of a full-time librarian. There is also an Athenaeum Club and dining hall, a gymnasium, a fives court, and two squash courts in the students' hostel. The athletic ground of 13 acres at Hale End is within easy distance of the hospital. Although situated in the East End the hospital is only twenty minutes from Charing Cross and Baker Street. There is accommodation for sixty students in the students' hostel.

Further details may be obtained from the Dean, Dr. A. E. Clark-Kennedy, F.R.C.P., physician to the hospital, who is always pleased to meet students wishing to see the hospital and college. Application for admission should be made to the *Dean, Turner Street, London, E.1.*

The Middlesex Hospital

The school and hospital are in Mortimer Street, W.1, close to Oxford Circus, Goodge Street, and Great Portland Street stations. There are a gymnasium, squash rackets court, common rooms, and restaurant within the hospital precincts, and an athletic ground within easy reach. The hospital contains 590 beds, including a wing containing beds for patients suffering from cancer. There are special wards for maternity and gynaecological cases, for neurological cases, for cases of venereal disease, for diseases of children and of the skin and eye, for ear, nose, and throat cases, and for dental cases. The hospital has been entirely rebuilt, and includes a new house for resident officers.

The medical school, which includes the Bland-Sutton Institute of Pathology, the S. A. Courtauld Institute of Biochemistry, the Barnato-Joel Laboratories, and the Ferens Institute of Otology, is completely equipped for teaching the entire medical curriculum, including the pre-medical subjects, chemistry, physics, and biology. The Bland-Sutton Institute, under the direction of the Professor of Pathology, contains large pathological laboratories, and smaller rooms for original investigation, as well as a pathological and anatomical museum. Bacteriological and microscopical examinations of material from the wards, operating theatres, and out-patient departments are carried out in the laboratories, and senior students are eligible for clerkships in connexion with this work. Junior assistants in the pathological and bacteriological laboratories are elected annually from recently qualified students. Every facility is given for original research. The Biochemical Institute is under the charge of the Professor of Biochemistry, and contains teaching and research laboratories in addition to those devoted to the routine chemical pathological work of the hospital. The Barnato-Joel Laboratories offer unrivalled opportunities for the study of cancer in both its clinical and its pathological aspects.

Appointments.—Thirty-five resident appointments are open annually for competition among students of the hospital. The officers, and four resident officers to the special departments expense. Three casualty medical and two casualty surgical officers, and four resident officers to the special departments are appointed annually. Eight house-surgeons are appointed every year at intervals, after examination; eight house-physicians are also appointed annually at similar intervals. An obstetric and gynaecological house-surgeon is appointed every six months, and two orthopaedic house-surgeons and one senior and two junior resident assistant anaesthetists are appointed annually. A dental house-surgeon is appointed every eight months. Eleven registrars, each at a salary of £300 per annum, are appointed annually, and one half-time dental registrar at £150. In the out-patient departments and wards the appointments are: clerk and dresser to the physicians and surgeons to out-patients; clerk or dresser to the department for diseases of the skin and nerves, for diseases of women, for diseases of the ear, nose, and throat, for diseases of the eye, and to the departments for orthopaedics and for odontology. Extern midwifery clerks and post-mortem clerks are also appointed; every student secures six months' experience in midwifery and gynaecology without leaving London. The appointments are so arranged that every student may, during his course, hold all the out-patient and in-patient clerkships and dresserships. Non-resident qualified clinical assistants are appointed to the medical and surgical departments and also to the following departments: neurology, ophthalmology, otology, odontology, children, and electrotherapeutics.

Scholarships.—There are two open Entrance Scholarships, value £100 each. Two scholarships, of the value of £100 each, for students of the Universities of Oxford and Cambridge who have completed the curriculum for, or passed the examinations in, anatomy and physiology. Students joining the school in the previous April are eligible. In addition, there are two scholarships, value £100 each, open to students of the school when they have passed in anatomy and physiology. The Freer Lucas Scholarship is annually awarded on the nomination of the Head Master to a pupil of Epsom College who has passed the first examination for medical degrees (Preliminary Scientific Examination). There are numerous other valuable scholarships, prizes, and exhibitions open to students of the hospital, including the Broderip Scholarships, value £60 and £40; Lyell Gold Medal and Scholarship, value £55 5s.; Freeman Scholarship, value £30; John Murray Gold Medal and Scholarship, value £25; Hetley Clinical Prize, value £25; James Kingston Fowler Prize, value £15 15s.; Leopold Hudson Prize, value 11 guineas; and the Colin Mackenzie Prize, value 10 guineas.

The rebuilding of the hospital has been completed.

Fees.—(*a*) Entrance fee, 25 guineas, payable on joining the medical school; Pre-medical students: For one year or less, £21. (*b*) Students who have completed the Preliminary Science course: Five annual fees of £45. The annual fee for further attendance at the medical school, if a registrable qualification has not been obtained, is £23. (*c*) Oxford and Cambridge and other students who have completed the Intermediate course: entrance fee, 15 guineas; three annual fees of £45; further annual fees as above. These fees are inclusive and cover the cost of instruction in vaccination, fevers, etc., and also the subscription to the amalgamated clubs and hospital journal.

Further information may be obtained from the Dean or the School Secretary.

St. Bartholomew's Hospital

This institution fills one side of Smithfield and Giltspur Street, covering the greater part of a large island of ground separated practically from all other buildings; it is on the edge of the City, and easily reached from all parts of London. The hospital contains 762 beds. Extensive buildings, opened in July, 1907, occupy part of the ground acquired from the old Bluecoat School, and these materially enhance the attractions of the hospital as a place of medical study. The old medical school buildings have at their side a very large building, which includes quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any hospital in the kingdom. During the year 1909 a second block of new buildings was completed. These form the pathological department, and include, in addition to an extensive post-mortem room, large and well-equipped laboratories for clinical pathology, pathological histology, bacteriology, and chemical pathology, altogether forming the most complete pathological department in the country. A new block of surgical wards and five operation theatres (one attached to each surgical unit), with accommodation for 250 patients, was opened in June, 1930. A similar new block of medical wards, erected on the site of the old *South Block*, was opened by H.M. Queen Mary in July, 1937. One of the old blocks previously used for surgical cases has been reconverted for the housing of an enlarged gynaecological and obstetrical unit, with separate operation theatres attached. The Students' Union Athletic Ground, seventeen acres in extent, is situated on the Foxbury Estate at Chislehurst, and is easily accessible from the hospital.

The Medical College has recently purchased the site and buildings in Charterhouse Square (five minutes' walk from the hospital), formerly occupied by the Merchant Taylors' School, and the whole of the pre-clinical departments have now been transferred there. Various athletic amenities, including squash racket courts, are available on this new site.

Special classes are held for students preparing for the Preliminary Scientific and other examinations, for the M.B., M.D. of the Universities of Oxford, Cambridge, and London, and for the higher surgical degrees at the same universities, including the M.Ch.Oxon., M.Chir. Cantab., M.S.Lond., and F.R.C.S.Eng.

Clinical Units.—Special clinical units have been established in medicine and surgery, each under the charge of a professor and director, who devotes the whole of his time to the purpose of hospital practice, teaching, and research. In each unit there are an assistant director and four assistants, for whom special laboratory accommodation has been provided by a gift from the Sir William Dunn Trustees. The appointments of clerks and dressers in these departments are open to all students, and, so far as possible, arrangements are made for all students to study in these units during a part of their clinical course.

Appointments.—Clinical clerks to the physicians and to the physician-accoucheur, and dressers to the surgeons and in the casualty department, are chosen from the students; clerks and dressers are also selected from the students to attend in the out-patient rooms, in the special departments (ophthalmic, orthopaedic, gynaecological, children's laryngological, aural, dermatological, venereal, electrical, and dental), and in the post-mortem room. Chief assistants and clinical assistants are selected from qualified men appointed yearly to help in the general medical, surgical, and in special departments. Ten house-physicians and ten house-surgeons are appointed annually. During their first six months of office they act as "junior" house-physicians and house-surgeons, and receive a salary of £80 a year. During their second six months they become "senior" house-physicians and house-surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident midwifery assistant, an ophthalmic house-surgeon, a house-surgeon to the skin and venereal department, and a house-surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Three resident administrators of anaesthetics are appointed—the senior for one year at a salary of £150, and two juniors for six months with a salary at the rate of £80 per annum—and all are provided with board and rooms. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year. In the selection of men for these posts preference is given to those who hold the medical degrees of Oxford, Cambridge, or London.

Scholarships.—Seven Entrance Scholarships and Exhibitions are awarded annually. The subjects of examination and conditions of eligibility for these scholarships are: (1) and (2) one scholarship, entitling the holder to free undergraduate medical education for a period of three years, and one exhibition, value £60, in any two of the following subjects: human anatomy and embryology, physiology, pathology (including bacteriology), biochemistry. Candidates must have completed their examinations in anatomy and physiology in a British school or university outside the London Metropolitan area. (3) One scholarship, value £100, in the three following subjects: chemistry, physics, biology; limited to students under 21 years of age who have not entered on the medical or surgical practice of any London medical school. (4) An entrance scholarship in arts, of the value of £100, in mathematics; Latin or Greek or French or German; a second language or chemistry or physics. (5) The Jeaffreson Exhibition in the same subjects as No. 4, of the value of £50. Candidates for Nos. 4 and 5 must be under 19 years of age. (6) Helen Cave Memorial Scholarship, awarded after open competition to sons of registered medical practitioners, value about £200, conditions obtainable from the Dean. (7) The Shuter Scholarship, value £50, in anatomy and physiology, is confined to Cambridge graduates. The total value of the scholarships and prizes is about £1,900 annually.

Further information and a handbook can be obtained on application to the Dean of the Medical College, St. Bartholomew's Hospital, E.C.1.

St. George's Hospital

This School is at Hyde Park Corner, and is carried on in connexion with St. George's Hospital, an institution having a service of 436 beds, of which 100 are at the convalescent hospital at Wimbledon. It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at King's College in the Strand. The school at Hyde Park Corner is devoted entirely to the teaching of clinical subjects, great attention being paid by the members of the staff to individual teaching. A number of special courses are given, in which the requirements of university and all other examinations receive careful attention.

The St. George's Hospital Club consists of an amalgamation club, with smoking and luncheon rooms on the hospital premises, and other students' clubs, with an athletic ground at Wimbledon. Students have the advantage of a well-filled library of medical and scientific books. A register of accredited apartments and a list of medical men and others willing to receive St. George's men as boarders may be seen on application to the Dean.

Appointments.—Eight casualty officers, ten house-surgeons, and eight house-physicians are appointed annually. They are provided with board and lodging in the hospital, and receive honorariums of £40 per annum. In addition, the following appointments are open to all qualified students of the hospital: assistant resident physician at £250 per annum; two surgical chief assistants at £200 per annum; medical officer to the Atkinson Morley Convalescent Hospital at £300 per annum; two medical registrarships at £100 per annum; medical officer to the biochemical department at £100 per annum; assistant curatorship of the museum, £100 per annum; obstetric assistantship, resident, at £100 per annum; the post of resident anaesthetist at £100 per annum.

Scholarships.—The following Entrance Scholarships and Exhibitions in anatomy and physiology and in general pathology are awarded in July to candidates who have passed the second M.B.London or corresponding examination; Senior William Brown Exhibition of the value of £120; Junior William Brown Exhibition of the value of £80; Anne Selina Fernee Scholarships (two) of the value of £80 each; Anne Selina Fernee Exhibitions (two) of the value of £60; Devitt-Pendlebury Scholarship of the value of £50; and Exhibitions,

each of the value of £40 and up to four in number. Other prizes to the value of £200 are awarded annually to the students of the hospital.

Fees.—For the course of clinical study, in the fourth and subsequent years, entrance fee, £10 10s.; annual composition fee, £42. No entrance fee is payable by St. George's students who have studied at King's College.

Further information may be obtained from the Dean of the Medical School.

St. Mary's Hospital

St. Mary's is exceptional in its situation, for while it is adjacent to a large poor district in which it serves some 500,000 persons, one-tenth of whom (on an average) pass through the hospital annually for treatment of one kind or another, it is, nevertheless, so near to Kensington Gardens and one of the best residential districts of London that it offers to the medical student the unusual possibility of living in close touch with his work, without a wearisome journey in an overcrowded train or tube. As a direct outcome of this, social life among students is closer than is possible where the members of a school live scattered in many parts of London and its suburbs.

Approximately £250,000 has been spent in rebuilding the medical school and laboratories upon a site adjoining the hospital. The new buildings were formally opened by his late Majesty King George V, accompanied by Queen Mary. Apart from the laboratories, class-rooms, and theatres for all the subjects in the curriculum, they include a library, restaurant, students' club, billiard room, full-sized swimming bath, squash rackets court, gymnasium, boxing ring, and an underground garage for fifty cars.

The principle underlying the clinical teaching is to encourage the student, under supervision, to carry out for himself the various methods of clinical investigation and treatment. This is secured by the provision of a very large number of appointments, and by developing the system of clinical clerkships and assistants. Large classes are avoided whenever possible, and the intimate association between staff and student has been reinforced by the institution of Clinical Units. St. Mary's is one of the three medical schools in London to enjoy the great advantages in teaching and research which these units confer. The clinical material is exceptional. A new block has recently been added containing two operating theatres and 60 beds. Owing to affiliation with adjacent hospitals, more than 1,000 beds are now available for teaching. There are lying-in beds at St. Mary's, with upwards of 500 confinements yearly, and in addition to the instruction thus obtained each student is sent (without further fee) to Queen Charlotte's Hospital for a fortnight as part of his training in midwifery.

Students especially interested in pathology and bacteriology have singular advantages at St. Mary's. The institute comprises seven special departments, the whole being under the personal direction of Sir Almroth Wright. Two Research Studentships of £200 each are awarded annually.

From three to five Entrance Scholarships are awarded annually by nomination. Full particulars may be obtained from the School Secretary, St. Mary's Hospital, Paddington, W.2. Numerous appointments are open to newly qualified members of the medical school, including seventeen salaried posts with salaries varying up to £750 per annum.

The Old Merchant Taylors' ground (13 acres) has been acquired. On sand, it remains dry throughout the winter.

St. Thomas's Hospital

The Hospital and Medical School are situated along the Albert Embankment between Westminster and Lambeth Bridges. The buildings form one of the most striking architectural features of London, opposite the Houses of Parliament, with Lambeth Palace and the beautiful grounds adjoining immediately to the East.

The hospital consists of eight linked-up pavilions, the Medical School buildings being separated from the hospital by a quadrangle; they comprise a magnificent Department of Anatomy with its own lecture theatre, museums, research laboratory, and *x*-ray department, the School of Physiology, named after Sir Charles Sherrington, O.M., completely equipped for teaching and research, a newly rebuilt Department of Chemistry with special facilities for research; Physics and Biology Laboratories. The school buildings contain also the library and reading room, which overlook the river and contain approximately 8,000 volumes, also an excellent supply of periodical literature adapted to the needs of medical students and research workers. The Museum, named after Professor S. G. Shattock, is also situated in the School; it contains nearly 5,000 preparations. In the west wing are the Pathological Institute and the Photographic Department. The post-mortem room was entirely rebuilt in 1932; it is a model of its kind, with a large demonstration amphitheatre, which is perfectly adapted for teaching purposes and for the intimate study of morbid pathology.

The complete curriculum is provided for; students can join the Medical School directly after passing the requisite examination in general education, and proceed at once to the study of the first M.B. pre-medical subjects, which are taught by experienced professors and lecturers with the assistance of full-time demonstrators. Most students, particularly those entering for the first M.B. pre-medical examination, enter in October, but the clinical studies are arranged in three-monthly periods, and students can join at any time of the year for clinical studies. Classes for the Primary F.R.C.S. are held before each examination; these classes are held in conjunction with St. Bartholomew's and Guy's, three to four weeks' special teaching being arranged by each of the three Schools in turn. Instruction in the psychology of the normal is given during the later periods of pre-clinical studies. Classes in pharmacology and materia medica and pharmacy cover the requirements of all the examining bodies.

Clinical Studies.—The hospital contains 640 beds; in addition it has 30 beds (with teaching facilities over a further 150) at the Pyrford Orthopaedic Hospital, and 22 beds at the St. Thomas's Babies' Hostel in Lambeth. During 1935 the number of patients admitted into the hospital was 11,814; during the same period 99,341 out-patients were treated. In the Maternity Department 2,238 women attended; 643 were admitted into the special maternity ward and 383 were delivered in the district. Casualties to the number of 147,213 attendances were dealt with during the same period. In addition to the 692 beds actually controlled by the hospital, students have the advantage of a close liaison with Lambeth Hospital, where demonstrations of rare and advanced cases, such as are seldom seen in the wards of a general hospital, are arranged at regular and frequent intervals by the superintendent. The obstetric training of students is supplemented by an arrangement with St. James's Hospital, Balham, whereby throughout the year two students at a time spend a fortnight in residence at St. James's Hospital, where they follow, and take part in, the maternity work of the hospital. Clinical teaching of medicine and surgery is carried out daily throughout the year in the wards and out-patient departments. From the day that a student enters on his clinical studies he comes into direct responsible contact with patients. Every student acts as clerk in the post-mortem room and in the pathological laboratories. The Medical Unit, through which every student passes for a period of three months, provides a very thorough grounding in clinical medicine and clinical biochemistry, the in-patient clerking being afterwards completed under the aegis of a different medical firm. In addition to three months' dressing in the casualty department at the outset of his clinical studies, every student becomes, for six months, a dresser to one of the surgeons of the hospital; during this period he receives instruction in anaesthetics. Great stress is laid on the teaching of pathology, which proceeds *pari passu* with the clinical appointments held by the student throughout the curriculum. The special maternity ward in the hospital gives the student scope for elementary obstetric training before he takes his turn of duty on the district, where again he works

under close supervision. All the special departments are available for the teaching of students; special attention is given to ante-natal instruction and the teaching of the diseases of children, a department through which every student passes. The laboratories and reading room in the units building are open day and night for those who wish to avail themselves of these facilities. A special Tuberculosis Department in the hospital forms a part of the Lambeth scheme for the treatment of patients. The Venereal Disease Department is part of the L.C.C. scheme. The clinical material in the hospital is placed wholly at the disposal of undergraduate students with the exception of a small class held twice yearly for the Final F.R.C.S. Examination; postgraduate clinical students are not accepted. Special tutorial classes in all subjects are held before all the final examinations of the Universities and Conjoint Board.

St. Thomas's House—the Amalgamated Students Clubs' premises immediately opposite the hospital—was opened in 1927; it has all club amenities, with two squash rackets courts, a miniature rifle range, and ample garage accommodation. The hostel in the same building has accommodation, with all modern comforts, for 50 resident students. There is a hard tennis court in the Medical School quadrangle, and the beautiful sports ground at Chiswick provides for all field games.

Appointments.—Following qualification the following appointments are open to students: twenty-five clinical assistantships to the various special departments are appointed every three months. Eight resident casualty officers and anaesthetists, seven house-physicians, and nine house-surgeons are appointed every six months. Nine chief assistants (unpaid) to the special departments and nine non-resident registrars (medical, surgical, obstetric, and ophthalmic) at a salary of £250 hold appointments renewable yearly. A resident anaesthetist (salary £200), a resident assistant physician, and a resident assistant surgeon (salary £225 per annum) are appointed annually. Assistants in the medical and surgical units (salary £450 to £600) hold appointments with a maximum tenure of four years. Three assistants in the Department of Pathology hold appointments at a salary of £450 to £600 a year.

Scholarships and Prizes.—At this School there are the following Entrance Scholarships: Two in Natural Science, of the value of £150 and £60 respectively; the University Scholarship of £100 in any two of the following: anatomy, physiology, pathology, chemistry, also the "Hector Mackenzie" University Exhibition of the value of £60. The value of all Entrance Scholarships is taken out in Tuition Fees. The money value and subjects of examination of the remainder are as follows: (*a*) William Tite Scholarship for second-year students £25; (*b*) and (*c*) Musgrove Scholarship or (alternatively) Peacock Scholarship each for third-year students and tenable for two years £35 each; (*d*) Mead Medal, medicine, pathology, and hygiene; (*e*) Wainwright Prize, medicine; (*f*) Toller Prize, medicine; (*g*) Cheselden Medal, surgery and anatomy; (*h*) Clutton Memorial Medal in Clinical Surgery, biennial; (*i*) Beaney Scholarship £50, biennially, surgery and surgical pathology; (*j*) Solly Medal and Prize, biennial, reports of cases; (*k*) Sutton Sams Prize, biennial, reports of cases; (*l*) Bristowe Medal, pathology and morbid anatomy; (*m*) Hadden Prize, pathology and morbid anatomy; (*n*) Grainger Testimonial Prize £31 10s., anatomy and physiology; (*o*) Louis Jenner Research Scholarship tenable for two years, £60 annually, pathology; Anderson Scholarship and Perkins Fellowship, research; Myers Exhibition and Planck Prize in Psychological Medicine; and others, the result of special donations and bequests are available during the academic year.

University College Hospital

The school, which forms part of the corporation of University College Hospital, is in immediate proximity to the hospital in University Street, and opposite University College. It comprises departments of medicine, surgery, midwifery and gynaecology, pathology including morbid anatomy, chemical pathology, biochemistry and bacteriology, cardiography, forensic medicine, mental physiology and mental diseases, dental surgery, practical pharmacy, and other departments for the study of special diseases, such as those of the eye, skin, ear and throat, venereal diseases, and for instruction in anaesthetics, electrotherapeutics, and skiagraphy. The hospital and school have acquired the National Dental Hospital and College as their dental departments, thus providing every facility for the study of dental subjects. The Royal Ear Hospital has also been amalgamated as the Ear, Nose, and Throat Department, and a new hospital for in- and out-patients, close to University College Hospital. It contains 41 beds, including eight private wards for patients of limited means.

The school thus provides the final course of study for the degrees of the Universities of Oxford, Cambridge, London, Durham, and other British universities, and for the diplomas of the Royal Colleges of Physicians and Surgeons in medicine and in dental surgery. Each department is also equipped for more advanced work, and provides facilities for research.

Clinical units in medicine, surgery, and obstetric medicine are in operation. The whole-time directors of the units are concerned with the organization of the teaching generally, but the honorary staff is responsible for the largest share of the teaching in the wards and out-patient department of the hospital. The hospital has 617 beds, including eighty-five in the obstetric hospital and seventy-seven in the new private patients' wing.

The new buildings of the obstetric hospital of eighty-five beds (rendered possible by the Rockefeller benefaction), the new Residents' House (with accommodation for thirty-three residents and students), the extension of the Nurses' Home, and the new research laboratories for the Medical School, are now finished and in full occupation. Among the most recent developments are the following: (i) The new Private Patients' Wing with seventy-seven beds, all of which are in single rooms with the exception of two four-bed wards. This wing has the very latest medical equipment, together with all possible devices for the comfort of patients. (ii) An entirely new and up-to-date *x*-ray diagnostic department. (iii) New ante-natal, gynaecological, and child welfare out-patient departments. The opportunity has been taken to transfer the present children's out-patient department to the new extension, thus securing the obvious advantage of easier co-operation.

A Students' Hostel adjoins the Medical School. Large, airy, and handsomely furnished bed-sitting rooms, each fitted with hot and cold running water, are available.

Appointments.—The qualified appointments, in addition to a number of posts as house-physicians and house-surgeons and obstetric assistants, include the appointments of resident medical officer, medical registrars, surgical registrars, obstetric registrar, Harker Smith radium registrar, ophthalmic registrar, casualty medical officers, casualty surgical officers, assistants in ear, nose and throat, skin and venereal diseases departments, and house anaesthetists.

Scholarships.—The following scholarships and prizes are open to competition: Two Goldsmid Entrance Scholarships entitling the holder to the final course of medical study; one Goldsmid Entrance Exhibition entitling the holder to a reduction by £80 of the fees due for the full course of final medical study; and a Filliter Entrance Scholarship in pathology, entitling the holder to a reduction by £52 10s. of the fees due for the full course of final medical study. The examination for these scholarships is in any two of the following subjects: anatomy, physiology, general pathology, and biochemistry. The examination for 1938 will be held as follows: Monday, July 18, 10 a.m. to 1 p.m., anatomy; 2 p.m. to 5 p.m., physiology. Tuesday, July 19, 10 a.m. to 1 p.m., biochemistry; 2 p.m. to 5 p.m., general pathology. Candidates for the Filliter Exhibition need take pathology alone. Radcliffe Crocker Travelling Scholarship in dermatology for one year, value about £280; the Graham Scholarship in pathology of a sum not exceeding £400 per annum; Leslie Pearce Gould Research Scholarships in surgery for one year, value about £260; the Bilton Pollard Fellowship of the annual value of £650 per annum; the Atkinson Morley Scholarship of £45 a year for three years awarded after examination in the theory and practice of surgery; the Atchison Scholarship of £55 a year for two years for general proficiency in medical studies; the Magrath Clinical Scholarship, value about £160; Ferriere Scholarship, value £25; the Filliter Exhibition in pathology of £30; the Percival Alleyn Prize for the advancement of surgery by research, value about £300 and awarded every three years; the Graham Gold Medal for research work; four Fellows Medals in clinical medicine; Liston Medals in clinical surgery;

the Bruce Medal in pathology and surgery; two Tuke Medals in pathology; the Erichsen Prize for practical surgery; and the Roberts and Suckling Prizes in obstetrics and gynaecology.

Fees.—Inclusive fee to cover complete clinical course: £45 per annum for three years. Oxford and Cambridge students who have completed their course in pathology: £40 per annum for three years. There are no extras, as these fees include courses of instruction in pharmacy, vaccination, and fevers, and life subscription to the Medical Society or Women's Medical Club.

Particulars of general and special courses can be obtained on application to the Dean of the Medical School, University College Hospital, University Street, W.C.1.

Westminster Hospital

The school, with its hospital situate in Broad Sanctuary, opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the University of London at King's College, Strand, and University College. The rest of the work is done in the school buildings near the hospital. There is at present being erected a new Hospital and Medical School on adjoining sites in Horseferry Road (five minutes from the present site). The new school buildings will be ready for occupation in the early part of 1938 and the new Hospital a year later. The new buildings will incorporate the latest advances in medical science. The number of in-patients averages 5,000 and out-patients upwards of 30,000 annually, and the hospital and school afford ample facilities for instruction in all branches of medicine and surgery. Every student must perform the duties of out-patient dresser for three months, and afterwards hold the office of in-patient dresser for three months. He is also required to serve two terms of three months each as medical clinical clerk to the in-patient physician, and one term as gynaecological clinical clerk. Pathological clerks are appointed every three months to assist in the post-mortem room. No student is eligible as an in-patient dresser or clinical clerk until he has completed his examination in anatomy and physiology. Clerks and dressers in the special departments of hospital practice are periodically appointed.

An annexe devoted to radium therapy and research, containing twenty-two beds, has recently been opened.

The athletic ground is situated at Tooting, and can be reached in twenty minutes from the hospital.

Appointments.—A medical registrar and an assistant medical registrar at a salary of £250 and £150 and three surgical registrars at a salary of £250 are appointed annually, and an obstetric registrar with a salary of £50 plus £50 for tutorial fees. A senior resident and casualty officer, salary £104 per annum and board, appointed for six months, may be extended for a further period of six months. A medical registrar to the children (Wander scholar), salary £250, is appointed for one year. Three house-physicians, three house-surgeons, three assistant house-physicians, three assistant house-surgeons, and a resident obstetric assistant are appointed after examination, and are provided with rooms, commons, and salary of £52 per annum, except the assistant house-physicians and the assistant house-surgeons, who are provided with commons only. The assistant house-physicians, after three months' service, become house-physicians for a further period of six months, and the assistant house-surgeons, after three months' service, become house-surgeons for a further period of six months. One house-anaesthetist is appointed for six months, non-resident, salary £100 per annum. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among the qualified students.

Scholarships.—The following open scholarships are offered for competition during the year 1936–7. In the winter session two scholarships in anatomy and physiology, £75 each. In the spring two scholarships in anatomy and physiology, £75 each. In May an examination in English Essay, Chemistry, and Physics is held, on the results of which four Entrance Scholarships to the value of £75 each are awarded.

During the period of study the following prizes may be competed for: Sturges Prize in Clinical Medicine (Reports on Cases); Chadwick Clinical Surgery Prize (Reports on Cases); Chadwick Prize (Medicine and Surgery); Frederic Bird Medal and Prize; Abrahams Prize (Clinical Pathology); Hanbury Prize in Diseases of Children; Sturges Class Prize in Bacteriology; Class Prize in Midwifery, Diseases of Women, Medicine, Pathology, Forensic Medicine, Public Health, and Surgery.

Fees.—The annual composition fee is 40 guineas. At entrance fee is payable by all students—namely, primary and intermediate students, £10 10s.; students entering for the final subjects only, £8 8s. These fees, which include subscriptions for membership of the Clubs Union, are subject to alteration from time to time as the School of Medicine may direct.

Further information and a prospectus can be obtained on application to the Dean at the Westminster Hospital Medical School, 12, Caxton Street, Westminster, S.W.1.

London (Royal Free Hospital) School of Medicine for Women

The school is situated at 8, Hunter Street, Brunswick Square, W.C.1, close to the Royal Free Hospital. It is, like all the other London schools which have so far been mentioned, one of the constituent schools of the University of London. The laboratories are extensive and well lighted, and are fully equipped for the examination courses of the University of London and the Royal Colleges of Physicians and Surgeons. Research laboratories are attached to all departments. A large, well-equipped library, common room, Union Room, and refectory are provided for the use of students. Resident accommodation for 80 students is provided in students' chambers attached to the school.

The Royal Free Hospital, Gray's Inn Road, W.C.1, has 326 beds, of which 20 are for private patients. The obstetrical and gynaecological unit controls 68 beds. A large maternity district is served from the unit with a separate maternity hostel in the Essex Road, Islington. There are separate departments for diseases of the eye, ear, and skin, children and infant welfare, venereal diseases, orthopaedic surgery, massage, light, electrical and *x*-ray work, dentistry, and casualty. Students attend the practice of one of the fever hospitals of the London County Council and receive special instruction in psychological medicine at Horton Hospital, Epsom; they are also admitted to the practice of a number of special hospitals, and hold clerkships and dresserships at the Elizabeth Garrett Anderson Hospital, the Cancer Hospital, Hospital for Sick Children, Great Ormond Street, the National Hospital for Nervous Diseases, the South London Hospital, the Central London Ophthalmic Hospital, and the Royal Ophthalmic Hospital. The work of the school includes preparation for the Primary Fellowship examination.

Appointments.—Qualified students of the school can obtain appointments as house-physicians and house-surgeons, obstetric assistants, surgical, gynaecological, and medical registrars, assistant pathologists, assistant anaesthetists, medical electrician, skiagrapher, and clinical assistants and demonstrators in various subjects.

Scholarships.—The Isabel Thorne and A. M. Bird Entrance Scholarships, value £30 a year for six years, the St. Dunstan's Medical Exhibition, value £60 a year for three years, which may be extended to five years, the Alfred Langton Scholarship of £35 a year for two years, the Flora Murray Bursary of £50, the Mabel Sharman-Crawford Scholarship, value £20 a year for four years, and the Emma Beilby Bursary of £55 a year, are offered for competition in each year. The Sir Owen Roberts Memorial Scholarship and the MacIntyre Evans Scholarship each of the value of £75 a year for four years; the Mrs. George M. Smith Scholarship of the value of £50 a year for three years, which may be extended to five years; the Dr. Margaret Todd Scholarship of the value of £37 10s. a year for four years; and the Sarah Holborn Scholarship of the value of £20 a year for three years, which may be extended to five years, are awarded in alternate years. The School Jubilee Bursary of £50 a year for three years is offered every third year. The Fanny Butler Scholarship of £16 a year for four years is awarded every fourth year. The Bostock Scholarship, value £90 a year for five years, is awarded by the University of London on the recommendation

of the Reid Trustees and the School Council on the result of an examination held in May every fifth year. The Lieutenant Edmund Lewis and Lieutenant Alan Lewis Memorial Scholarship, of the value of £25 a year for four years, is awarded every fourth year. The A. M. Bird Clinical Scholarship of £30 a year for three years. The John Byron Bursary of £20 a year for two years, the Julia Ann Hornblower Cock Prize of £60, the Helen Prideaux Prize of £60, the Mabel Webb and A. M. Bird Research Scholarship of £200 for one year, the A. M. Bird Postgraduate Scholarship of £200 for one year, together with other scholarships and prizes, are offered on sundry conditions. The Dr. Edith Pechey-Phipson Postgraduate Scholarship of £95 is awarded annually. Altogether the school offers annually £2,050 in scholarships. Missionary societies offer scholarships on certain conditions to assist women who wish to work in the Mission Field.

Fees.—For the full course of study: £50 per annum throughout the course.

The Students' Union exists to promote corporate action of the students on matters of common interest, to promote and maintain athletic and other clubs, and to issue a school magazine. All students are required to become members of the Union.

Further information can be obtained from the Warden and Secretary.

King's College

The Medical Faculty at this College of the University of London gives instruction in the subjects of medical science for all the usual preliminary and intermediate examinations in medicine, surgery, and dentistry. For final studies students proceed to one of the associated hospitals —King's College, Charing Cross, St. George's, Westminster —whose ample facilities, including over 1,000 beds, are available for clinical work.

The Medical Faculty of the College provides a general university education in touch with other faculties, classes of which medical students are permitted to attend. There are many college societies, clubs, and functions in which students of all faculties have opportunity of meeting each other. The College has a large athletic ground at Mitcham, and well equipped with a new pavilion.

The first-year subjects are taught in the large departments of the Faculty of Science. Within the last few years there has been complete remodelling of the second and third year medical departments at a cost of £70,000. This has comprised a new Department of Anatomy and reorganization, with considerable extension, of the Department of Physiology.

Scholarships.—The scholarships include: (1) Two Warneford Entrance Scholarships, each £30 for four years; subjects—selected from mathematics, classics, divinity, and science. (2) One Sambrook Entrance Scholarship of £30 for three years; subjects of examination selected from mathematics, classics, and science. One Warneford Scholarship awarded at end of first year. Subjects as for First M.B. together with Divinity. (3) Worsley, £100, paid in five annual instalments. The holders of the preceding awards must proceed to King's College Hospital. (4) Rabbeth Scholarships, value £30 and £15, in July, for the best student of the first year. (5) Daniell Scholarship, £40. (6) The Layton and Berridge Studentships, each £150 and £100 per annum respectively, and (7) numerous prizes.

Full information as to admission, fees, and scholarships can be obtained from the Dean of the Faculty of Medical Science, King's College, Strand, W.C.2.

University College

This institution, one of the principal component parts of the University of London, possesses a Faculty of Medical Sciences whose work covers all the subjects included in the group commonly known as the preliminary medical sciences—namely, physics, chemistry, botany, and zoology; and also the intermediate medical sciences—namely, anatomy (including embryology and histology), physiology, biochemistry, and pharmacology. The anatomy building, provided by the munificent gift of the Rockefeller Foundation of New York, was opened on May 31, 1923, by His Majesty King George V. This building forms part of the block which includes physiology and pharmacology. A new building has recently been added for the department of zoology, for the endowment and equipment of which the Rockefeller Foundation has made another generous benefaction. Research work is undertaken in all the above-named departments. The College undertakes the education of students in all the subjects mentioned, leaving them free to complete their education in the strictly professional subjects—medicine, surgery, and the like—at any one of the recognized schools of advanced medical studies. The work is somewhat differently arranged, according to whether the student has in view the degrees of the University of London or the diplomas of the Royal Colleges. In either case the whole work to be done is divided into courses devised to meet the requirements of different examinations, and students can join the College for any of them. Women students are admitted to all courses on the same terms as men. The general arrangements for the benefit of students include membership of the Union Society or the Women's Union Society, with use of the College gymnasium and the athletic grounds. There is also a collegiate residence for about sixty-seven men students at Ealing and for one hundred and seventy-two women students in Malet Street.

Scholarships.—The scholarships and exhibitions obtainable include the Bucknill Scholarship, value 160 guineas, in chemistry, physics, botany, and zoology (the successful student must complete his work at University College Hospital Medical School)—the examination includes an English essay; two Entrance Exhibitions in the same subjects, each of the value of 55 guineas; a Faculty of Medical Sciences Entrance Scholarship, value £30 a year, for three years; the Bayliss-Starling Memorial Scholarship (physiology and/or biochemistry), £120; and the Ferriere Scholarship, £25, tenable for three years at University College Hospital Medical School.

Fees.—The fees for the courses covering the work of the First Examination for medical degrees of the University of London, and both parts of the Second Examination, and for the corresponding examinations held by the Conjoint Board in England, amount to 118 guineas. These fees do not cover tuition for more than a stated period.

A handbook specially relating to this faculty may be obtained on application to the Secretary of University College, Gower Street, London, W.C.1.

THE PROVINCES

There are in England and Wales, not counting London, ten medical schools, each supplying instruction in the full medical curriculum. Accounts of them here follow. In several cases information is appended about hospitals other than those directly connected with the school in question; such hospitals, officially and unofficially, play a part in the education which the students of the school receive, and in any case serve as places of additional or postgraduate study.

Oxford and Cambridge

At both Oxford and Cambridge there are medical schools which furnish unsurpassed opportunities for obtaining a good knowledge of the preliminary sciences and of anatomy, physiology, and pathology. The laboratories are excellently furnished, and the teaching staffs most distinguished. Both schools provide a full medical curriculum, and there is no essential reason why the student should not complete his career at either of them; but this is not commonly done, and is never, in the ordinary way, advised by the university medical authorities. The local hospitals—the Radcliffe Infirmary at Oxford and Addenbrooke's Hospital at Cambridge—though well equipped, are comparatively small. Students are therefore encouraged, as soon as they have completed the earlier examinations and taken a degree in arts, to join one of the London medical schools, and thus spend the time of their preparation for the final examinations in a city where the opportunities for gaining clinical knowledge are greater and more varied. A considerable proportion of Oxford and Cambridge medical students take

the London Conjoint diplomas before graduating in medicine and surgery at their own university. The experience gained by holding resident hospital appointments is naturally of much advantage when sitting for the Final M.B. examination.

Birmingham

The school in this city is carried on by the Medical Faculty of the University of Birmingham, its students having an adequate number of good laboratories, classrooms, and other necessaries devoted to their use by the university. The clinical work is done at the Birmingham United Hospital (General and Queen's Hospitals), which are amalgamated for the purpose. Together they have upwards of 800 beds for medical, surgical, and special cases, with an array of special departments of all kinds, including one for lying-in women (about 13,000 in-patients and 90,000 out-patients). Clinical instruction is given in the wards and out-patient and special departments daily, and formal clinical lectures are delivered weekly throughout the session. Special tutorial classes are also held alike for the degrees of Birmingham and other universities, and for the diplomas of corporations.

The Birmingham United Hospital.—The practices of the General Hospital and the Queen's Hospital are amalgamated for the purpose of clinical instruction, which is carried on under the direction of the Board of Clinical Studies. They present an almost unrivalled field for clinical work, possessing more than 800 beds, treating annually about 14,000 in-patients and 90,000 out-patients, and as students spend part of their curriculum in each hospital, they have every opportunity of acquiring a varied, full, and practical knowledge of their professional work. The curriculum is adapted in the first place to meet the needs of the students of the Birmingham University proceeding to the M.B., Ch.B. degrees, but it is also well adapted to the requirements of students preparing for the examinations of all other universities and licensing bodies. The advantages that the combined hospitals offer to students do not cease with graduation, for there is probably no city in which students after qualification have a larger number of resident posts open to them.

Resident posts are also available at the Children's Hospital, the City General Hospitals, the City Public Assistance Institutions, the Birmingham Mental Hospitals and Mental Deficiency Act Institutions, the City Infectious Diseases Hospitals, the Birmingham General and Branch Dispensaries, the Birmingham and Midland Eye Hospital, the Royal Cripples Hospital, the Ear and Throat Hospital, the Maternity Hospital, the Women's Hospital, at St. Chad's Hospital, Edgbaston, and at the Birmingham and Midland Hospital for Nervous Diseases. Besides positions in institutions in the City of Birmingham, there are numerous resident salaried appointments in the hospitals in the immediate vicinity which are open to the students of the Birmingham Medical School. Appointments are also open to medical practitioners in the Naval, Military, Air Force, and Indian and Colonial Medical Services.

Scholarships and Prizes.—There are numerous money and other awards for students of sufficient merit, among them being the following: Frank Fletcher and Catherine Fletcher Scholarships (not less than two per annum), tenable for five years, each of the annual value of £100, awarded on higher school certificate examination of the Joint Matriculation Board; the Walter Myers Travelling Studentship of £300, offered each alternate year for research work and tenable abroad; the Sands-Cox Scholarship of £42 (an entrance scholarship in the Faculty of Medicine, awarded on higher school certificate examination of the Joint Matriculation Board (July)); four Queen's Scholarships of £10 10s. each, awarded annually at the second (Part II), third, fourth, and final university examinations respectively; one or more Sydenham Scholarships, allotted on entrance to students who are the sons of deceased medical men; the Ingleby Scholarships (two) of £10 for proficiency in midwifery and diseases of women; the Arthur Foxwell Memorial Gold Medal (clinical medicine); the Sampson Gamgee Memorial Medal for surgery (Final M.B.); the Russell Memorial Prize (for examination in nervous diseases, final year); the Priestly Smith Prize in ophthalmology, value about £6 (awarded in the final examination); the Peter Thomson Prize in anatomy (value about £6) for students in their third university year; the Bertram Windle Prize (value about £10) for special work in anatomy; and the John Barritt Melson Gold Medal in Physiology for students in their third university year. The Leith-Newman Prize in Pathology (Medical) (value £10) is awarded annually on students' class Leith-Newman work and professional examination, and a prize (value £5) under similar conditions for dental students. There is also a scholarship of £46 17s. 6d. for students proceeding to a degree in dental surgery. Board of Clinical Studies Prizes are awarded annually as follows: Senior Medical Prize, gold medal; Senior Surgical Prize, gold medal; Midwifery Prize, gold medal; Junior Medical Prize, silver medal; Junior Surgical Prize, silver medal.

Fees.—The composition fee for university classes is £106 5s. This covers all the work required for the degrees of Birmingham and some other universities and for the ordinary qualifications of licensing corporations, but not the additional courses required for the Fellowship of the Royal College of Surgeons of England, the diploma and degrees of the university in State medicine, and some other special work. The total cost for the six years' curriculum, including hospital and examination fees, is £246 0s. 6d. (If first-year science subjects are excluded, £208 15s. 6d.)

Other information should be sought from the Registrar, or the Dean of the Faculty of Medicine, The University, Edmund Street, Birmingham.

Bristol

The school is carried on by the Faculty of Medicine of the University, and provides full instruction for all its degrees and for the diploma in dental surgery.

Clinical Instruction.—The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them more than 700 beds and extensive out-patient departments, special clinics for diseases of women and children, including ante-natal and post-natal work, also for eye, ear, nose, and throat, and skin diseases, in addition to large and well-equipped departments for dental work and large outdoor maternity departments. At each of these institutions there are well-arranged pathological museums, post-mortem rooms, and laboratories for morbid anatomy. There are also laboratories for work in clinical pathology, bacteriology, and biochemistry, in which special instruction is given in these subjects. Departments are provided and well equipped for radiology, radiotherapy, actinotherapy, electrotherapy, and massage, with all forms of physiotherapy. These hospitals include a National Radium Centre. The students of the school also attend the City and County Mental Hospital, the Ham Green Hospital for instruction in fevers and tuberculosis, the practice of the Royal Hospital for Sick Children and Women, containing 120 beds, and that of the Bristol Eye Hospital, with 82 beds. In addition, by the kind permission of the Health Committee of the Bristol City Council, students may attend the clinical practice at Southmead Hospital, and may complete under certain conditions their practical work in obstetrics at that institution, which has 510 beds. The Orthopaedic Hospital at Winford and Stoke Park Colony for Mental Defectives are also available.

Appointments.—(1) Undergraduate: Medical clerkships, surgical dresserships, also ophthalmic, obstetric, pathological, dermatological, ear, nose, and throat clerkships, are tenable at the Bristol Royal Infirmary and the Bristol General Hospital. In these institutions the dressers reside in rotation free of charge. Clerkships are tenable at the Children's Hospital. (2) Postgraduate: at the Bristol Royal Infirmary: four house-surgeons, one casualty house-surgeon, three house-physicians, one resident obstetric officer, one gynaecological and dermatological house-surgeon, one ear, nose, and throat house-surgeon, one assistant house-surgeon (who also acts in the ophthalmic department), one dental house-surgeon, and one unpaid assistant (usually a resident student) to the senior resident medical officer. All these appointments are for six months. Salary in each case at the rate of £60 per annum, with board, apartments, and laundry, except the casualty house-surgeon and the dental house-surgeon, who receive £80

per annum. In each case the salary is increased by £40 per annum if the officer is re-elected for another six months. From the resident medical officers a senior resident medical officer is appointed at a salary of £200 per annum. Clinical assistantships in all departments are open to senior qualified practitioners. At the Bristol General Hospital: senior resident medical officer, £200 per annum; casualty house-surgeon, £100 per annum; two house-physicians, £80 per annum; three house-surgeons, £80 per annum; resident obstetric officer, £80 per annum; house-surgeon to special departments, £80 per annum. All the £80 appointments carry a salary of £100 for residents who have previously held another of them; the dental house-surgeon (non-resident), £300 per annum. All these appointments are for six months, except that of senior resident medical officer, which is for two years. Clinical assistantships in the out-patient departments are also available.

Scholarships.—The following are among the scholarships and other awards open to students of the school: The Miriam Badock of the value of £120, and the H. H. Wills Science Scholarships, open to boys proceeding from Clifton College; the Harold Greenwood Memorial Scholarship of the value of £20, open to boys who have received instruction at State-provided schools in Clevedon (or elsewhere in Somerset) and subsequently at secondary schools in Somerset or Bristol; the Dulverton Scholarship (£100 a year for three years) has been assigned to the Medical Faculty for the year 1938; the Ashworth Hallett Scholarship, value £40, open to women only; two Martyn Memorial Pathological Scholarships of £10 each; the Tibbits Memorial Prize, value 7 guineas, for proficiency in practical surgery; the Committees' Gold and Silver Medals for fifth or sixth-year students for general proficiency; the Augustin Prichard Prize, value about 6 guineas, for proficiency in anatomy; the Henry Clark Prize, value 11 guineas, for proficiency in obstetrics and gynaecology; the Crosby Leonard Prize, value 6 guineas, for proficiency in surgery; the Suple Surgical Prize, a gold medal and 7 guineas; the Suple Medical Prize, a gold medal and 7 guineas; the Henry Marshall Prize, value £12, for dressers; the H. M. Clarke Scholarship, value £15, for proficiency in surgery; the Royal Infirmary Faculty Prize, value £20, for general proficiency; the Sanders Scholarship, value £22 10s., for general proficiency; the Barrett-Roué Scholarship for proficiency in diseases of the eye, ear, nose and throat, value £24, open to men only; Lady Haberfield Scholarship, value about 25 guineas; Bristol and Bath City Scholarships and the Scholarships offered by the counties of Gloucestershire, Somerset, Wilts, Dorset, etc., are tenable in the university.

One or more Fellowships of not less than £100 per annum are allocated by the Colston Research Society for medical research. A Beaverbrook Fellowship, tenable for three years, is open to all members of the university holding a medical qualification. University graduate scholarships are open to graduates of not more than one year's standing. The Michael Hiatt Baker Scholarship of the value of £200 per annum, open to a graduate from New Zealand, may be held in the medical faculty. The Markham Skerritt Memorial Prize is awarded every three years to that member of the university, not a member of the medical board, who, in the opinion of that board, has published the best original work during the three years. The Paul Bush Gold Medal is awarded in alternate years to the best resident medical officer at the Bristol Royal Infirmary.

Fees.—The fee for all the courses required for the medical curriculum, including hospital practice, is 205 guineas, paid by annual instalments.

Further information as to scholarships, courses, and fees can be obtained from the Dean of the Faculty of Medicine, or the Registrar of the University, Bristol.

UNIVERSITY OF DURHAM

The Medical School, King's College, Newcastle-upon-Tyne

(Formerly the University of Durham College of Medicine)

Under the recent statutes for the reconstitution of the University, the former University of Durham College of Medicine becomes the Medical School, King's College, in the neighbouring city of Newcastle-upon-Tyne, and constitutes the Medical School of the Faculty of Medicine of the University of Durham. Its classes and lectures are arranged to meet the requirements of the university in all the degrees granted by the university in the Faculty of Medicine, and also those of the other examining bodies. Hospital practice is carried out at the Royal Victoria Infirmary, a general hospital containing more than 700 beds, where there are facilities for the study of the various special subjects. Students do their practical midwifery at the Princess Mary Maternity Hospital, which contains 90 beds, and has an annual indoor and outdoor attendance on 3,000 cases. In the Heath wing of the school itself there is a gymnasium and a set of rooms for the separate use of the students. The bacteriological department is housed at present in other buildings of King's College.

The Newcastle-upon-Tyne Dental Hospital and Sutherland Dental School is a component part of, and constitutes the dental department in, the Medical School. The dental hospital, erected within the grounds of the Royal Victoria Infirmary and equipped on the best modern lines, was opened in 1931, and it is possible to undertake here the whole of the dental curriculum (that is, systematic lectures, dental and general hospital practice, together with mechanical pupilage). The Dental Board of the United Kingdom recognizes the school for the purpose of granting its bursaries to students who are able to comply with the conditions laid down by the Board.

Postgraduate Instruction.—A comprehensive series of post-graduate courses are arranged to enable practitioners to take advantage of the facilities for laboratory work and clinical study afforded by the College, the Royal Victoria Infirmary, and other associated hospitals; and in order to meet the varied requirements of practitioners there are general and special courses in the winter and summer sessions, as well as an intensive course in the summer vacation. Courses of instruction are given for the B.Hy. and D.P.H.

Students' Union.—A Students' Union has been erected and furnished at a cost of over £54,000, and is in daily use. Separate accommodation (non-residential) is provided for men and women students.

Appointments.—Assistants in the pathological department, eye department, throat and ear department, and department for skin diseases, are elected periodically. Clinical clerks and dressers are appointed every three months. Resident appointments at the Infirmary are made every six months, and each year medical and surgical registrars (who also act as tutors) are appointed from candidates who have previously held resident appointments at any recognized hospital. These latter posts afford an excellent opportunity for postgraduate study, not only at the Infirmary, but also in the departments of anatomy, physiology, pathology, and bacteriology of the College.

Scholarships.—University of Durham Entrance Scholarship, £25 a year for four years; Pears Entrance Scholarship, £40 a year for three years (awarded every third year); Heath Entrance Scholarship (from Kepier Grammar School), £60 (renewable); Province of Durham Masonic (Entrance) Scholarship, £60 (renewable); Heath Scholarship for surgery, £200, available every second year; Rutherford Morison Surgical Scholarship, £180, available every third year.

The following scholarships are tenable for one year—namely: Tulloch Scholarship for elementary biology and organic chemistry, £20; Dickinson Scholarship for medicine, surgery, midwifery, and pathology, £20; Charlton Scholarship for medicine, £25; Gibb Scholarship for pathology, £28; Luke Armstrong Scholarship for B.Hy. and D.P.H. (Part I) examination in bacteriology, £25; Stephen Scott Scholarships for anatomy and physiology, two of £50 each; Philipson Scholarships for highest marks in Final M.B., B.S. examination, two of £45 each; Goyder Memorial Scholarship for clinical medicine and clinical surgery, interest on £325; Hamilton Drummond Memorial Scholarship, in aid of research in clinical surgery, about £50; Gibson Prize for midwifery and diseases of women and children, £10; Turnbull Prize and silver medal for surface anatomy; Outterson Wood Prize for psychological medicine, £10; Sewell Memorial Prize and silver medal for clinical pathology; Sir Thomas Oliver Prize and silver medal for the physiology of food and nutrition; and Ranken Lyle Prize and silver medal for clinical midwifery. Approved applicants may obtain special grants for surgical research from the Stephen Scott Research Fund and Heath Surgical Research Fund; for research in asthma,

etc., from the William Dodds Research Fund; and for research in dental science from the Parker Brewis Dental Research Scholarship Fund.

Fees.—The composition fee for lectures for medical students at the college is £132. Composition fee for hospital practice £46, plus £2 2s. yearly for three years, payable to the Committee of the Royal Victoria Infirmary. For dental students the composition fees amount to £236 for the B.D.S. and to £221 for the L.D.S., covering all systematic lectures and laboratory work at the College, general and dental hospital practice, and mechanical pupilage. Other information should be sought from the Dean, the Medical School, King's College, Northumberland Road, Newcastle-upon-Tyne.

Leeds

The School of Medicine—which is open to both male and female students—in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in immediate proximity to the General Infirmary, where students sufficiently advanced receive their clinical instruction. The main buildings, opened in 1894, contain excellent dissecting rooms, well-arranged laboratories for physiology, lecture theatres, and classrooms. In addition, there is a well-equipped library and reading room and a museum of anatomy. The comfort of the students is secured by means of common rooms and a refectory. Extensions of the medical school buildings were opened in October, 1930, and the Algernon Firth Institute of Pathology in April, 1933. This last houses the Departments of Pathology and Bacteriology, and Experimental Pathology and Cancer Research, including the Charles Brotherton Pathological Museum. The General Infirmary has 628 beds, and includes ophthalmic and children's wards, a large out-patient department, and the Ida and Robert Arthington Semi-convalescent Hospitals, Cookridge. The West Riding Mental Hospital at Wakefield is available for the study of mental diseases. Students also attend the practice of the Hospital for Women and the Leeds Maternity Hospital, and may attend also at the Leeds Public Dispensary.

Appointments.—Physicians' clerks and surgical dressers are appointed every six months; clerks in the children's department, orthopaedic dressers, ophthalmic and aural dressers, gynaecological ward clerks, maternity clerks, assistant physicians' clerk, dermatological clerks, assistant surgeons' dressers, dressers in the casualty rooms, junior and senior post-mortem clerks, laboratory assistants and dressers in the venereal clinic every three months. After graduation a considerable number of resident and other appointments become available in the Leeds General Infirmary, Leeds Public Dispensary, Hospital for Women and Children, West Riding Mental Hospital, etc., occupying periods of from six to twelve months at rates varying from £20 to £150 per annum.

Scholarships.—The university awards annually on the results of the first examination a scholarship in the form of free admission to the lectures and classes given in the School of Medicine. The university also awards a scholarship on the results of the second examination, of the value of £68, in the form of free admission to the clinical teaching of the Infirmary.

Fees.—It is estimated by the authorities that the approximate cost of medical education to a student in this university is £370, plus, of course, the expenses of living during the five and a half years covered by the curriculum. The composition fee for the course for the first, second, and third examinations, and for the clinical work at the Infirmary, is £242. The composition and clinical fee for those who have passed the second examination is £153.

Further information can be obtained from the Academic Sub-Dean or Clinical Sub-Dean, School of Medicine, Leeds.

Liverpool

The Medical Faculty is part of the university, and all the laboratories and other rooms are well equipped for the instruction of students proceeding to medical degrees and diplomas, and are situated close to one another. Clinical instruction is provided at the following hospitals: the Liverpool Royal Infirmary, the David Lewis Northern Hospital, the Liverpool Royal Southern Hospital, the Liverpool Stanley Hospital, the Royal Liverpool Children's Hospital, the Women's Hospital, the Liverpool Maternity Hospital, the Eye, Ear, and Throat Infirmary, St. Paul's Eye Hospital, and certain municipal hospitals.

Manchester

The staff of the Medical School in this city constitutes the Medical Faculty of the Victoria University, all the arrangements for the instruction of students, both in their earlier and their later studies, being of an elaborate nature. The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains 586 beds, and has associated with it a large convalescent home (136 beds) and a Central Branch Hospital (5 beds). The courses in mental diseases are taken in the County Mental Hospitals at Prestwich and Macclesfield. Instruction in practical gynaecology and midwifery is given at the Royal Infirmary and the St. Mary's Hospitals.

Clinical Work.—The Royal Eye Hospital, the Hospital for Diseases of the Skin, the Manchester Northern Hospital for Women and Children, the well-known Hospitals for Children at Pendlebury and St. Mary's Hospitals for Women and Children, the Manchester Hospital for Diseases of the Ear, Monsall Fever Hospital, the Christie Cancer Hospital and Holt Radium Institute, the Hospital for Consumption and Diseases of the Throat and Chest, the Ancoats Hospital, the Salford Royal Hospital and the Hospital for Babies, all make arrangements for the instruction of students.

Appointments.—The following are among the appointments open to past and present students of this school in connexion with its arrangements for clinical tuition: two pathological registrars, at £100 and £50 per annum; one medical registrar at £150; a cardiographic registrar, at £150; a director of the clinical laboratory at £400, and two assistants at £350 and £300; four chief assistants to medical units, each at £300; four chief assistants to surgical units, £250; chief assistant to neuro-surgical service, £350; chief assistant to orthopaedic department, £250; clinical tutor to orthopaedics, £35; medical registrar to out-patient department, £150; assistant surgical officers, aural department at £35; seven anaesthetists from £75 to £125 each; three anaesthetists at central branch, £25 to £100; one resident medical officer, one year, £200; one resident clinical pathologist, £100; one resident surgical officer, one year, £200; senior house-surgeon for central branch, £150; one resident casualty officer, £150; one resident medical officer at the Convalescent Hospital at Cheadle, £250; two assistant medical officers to radiological department, £400 and £200; medical officers, physiotherapeutic department, £150; assistant medical officer, £100; chief assistant, gynaecological department, £70; assistant to the dermatological department, £35; two medical officers, out-patient department, each £105; sixteen assistant surgical officers to dental department, £35; four technical assistants for laboratory work, £200; clinical assistant to aural out-patient department, £35; twelve house-surgeons and eight house-physicians, appointed during the year for periods of six months, at a salary of £50 per annum. Resident officers are appointed to the gynaecological, the eye, and the ear and throat departments every three months. Clinical clerks and surgical dressers are appointed to the various departments of the hospital every three months. Non-resident clinical assistantships for qualified medical men and women, tenable for six months, at an honorarium of £35.

Entrance and other Scholarships.—The following are among the scholarships obtainable by students of the school: Rogers and Seaton Scholarships in Arts (in alternate years), £40 per annum, tenable for two years. Three Hulme Scholarships, tenable for three years, of £35, one being awarded annually for proficiency in subjects of general education. Two James Gaskill Scholarships of £35, tenable for two years, one being awarded annually for proficiency in the branches of mechanics and chemistry. A Dora Muir Scholarship, £30 per annum, tenable for three years, and open to the competition of women students only. This is awarded triennially. Sir J. P. Kay-Shuttleworth Scholarship, £30 per annum, tenable for three years, awarded triennially, open to the competition of scholars from Sedbergh School, Giggleswick School, and Burnley Grammar School; subjects—mathematics, chemistry, and

mechanics. Dreschfeld Memorial Scholarship, value £20, tenable for two years and awarded triennially on the result of the Entrance Examination. John Russell Medical Entrance Scholarship, awarded annually, value £45. Two Dauntesey Junior Medical Scholarships, value £50 each, tenable for one year, for candidates who have not commenced the second year of study leading to a medical qualification; subjects—chemistry, physics, botany, and zoology. One Dauntesey Senior Medical Scholarship, £50 for one year, awarded on results of Second M.B. Examination. Two Entrance Scholarships in medicine, value 160 guineas, awarded annually for proficiency in arts or science respectively. Tom Jones Exhibition in anatomy, £25, offered annually. A Robert Platt Physiological Scholarship of £90, tenable for one year. A Leech Fellowship of £100 for original research after graduation. A Graduate Research Scholarship in medicine, value £70, tenable for one year, awarded annually for proficiency shown at Final M.B. Examination. Two Dumville Surgical Prizes, each value £15, awarded annually at graduation. The Tom Jones Memorial Surgical Fellowship, value £105, tenable for one year, usually awarded annually. The Turner Medical Prizes, value 10 guineas each, awarded annually for proficiency in certain subjects of the Final M.B., Ch.B. Examination. The John Henry Agnew Prize of £30, awarded annually for proficiency in the diseases of children. The Ashby Memorial Scholarship, tenable for one year (£100), for research in the diseases of children; offered triennially, Sidney Renshaw Prizes in physiology: offered annually (£10 and £20). Wild prize in pharmacology (£10). The John Henry Agnew Fellowship in diseases of children, £120, offered triennially. Eliza Marple Holt Postgraduate Medical Scholarship for Women, £60 for one year, offered biennially. The details and regulations of the Dickinson Scholarships—(1) for anatomy, (2) for pathology, (3) Research Scholarship in surgery, and (4) Travelling Scholarship in medicine—may be obtained from the Secretary to the Trustees. The Morrison Watson Fellowship for research in anatomy is offered annually, value £150; also the Sheridan Delepine Fellowship in preventive medicine, value £300, is offered biennially. The Sam Gamble Scholarships—the trustees are prepared to award four scholarships of not more than £40 per annum, to women students who have passed the First M.B. Examination; the conditions can be obtained from the Registrar. The Knight Fellowship of £150, offered triennially for the encouragement of the study of factors concerned in the development of the symptoms of mental disturbance —*open to competition of graduates of this or any approved* university. Pilkington Fellowship in Cancer research £300 for one year.

Fees.—The composition fee for the university course in medicine is 114 guineas, payable in four instalments of 28½ guineas, but this sum does not include the fee to cover the work required for the First M.B. Examination. This is £42, payable in one sum. Hospital fees are additional, and usually amount to about 90 guineas.

A prospectus and further information about the school and scholarships may be obtained from the Registrar.

Sheffield

In this city the Medical School is one of the departments of the university, being conducted and controlled by its Medical Faculty, and occupying practically the entire north wing of the quadrangle of the university buildings overlooking Weston Park. The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely, chemistry, physics, biology, anatomy, and physiology—are, both as regards structural arrangement and scientific equipment, on the most modern and complete lines.

For students of pathology and bacteriology there are laboratories replete with everything necessary for the most advanced work, and a large pathological museum, which is open daily. In addition, there is a large library and reading room. There are a number of recreation, athletic, and other societies, all under the management of an annually elected students' representative council, and large and comfortable common rooms for both men and women students. Thanks to the generosity of Alderman J. G. Graves there is a new and well-equipped Union building in close proximity to the university which affords ample facilities for the various student social activities.

There is ample hostel accommodation for both men and women students. In the university and in the Union buildings there are refectories open to all students of the school. A university journal is published each term, and the Medical School also publishes a journal. The ordinary clinical work of the school is done at the Royal Infirmary and Royal Hospital, which have amalgamated for the purpose of clinical instruction, and provide over 800 beds for medical, surgical, and special cases, including diseases of the eye.

In addition, the Royal Infirmary has special departments for the treatment of diseases of the skin and ear, with beds assigned to them; whilst at the Royal Hospital there are special out-patient departments for diseases of the throat, ear, skin, orthopaedics, and mental diseases. The medical and surgical staffs attend daily, and give clinical instruction in the wards and out-patient rooms. Clinical lectures in medicine and surgery are given weekly. Instruction in the practical administration of anaesthetics is given at either institution by the anaesthetists, and the post-mortem examinations at both institutions are in charge of the Professor of Pathology, and afford ample material for study of this subject. Students are able to attend the practice of the Jessop Hospital for Diseases of Women and the Hospital for Sick Children, while special courses on fevers are given at the City Fever Hospital, and on mental diseases at the South Yorkshire Mental Hospital.

Appointments.—The following appointments are open to all students who have passed their examinations in anatomy and physiology: (1) casualty dresserships, (2) surgical dresserships, (3) medical clerkships, (4) pathological clerkships, (5) ophthalmic clerkships, (6) clerk to the skin department, etc. These appointments are made for three months, commencing on the first day of October, January, April, and July.

Scholarships.—Entrance Medical Scholarship, covering cost of tuition fees for a degree course in the Faculty of Medicine, open to both sexes. Six Edgar Allen Scholarships of £100 a year for three years may be held by students taking the degree course in medicine. Two Town Trustees Scholarships, each of the value of £50 a year, tenable for three years, for boys or girls who have been educated in a Sheffield secondary school for a period not less than two years immediately preceding the examination. Four Town Trustees Scholarships, value £50 a year, for boys or girls under 19 years of age educated in any school in Sheffield, secondary or otherwise. Town Trustees' Fellowship, value £75, tenable for one year. Mechanics' Institute Scholarship, value £50 (with remission of fees), tenable for one year, and renewable for a second year. The Frederick Clifford Scholarship, value about £50, tenable for two years, Kaye Scholarship, value £60, for proficiency in anatomy and physiology. Gold and bronze medals are also awarded for proficiency in various subjects.

Fees.—Students in the Faculty taking their complete medical course in the university pay an inclusive composition fee of £42 for each of the first five years and £28 for the sixth year. The composition fees for the dental courses are as follows: for B.D.S., first and third years, £80; second, fourth, and fifth years, £30; for L.D.S., first and second years, £80; third and fourth years, £30. The fees for special courses taken separately can be ascertained by inquiry of the Dean.

Welsh National School of Medicine

The next session opens on October 5. All classes are open to both men and women students. Particulars relating to the admission of students can be obtained on application to the Provost, or to the Secretary, Welsh National School of Medicine, the Parade, Cardiff. (See further details under University of Wales (p. 456.)

SCOTLAND

As will be gathered from the following paragraphs, the facilities for acquiring a medical education in Scotland are very ample, whether the student be proceeding to a university degree or to a diploma. To the descriptions of the different Scottish medical centres is in some cases added an account of hospitals which either play an official part in the education given to students as yet unqualified, or offer valuable opportunities for postgraduation work.

Aberdeen

The school is conducted by the Faculty of Medicine. This comprises twelve chairs, from which instruction is given in all the main branches of medical science—namely, biology, physics, chemistry, anatomy, physiology, materia medica, pathology, bacteriology, surgery, medicine, and midwifery. Courses of instruction in forensic medicine, public health and infectious diseases, tropical medicine, medical ethics, tuberculosis, and clinical methods are conducted by lecturers appointed by the University Court. Special opportunities for practical instruction are afforded in the laboratories and museums attached to the departments.

Clinical instruction is obtained in the Royal Infirmary, the Royal Mental Hospital, the Sick Children's Hospital, the City Fever Hospital, the General Dispensary, Maternity, and Vaccine Institution, and the Ophthalmic Institution. Courses of practical instruction are given in diseases of children at the Sick Children's Hospital; in fevers at the City Fever Hospital; in mental diseases at the Royal Mental Hospital; in diseases of the ear, nose, and throat at the Infirmary and Dispensary; in diseases of the eye at the Infirmary and Eye Institution; in venereal diseases and diseases of the skin at the Royal Infirmary.

The degrees granted in medicine are: Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.). A diploma in public health is conferred after examination on graduates in medicine of any university of the United Kingdom. The degree of Ph.D. is also granted in this faculty.

Fees.—An inclusive fee of 126 guineas is payable for instruction within the university, and the fee for the degrees of M.B., Ch.B. is 33 guineas. The total cost, including hospital fees, class and matriculation fees, and degree fees, is about £240.

Bursaries, scholarships, and fellowships, to the number of fifty, and of the annual value of £1,200, may be held by students of medicine in this university. The bursaries range in value from £10 to £50 per annum, and are tenable for periods from one to five years.

Edinburgh

There are two Schools of Medicine: the School of the University, and the School of Medicine of the Royal Colleges of Physicians and Surgeons of Edinburgh.

THE UNIVERSITY SCHOOL.—This school, in addition to other resources of the university, has the following means of affording practical instruction: Royal Botanic Garden, Herbarium, and Museum; zoological laboratory and museum of science and art; physical laboratory; chemical laboratories; dissecting room, bone room, and anatomical museum; physiological laboratory; medical jurisprudence laboratories; John Usher Institute of Public Health; materia medica museum and laboratory; post-mortem department of the Royal Infirmary and University Pathological and Bacteriological Laboratory; tutorial classes of practice of physic, of clinical medicine, and clinical surgery, surgery and midwifery; and the practice of certain other hospitals.

Fees.—The sessional fee for chemistry, anatomy lectures, physiology, pathology, materia medica, surgery, medicine, and midwifery is £6 6s. each. Physics, botany, zoology, forensic medicine, and public health, £5 5s. Practical zoology, practical anatomy (summer), morbid anatomy, practical materia medica, mental diseases, practical pathology, clinical midwifery, and medical entomology and parasitology, £4 4s. Experimental physiology, diseases of tropical climates, practical botany, histology, child life and health, operative surgery, clinical surgery (per term), and clinical medicine (per term), £3 3s. Practical anatomy (winter), £6 16s. 6d. Practical chemistry, £4 14s. 6d., chemical physiology, surgical pathology, and infectious diseases, £1 11s. 6d. Tuberculosis, diseases of the eye, diseases of the larynx, ear, and nose, diseases of the skin, and venereal diseases, £2 12s. 6d. Advanced bacteriology, £7 17s. 6d. Clinical gynaecology, regional anatomy, and applied anatomy, £2 2s.

Scholarships.—There are many funds for the assistance of students by means of bursaries, scholarships, exhibitions, and money awards from the beginning to the end of their undergraduate career. In addition, there are funds which help those who have taken a first degree in medicine and surgery to continue at work as research students. The value of these awards, and the conditions attaching to them, are so varied that those interested should consult the prospectus of the school itself.

THE SCHOOL OF MEDICINE OF THE ROYAL COLLEGES.—This school is composed of Lecturers licensed by the Royal College of Physicians and the Royal College of Surgeons and in most cases also recognized by the University of Edinburgh through their *licentia docendi*; for the sake of convenience they lecture in separate buildings near to the Royal Infirmary, but form a single body governed by a Board elected by the Royal Colleges of Physicians and Surgeons and by the Lecturers. This Board, with the assistance of the standing committees of the School, supervises the whole management and especially the maintenance of the efficiency and discipline of the school. The buildings at present utilized for the purposes of lecturing are the following: (1) Surgeons' Hall, Nicolson Street; (2) New School, Bristo Street; (3) Dental Hospital, Chambers Street. Clinical classes are held in the Royal Infirmary, Royal Maternity Hospital, and other institutions. The teaching is similar to that of the Scottish universities, and the students receive similar certificates at the close of each session. The courses on the special subjects are also conducted by teachers specially qualified in each branch. The fees payable for class and other instruction, and including the sums payable before admission to the examinations of the Conjoint Board for the Triple Qualification, amount to about £180. The Calendar, giving full information regarding classes and fees, can be obtained (price 1s. post free) on application to the Dean of the School, Surgeons' Hall, Edinburgh.

Glasgow

The whole course of study required for graduation (M.B., Ch.B.) at the University of Glasgow can be taken here. Besides ample provision for lectures there is practical and clinical work at the hospitals, and practical courses are conducted in the laboratories of the following departments: pathology, public health, pharmacology, physiology, surgery, anatomy, chemistry, zoology, physics, and botany; the Botanic Garden and the Hunterian Museum are also open to students. Well-equipped buildings have been provided for zoology, practical anatomy, and operative surgery, as well as for pathology. The classrooms and laboratories for the departments of botany, physics, physiology, pharmacology, materia medica, medical jurisprudence, and public health are also of recent erection, and are elaborately equipped. In addition to the regius chairs and the chair of pathology at the university, there are the chairs of medicine, surgery, obstetrics, and pathology at the Royal Infirmary; and a number of university lectureships in clinical medicine, clinical surgery, venereal diseases, laryngology, dermatology, otology, psychological medicine, tuberculosis, pathological biochemistry, and medical radiology have been founded there. Other chairs have been founded at the university in bacteriology, organic chemistry, physiological chemistry, applied physics, public health, paediatrics, and ophthalmology. There are also lectureships on the surgical and medical diseases of children and on medical radiology. The university, in short, has made great and successful efforts to extend and improve the accommodation of the medical departments, to strengthen the teaching staff, and to encourage postgraduation and research work. A diploma in public health is now also granted. Three very extensive general hospitals in the city afford exceptional opportunities for clinical instruction—namely, the Western

Infirmary (600 beds), near the university, to which the Regius Professors are attached; the Royal Infirmary (824 beds); and the Victoria Infirmary (380 beds); while the Royal Mental Hospital, Gartnavel (500 beds), the Royal Hospital for Sick Children (350 cots), the Royal Maternity and Women's Hospital (114 beds), the Glasgow Eye Infirmary (100 beds), the Ophthalmic Institution (35 beds), the fever hospitals at Belvidere (680 beds), Ruchill (540 beds), and Mearnskirk, and other institutions afford facilities for the practical study of special branches. The large general hospitals of the town council are now also available for clinical instruction in medicine and surgery. Information regarding postgraduate study will be found at page 487.

Bursaries.—Bursaries confined to the Medical Faculty amount in annual value to about £1,250, while bursaries in any faculty, amounting to about the same annual sum, may be held by students of medicine, a number of both sets being open to women. Postgraduate scholarships approximate in value to £3,500 per annum.

The following bursaries are open for competition to students entering on their first session of attendance in the Faculty of Medicine: Davidson Bursary, annual value £40, tenable for four years, for students who propose before entering the Faculty of Medicine to take the degree of B.Sc. in pure science, including in their curricula anatomy and physiology. Highland Society (Glasgow) Bursaries, annual value £25 each, tenable for five years, for students of Highland descent, open to women; two bursaries vacant each year. Logan Bursary, annual value £25, tenable for four years, open to women. Robina Eckford MacBrayne Scholarship, annual value £50, tenable for three years. Marshall Bursary, annual value £24, tenable for four years. Merchants' House Bursary, annual value £35, tenable for four years, open to women. John Oliphant Bursary, annual value £35, tenable for six years. James A. Paterson Bursaries, three each year of the annual value of £30, £25, and £15 respectively, each tenable for four years; students entering their second session are also eligible; open to women; examination in mathematics and natural philosophy.

Candidates for the bursaries mentioned above must take the university general bursary competition, which is held each year in the month of June.

In addition, the following bursaries, scholarships, and prizes are open to students prosecuting their studies in the Faculty of Medicine: Arbroath Bursary, annual value £35, tenable for three years, is awarded by the Senate, on the recommendation of the Faculty of Medicine, to the student who is of the highest merit among the candidates as shown by their class records and their performances in the First and Second Professional Examinations. Arthur Bursary, annual value £20, tenable for three years, awarded to the *woman* candidate who takes the highest place at the First Professional Examination. Bell Bursaries, annual value £50 each, tenable for the duration of the course, for students who have gone through the curriculum in arts; tenable also in theology or law. Brisbane Bursary, annual value £50, tenable for four years; candidates must be under 22 years of age, and must have taken the degree of M.A. John Buchanan Bursary, £80 for two years, awarded at beginning of third year on the results of the First Professional Examination, plus a modern language taken in the general bursary competition. William Gardiner Bursary, annual value £18, tenable for two years, awarded on results of the First and Second Professional Examinations in the subjects of physiology, chemistry, and physics. Dr. Thomas Gibson Bursary, annual value £50, tenable for four years; open to medical students entering on their second winter who are preparing for service as medical missionaries. Johnston Bursaries, annual value £25 each, tenable for three years, for eminence in the work and examinations of the first and second years of the curriculum. Lorimer Bursaries (six), value £20 each, tenable for one year, are awarded to the best students in each of the following classes: botany, zoology, physics, chemistry, anatomy, physiology. Macarthur Bursary, of the annual value of £20 and tenable for two years, for students entering on their fourth session of medical study. Macfarlane Bursary, annual value £40, tenable for three years, for students who have attended the first session of their professional study in the university; examination in elementary anatomy, elementary chemistry, and botany. Mackintosh Bursary, value £31, tenable for one year, open to medical students of either sex who have attended one of the courses of lectures on insanity in the university; examination in that subject. John Monteith Bursary, annual value £21, tenable for two years, is awarded annually to the student who gains the highest number of marks in the subjects of anatomy and physiology at the professional examinations held during the previous year. Rainy Bursary, annual value £50, tenable for two years, for students entering on their third session of medical study; awarded to the candidate whose aggregate of marks in the subjects of anatomy and physiology of the Second Professional Examination, and in chemistry, botany, and zoology of the First Professional Examination, is the highest. A. and B. Stewart Postgraduate Bursaries, annual value £50 each, tenable for the duration of the course, for students who have gone through the arts curriculum. Walton Bursary, annual value £40, tenable for four years; the Earl of Sandwich has the right of appointing to the bursary one of two students nominated by the Senate. Weir Bursary, value £25, tenable for one year, awarded on the results of the Second and Third Professional Examinations. Barbour Scholarship in anatomy or physiology, annual value £250, tenable for two years. Joseph Coats Memorial Scholarship, value £85, tenable for one year, for research in pathology, may be held concurrently with the Perman Memorial Scholarship (q.v.). Faulds Fellowship, annual value £250, tenable for three years, for medical research. Foulis Memorial Scholarship in pathology, value £50. Hall Tutorial Fellowships approximately £250 for one year. Four McCunn Medical Research Scholarships, value £200 each, tenable for one year. Perman Memorial Scholarship, value £85, tenable for one year, for research in pathology, may be held concurrently with the Joseph Coats Memorial Scholarship (q.v.). Henderson Research Scholarship, of about £250 per annum, for research in mental diseases. Hutchison Research Scholarship, of the annual value of £110, for research in certain subjects in the medical curriculum. Reid Stewart Postgraduate Bursary, £200 for one year, for special study and research; renewable. Mary Margaret Isabel Ure Scholarship, of the annual value of about £300, for research in cancer or tuberculosis or other branch of study approved by the Faculty of Medicine. John Reid Prize, of £25, for the best original research conducted in one or more of the hospitals or scientific laboratories in Glasgow, bearing on any department of medical science. History of Medicine Prize, of about £50, for the best essay on some subject in the history of the science or practice of medicine, other than a subject of recent development in some limited branch thereof. Harry Stewart Hutchison Prize, value £50, for original research work relating to children. The Junior Arnott Prize of about £15; the Senior Arnott Prize of £25. Three Bellahouston Gold Medals. The Brunton Memorial Prize of about £20. The Macewen Medal in surgery. The Captain H. S. Ranken V.C. Memorial Prize of £5. The Straits Settlements Gold Medal. The West of Scotland R.A.M.C. Memorial Prize of about £15. Asher Asher Memorial Gold Medal, awarded annually in connexion with the class on diseases of the throat and nose. Macfarlane Prizes of £10 each, in each of the classes of medicine. Macleod Medal, awarded annually to the most distinguished student, man or woman, in the class of systematic surgery taught by the Regius Professor. Struthers Gold Medal, awarded in anatomy for the best original research or for the best special dissection or preparation or series of dissections or preparations.

The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the university ordinary class fees of students of Scottish birth or extraction, under conditions given in the University Calendar. Scholarships and Fellowships are offered by the Carnegie Trust in science and medicine for postgraduation study.

Fees.—The matriculation fee for each year is £2 12s. 6d. In most cases the fee for each university class is £6 6s., but in some cases it is £4 4s. For hospital attendance at the Western Infirmary students pay £12 12s. for a perpetual ticket, or £1 11s. 6d. for a single term ticket, with an additional fee of £5 5s. for each winter and £2 12s. 6d. per term for each clinical course. The fees are the same at the Royal Infirmary. The university fees for the four professional examinations total £34 13s. For the whole curriculum the fees for matriculation, class attendance, hospital attendance, and professional examinations amount to about £250.

For further information apply to the Registrar, Glasgow University.

ST. MUNGO'S COLLEGE.—This is the Medical School of the Royal Infirmary, which is the largest general hospital in Glasgow. The Infirmary is situated in Cathedral Square, Castle Street, and has car communication with

every part of the city. St. Mungo's College is in the Infirmary grounds, and affords full courses in all the subjects of the medical curriculum, and in all the medical subjects of the dental curriculum.

The Infirmary has (including the ophthalmic department) 794 beds—554 for surgical and 240 for medical cases. There are special beds and wards for diseases of women, of the throat, nose, and ear, burns, and septic cases. In the out-patient department in 1936 119,914 patients were treated. In addition to the large medical and surgical departments, there are departments for special diseases—namely, diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. There is also a fully equipped electrical pavilion, with the latest and most improved apparatus for diagnosis and treatment.

Appointments.—Five house-physicians and eleven house-surgeons, who must be fully qualified, are appointed every six months, and board in the hospital free of charge. Clerks and dressers are appointed by the physicians and surgeons. As many cases of acute diseases and accidents of a varied character are received, these appointments are very valuable.

Fees.—The average class fee is £3 3s. for summer classes and £4 4s. for winter classes. The fees for all the lectures, practical classes, and hospital attendance necessary for candidates for the diplomas of the English or Scottish Colleges of Physicians and Surgeons amount to about £120. The classes are open to male and female students.

A syllabus of classes can be obtained on application to the Secretary to the Medical Faculty, St. Mungo's College, 86, Castle Street.

THE ANDERSON COLLEGE OF MEDICINE.—This school provides education in the subjects of the curriculum for both medical and dental students. The school buildings are situated in Dumbarton Road, immediately to the west of the University and Western Infirmary. The hospital practice and clinical lectures are provided in the Western or Royal Infirmary; pathology in the Western or Royal Infirmary; vaccination and dispensary practice in the Western or Royal Infirmary Dispensary. These classes are recognized by all the licensing corporations in the United Kingdom, also by the Universities of London, Glasgow, and Edinburgh (the latter two under certain conditions stated in the School Calendar).

Fees.—The fees for the lectures and practical work required by ordinary students range between 2 and 6 guineas a class. The Carnegie Trust pays the fees of students at Anderson College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

A Calendar will be sent on receipt of a postcard by the Secretary to the Medical Faculty, the Anderson College of Medicine, Glasgow, W.1, who will forward any further information which may be desired.

The Royal Samaritan Hospital for Women, Glasgow, has 190 beds, of which 30 are for paying patients of limited means, and offers excellent facilities for clinical instruction in the diseases peculiar to women. A new radiological department, with the most modern apparatus for treatment, was recently opened. Lectures and clinical demonstrations are given by members of the surgical staff. There is a complete course each university term for university students and one course in the summer term for college students. A postgraduate course is held during the summer months and a series of demonstrations for general practitioners is carried out in the winter. The hospital is represented on the Board of the Glasgow Postgraduate Medical Association formed for co-ordinating postgraduate medical teaching. The Royal Samaritan lectureship in gynaecology is a university lectureship associated with the hospital.

St. Andrews and Dundee

The medical departments in these two teaching centres cater specially for students proceeding to the degrees of the University of St. Andrews, but admit other students as well. In the former city the United College provides education in all subjects for the first two years. In Dundee, University College provides for the needs of students from the beginning to the end of the five years' curriculum. Its buildings are modern, and contain fully equipped laboratories. The clinical work of the school is facilitated by various institutions. The class fees are from £6 6s. to £5 12s. 6d. for systematic classes, and from £4 14s. 6d. to £4 4s. for practical classes. The hospital ticket is £1 8s. for three months, £4 4s. a year, or perpetual, £13 6s. 8d. in one sum. The inclusive or composition fee for the curriculum is £182. In connexion with both institutions there are bursaries and scholarships of considerable value, which are awarded after competitive examination. Information as to these can be obtained from the Secretary of the University of St. Andrews. Information regarding the clinical facilities may be obtained from the Dean of the Medical Faculty, Medical School, Dundee.

CLINICAL WORK

Good opportunities for clinical work are afforded by the Dundee Royal Infirmary and Maryfield Hospital, the instruction given thereat being recognized for purposes of graduation by all the Scottish universities, the University of Cambridge, the University of London, the National University of Ireland, and by the Royal Colleges of England and Scotland.

IRELAND

There is a choice of six schools for those pursuing their medical studies in Ireland. For clinical instruction the choice is equally wide and varied, though the hospitals themselves are comparatively small. Some account of the schools follows.

Dublin

SCHOOL OF PHYSIC

This school is in Trinity College, Dublin, and is carried on under the joint auspices of the University of Dublin and of the Royal College of Physicians of Ireland, the King's professors of institutes of medicine (physiology), practice of medicine, materia medica, and midwifery being appointed by the latter. Clinical instruction is given at Sir Patrick Dun's Hospital, and some twelve other metropolitan hospitals and asylums are recognized by the Board of Trinity College. The courses of instruction are open to all medical students, whether they belong to the university or not.

THE SCHOOLS OF SURGERY

These are schools carried on in Dublin under the supervision and control of the Council of the Royal College of Surgeons. They are formed of the college's own school, combined with two famous old medical schools—Carmichael and Ledwich; they are attached to the college by charter. The buildings contain spacious dissecting rooms, special pathological, bacteriological, and chemical laboratories. Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the college.

Prizes.—Among the prizes annually awarded are: The Barker Anatomical Prize (£26 5s.); the Carmichael Scholarship (£15); the Mayne Scholarship (£8); the Gold Medal in surgery; the Stoney Memorial Gold Medal in anatomy; the H. Macnaughton Jones Gold Medal for midwifery and gynaecology; the Captain Massey Miles Memorial Prize; class prizes, accompanied by silver medals, will also be given in each subject.

A prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin.

UNIVERSITY COLLEGE, DUBLIN

This is one of the constituent colleges of the National University of Ireland. The arrangements for the teaching of medical students from beginning to end of the curriculum are adequate. Applications for information may be addressed to the Secretary and Bursar, University College, Dublin.

CLINICAL TEACHING IN DUBLIN

Two other important obstetric and gynaecological hospitals in Dublin are the Coombe Lying-in Hospital and the National Maternity Hospital. During the year 1934 the number of cases dealt with in the Coombe Lying-in Hospital were as follows: intern maternity department, total admissions 1,504, total deliveries in hospital 1,254; extern maternity, 1,491 deliveries; gynaecological department, admissions 517. Attendance at pre-natal clinic, baby, and general dispensaries 12,000 cases yearly. The practice of these hospitals is attended by large numbers of students, postgraduates, and nurses, who come from all parts of the world.

There are numerous well-arranged hospitals in and around the city, and almost all of these are recognized for teaching purposes by the Conjoint Board of Ireland, the University of Dublin, the National University of Ireland, and by like bodies elsewhere in the British Isles. Among them are the Mater Misericordiae Hospital, with 345 beds; Dr. Steevens' Hospital at Kingsbridge, with 150; Meath Hospital and County Dublin Infirmary, with 160; Mercer's Hospital with 120; the Royal City of Dublin Hospital, with 124; the Adelaide Hospital, with 160; the Royal Victoria Eye and Ear Hospital, with 100; Sir Patrick Dun's Hospital, which has a direct connexion with the School of Physic, with 129 beds; and the combined institutions formed by the Hardwicke Fever Hospital, the Richmond Surgical Hospital, and the Whitworth Medical Hospital, with an aggregate of 330 beds. Other hospitals are: the Children's Hospital, Temple Street, with 125 beds; the National Children's Hospital, with 53 beds; St. Ulten's Infants' Hospital, with 52 beds; St. Mary's Orthopaedic Hospital at Cappagh, with 236 beds; and St. Anne's Skin and Cancer Hospital, with 60 beds.

As for the famous Dublin medical institution known as the Rotunda Hospital, this practically consists of two distinct hospitals, and it is believed to be the largest combined maternity and gynaecological hospital in the British Isles. There are pre-natal and paediatric departments, as well as a thoroughly equipped pathological laboratory, biochemical laboratory, and x-ray apparatus. It possesses residential quarters for students, accommodating over fifty, and, taken as a whole, offers exceptional opportunities for study, both to ordinary students and to medical graduates of any nationality. During the year ending October 31, 1934, there were 3,173 maternity admissions. Including patients treated in their homes, the Rotunda dealt with 5,372 cases during the year, of which 4,688 were delivered. In the gynaecological department there were 687 admissions, of which 553 were operated upon. The attendances at the out-patient department totalled 20,736. Extensive alterations and additions to the hospital are being undertaken.

The National Maternity Hospital is now housed in new buildings. This hospital is of the most modern and up-to-date type, both in lay-out and in equipment. It contains many novel and original features, and much of the equipment and furniture has been specially designed. It is run entirely on electricity, no other fuel being used. At present it consists of accommodation for some eighty-five patients, together with all central services and excellent accommodation for students and staff. This new building was opened for the admission of patients on January 1, 1935. The old hospital has been abandoned, and is being demolished to make room for the building of the final wing of the new hospital to accommodate sixty-five additional beds. During the year 1934 the hospital dealt with 2,367 maternity cases, of which 2,019 were delivered. In the gynaecological department 351 patients were admitted. The attendances at the out-patient department were 7,842. Clinical instruction is given daily.

Belfast

The Medical School is part of the Faculty of Medicine of Queen's University, Belfast, and provides a complete medical curriculum for all purposes. The laboratories in the departments of bacteriology, biochemistry, biology, chemistry, physiology, pathology, public health, anatomy, physics, and materia medica are all excellent. and there is a students' union which gives students the advantages of dining rooms, reading rooms, a library, and various recreation rooms. Women are eligible as students. Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 500 beds, of which 64 are in the Royal Maternity Hospital, and the Mater Infirmorum Hospital, which has 150 beds. Other hospitals open to the students of the university are: the Ulster Hospital for Women and Children; the Hospital for Sick Children; the Ophthalmic Hospital; the Benn Ulster Eye, Ear and Throat Hospital; the Union Infirmary and Fever Hospital; the Fever Hospital, Purdysburn; the District Lunatic Asylum; the Samaritan Hospital; the Forster Green Hospital for Diseases of the Chest; and the Belfast Hospital for Skin Diseases.

Scholarships.—(1) Eight, of the value of £40 each, are assigned as Entrance Scholarships in the Faculties of Arts, Science, and Medicine, tenable for one year; (2) fourteen Professional Scholarships, value from £15 to £40 each; (3) one Hutchinson Stewart Scholarship, £12, in mental diseases; (4) one Mackay Wilson Travelling Scholarship, £100, awarded triennially (next award, 1939); (5) Isabella Tod Memorial Scholarship, tenable for three years, awarded triennially to a woman student; (6) Magrath Clinical Scholarship, awarded annually, value about £112; (7) two Musgrave Studentships of £200 in physiology and pathology. There is also a post-graduate research fund, open to all graduates of not more than three years' standing. Gold medals are awarded at the M.D. examination.

Fees.—The cost of the curriculum intended for students proceeding to the degrees of the Queen's University of Belfast is approximately £230. This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital or the Mater Infirmorum Hospital, and fees for the special hospitals. The course for the Conjoint Board costs about the same amount.

The Regulations of the Medical Faculty, containing full information, can be obtained on application to the Bursar, Queen's University, Belfast, price 4d.

University College, Cork

This institution, formerly known as Queen's College, Cork, is one of the constituent colleges of the National University. It holds examinations for all the faculties of that university, in addition to continuing the work which it has hitherto performed—namely, that of providing education adapted to the needs of medical students at all stages of their career. Its first aim is to fit students for the degrees of the National University, but students proceeding for the examinations of the Conjoint Board of England, Scotland, or Ireland, the Society of Apothecaries of London or the Apothecaries' Hall of Ireland, or London University, can arrange the courses of lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance at the college courses are also accepted by the University of Cambridge. Clinical instruction is given at the North and South Infirmaries (each 100 beds) and at the Cork Union Hospital (1,200 beds). Students can also attend the Mercy Hospital (130 beds), the County and City of Cork Lying-in Hospital, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session extends from October to June.

Scholarships.—About £2,500 is available annually for scholarships in the college. Particulars as to each of them can be obtained on application to the Registrar.

Fees.—The fees for the lectures and hospital attendances required by the National University of Ireland course, including examination fees, come to about £200.

Further information can be found in the Calendar, or obtained on application to the Registrar.

University College, Galway

This institution is one of the constituent colleges of the National University of Ireland, and includes Faculties of Art, Science, Law, Celtic, Engineering, Commerce, and Medicine. The college buildings are well lighted and well ventilated, and contain dissecting rooms, an anatomical theatre, and laboratories for the study of physiology, chemistry, physics, and other departments of medical

science. For pathology and chemistry new laboratories are now provided. It has good grounds surrounding it, and there are many arrangements, such as a library, a college union, and an athletic union, for the benefit of those belonging to the Medical Faculty, as well as for students in other departments of the college. The clinical teaching, which is recognized as qualifying not only for the degrees of the National University but for those of the London University and the diplomas of the various colleges in the three kingdoms, is carried on at the Galway Central Hospital and the Galway Tuberculosis Hospital. The Galway Central Hospital is a general hospital, and at the two hospitals students have ample opportunities of studying zymotic and chronic diseases. The Central Hospital has a special ward for diseases of children. Each year the governing body offers about £2,500, and the County Councils of Connaught offer about £3,500 in scholarships. These scholarships are tenable in any faculty. Additional information regarding these scholarships can be obtained on application to the Registrar, and to the Secretaries of the Connaught County Councils.

CLINICAL HOSPITALS IN ENGLAND

Many hospitals in Great Britain and Ireland, though not connected with any medical school, open their doors either to those who have yet to be qualified, to those who are doing postgraduation work, or to both. The facilities they offer for gaining practical clinical experience are very great, and should not be overlooked. Their honorary staffs commonly make a point of giving such instruction as opportunity offers, and at those situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition, they all have to offer, at shorter or longer intervals, appointments for resident medical officers, house-physicians, and house-surgeons. These are usually paid offices, which may be held for periods varying from six months to a year, or even longer. Some of those situated in the great medical centres in the provinces, and in Scotland and Ireland, have already been mentioned in speaking of the medical schools in these localities; but it should be added that there are many other provincial hospitals where admirable work is done, and at which much valuable experience can be gained by both senior and junior students, and by those already qualified. Cases in point are the Royal Infirmary, Bradford; the Royal Sussex County Hospital, Brighton; the Royal United Hospital, Bath; the Worcester General Infirmary; the Kent and Canterbury Hospital; the Derbyshire Royal Infirmary; South Devon and East Cornwall Hospital, Plymouth; the Royal Albert Hospital and Eye Hospital, Devonport; the Royal Devon and Exeter Hospital; the West of England Eye Infirmary, Exeter; the Gloucestershire Royal Infirmary and Eye Institution; the Royal Infirmary, Leicester; the County Hospital, Lincoln; the General Hospital, Northampton; the Norfolk and Norwich Hospital; the General Hospital, Nottingham; the Royal Portsmouth Hospital; the Royal Berks Hospital, Reading; the Royal South Hants and Southampton Hospital; the Staffordshire General Infirmary, Stafford; the North Staffordshire Royal Infirmary at Stoke-on-Trent; the Royal Hants County Hospital, Winchester; the Wolverhampton and Staffordshire General Hospital; the County Hospital, York; and the Coventry and Warwickshire Hospital.

London Clinical Hospitals

As for the hospitals in the metropolis, so many of these take a share in the giving of clinical instruction that it is worth while to classify them.

Children's Hospitals.—There are at least seven of these, the leader among them being the Hospital for Sick Children, Great Ormond Street, which has 268 beds. There are also the Princess Elizabeth of York Hospital for Children, Shadwell, with 136; the Queen's Hospital for Children, Bethnal Green, with 134; the Victoria Hospital for Children, Chelsea, with 130; the Belgrave Hospital for Children, which has a considerable out-patient department and in-patient accommodation for 74 children; the Paddington Green Children's Hospital; and the Evelina Hospital for Sick Children, Southwark Bridge Road, with 76 beds. The largest and the oldest of the hospitals for both women and children is the Royal Waterloo Hospital for Children and Women, Waterloo Road, S.E.1.

Hospitals for Women.—Queen Charlotte's Maternity Hospital, Marylebone Road, with 100 beds and a residential college for medical students and practitioners, specializes in the teaching of midwifery. The first section of the new Queen Charlotte's Hospital in Goldhawk Road, Hammersmith, an isolation block of 30 beds for cases of puerperal fever and puerperal pyrexia, was opened in July, 1930. The Bernhard Baron Research Laboratories, immediately adjoining the isolation block, were opened towards the end of 1930, and are fully equipped and staffed. The City of London Maternity Hospital Midwifery Training School, City Road, E.C.1, admitted 1,724 mothers last year, and 2,701 were attended at its ante-natal clinics. Residential accommodation is provided for two male students, who are afforded excellent facilities for observing operative midwifery and obstetrical complications. Twenty deliveries are guaranteed to students entering for the four-weeks course to encourage them to take the longer period. Certificates acceptable by the examining bodies are issued. Postgraduates are admitted to the ante-natal clinics by arrangement, and week-end postgraduate courses are arranged from time to time. The Samaritan Hospital for Women, Marylebone Road, admits qualified practitioners as clinical assistants to both the in-patient and the out-patient departments; demonstrations are given daily in both departments, the fees—payable in advance—being £3 3s. for three months; full particulars may be obtained from the secretary. In addition may be mentioned the Hospital for Women, Soho Square, whose teaching is confined to postgraduates in limited numbers; the Chelsea Hospital for Women, Arthur Street, Chelsea; and the Elizabeth Garrett Anderson Hospital for Women in Euston Road, the latter being in the nature of a general hospital so far as concerns the class of case treated.

Eye Hospitals.—The largest of these is the Royal London Ophthalmic Hospital (Moorfields), City Road, E.C.1, 200 beds; 4,203 in-patients, 54,941 out-patients in 1936. At this hospital two complete courses of instruction are given during the year—October to February, and March to July—comprising the following subjects: (1) anatomy (including histology and embryology), (2) physiology, (3) optics (including physiological optics), (4) refraction classes, (5) methods of examination and use of the ophthalmoscope, (6) pathology and bacteriology, (7) ophthalmic medicine and surgery, (8) ophthalmoscopic conditions, (9) operative surgery, (10) practical pathology, (11) practical bacteriology, (12) radiology, (13) physiotherapy (including ultra-violet light, diathermy, and ionization), (14) slit-lamp microscopy. Registered medical practitioners and medical students are eligible, under certain conditions, for the posts of chief clinical assistant, clinical assistant, and junior assistant. There are also a number of salaried posts, an annual Clinical Research Scholarship of £50, and a biennial Gifford Edmunds Prize of £100. Clinical work begins each morning at 9 and operations at 10 o'clock. The course of instruction is specially adapted to meet the requirements of those reading for the D.O.M.S. and similar diplomas and degrees in ophthalmology. The Out-patient Department, Medical School, and Laboratories have been rebuilt and enlarged. Further particulars may be obtained from the Dean of the Medical School.

Other eye hospitals are the Royal Westminster Ophthalmic Hospital, now rebuilt on a new site in Broad Street, High Holborn, and containing 84 beds; the Royal Eye Hospital, Southwark; and the Central London Ophthalmic Hospital, Judd Street, W.C.1, each with about 40 beds; and the Western Ophthalmic Hospital with 35 beds, including ten single-bed wards. At the Royal Eye Hospital special classes are held in May and October to meet the requirements of students preparing for the D.O.M.S. and similar examinations. Clinical classes in medical ophthalmology are held for candidates for the M.R.C.P. examinations. A course suitable for general practitioners is held in April under the auspices of the Fellowship of Medicine. The pathological and bacteriological departments are available to ophthalmic surgeons and institutions desiring reports on specimens, cases of interest being dealt with without charge. A research scholarship in ophthalmology to the value of 100 guineas per annum is awarded yearly.

Fever Hospitals.—The London County Council has under its control a number of institutions in and around London for the treatment of the more serious zymotic disorders: it makes special arrangements for the instruction of students in this subject, and grants certificates at the end of the courses. The fees for medical undergraduate and post-graduate instruction at the L.C.C. hospitals for infectious diseases, including small-pox, are as follows: Course in diagnosis and treatment of fevers, three guineas for two months' course. Course in clinical practice and hospital administration (for candidates for the D.P.H.), three and a half guineas for 24 demonstrations and four guineas for thirty demonstrations. Course in diagnosis and treatment of small-pox (in cases in which a fee is payable), one guinea for three demonstrations. Detailed information should be sought from the Medical Officer of Health, Special Hospitals Division, London County Council, County Hall, S.E.1.

Chest Hospitals.—The largest of these is the Brompton Hospital for Consumption, which has 333 beds and a large sanatorium at Frimley with 150 beds. There is also the City of London Hospital for Diseases of the Chest, Victoria Park, with 185 beds, and the Royal Hospital for Diseases of the Chest, City Road, with 85 beds, now amalgamated with the Royal Northern Hospital, Holloway Road.

Nose, Throat, and Ear Hospitals.—The institutions which confine their work to disorders of the throat, nose, and ear all make special arrangements for the benefit of senior and postgraduate students. They are the Metropolitan Ear, Nose, and Throat Hospital, Fitzroy Square; the Royal Ear Hospital, Huntley Street, W.C.1 (now the Ear, Nose, and Throat Department of University College Hospital); the Central London Throat, Nose and Ear Hospital, Gray's Inn Road; and the Golden Square Throat, Nose and Ear Hospital, near Piccadilly Circus, W.1—the last, which possesses 101 beds, being the largest of the four institutions.

Miscellaneous Special Hospitals.—Among these are the Bethlem Royal Hospital, recently transferred from Kennington to Monks Orchard, Eden Park, Beckenham, Kent, which (like the Maudsley Hospital) confines its work to the treatment of mental diseases, and includes a department for nervous and early mental disorders; the Royal National Orthopaedic Hospital, Great Portland Street; St. Peter's Hospital for Stone and Urinary Diseases, Henrietta Street, Covent Garden; St. Mark's Hospital, City Road, which devotes itself to the treatment of diseases of the rectum, including cancer and fistula; St. Paul's Hospital, Endell Street, Holborn, W.C.2, where continuous postgraduate work in genito-urinary disease is carried on, and two regular postgraduate courses held each year; the National Hospital for Diseases of the Heart in Westmoreland Street, W.1; St. John's Hospital for Diseases of the Skin in Leicester Square: the Hospital for Diseases of the Skin, 71, Blackfriars Road, S.E.1; the National Hospital, Queen Square, W.C.1, an institution possessing 200 beds for neurological cases and a world-wide reputation; and the West End Hospital for Nervous Diseases, 73, Welbeck Street, W.1.

Detailed information as to the teaching arrangements of all these institutions may be obtained on application to their secretaries.

Women in Medicine

The regulations of the General Medical Council and of the various universities and colleges set out in previous sections apply to women as to men.

Examinations

Women are admitted to all the medical examinations of the following qualifying bodies: all the universities of Great Britain and Ireland; the Royal College of Physicians of London; the Royal College of Surgeons of England; the Society of Apothecaries of London; and the Conjoint Boards of the Colleges in Scotland and in Ireland. In addition, women are eligible for election as Fellows of the Royal College of Physicians of London, the Royal College of Physicians of Edinburgh, and the British College of Obstetricians and Gynaecologists.

Medical Education

In this country at the present time co-education is the general rule. Most of the schools of the London hospitals have, however, so far shown themselves more conservative in this respect than the rest of the country.

In England the colleges connected with the universities of Birmingham, Bristol, Cardiff, Durham, Leeds, Liverpool, Manchester, Newcastle, and Sheffield admit women students as well as men, whilst in Scotland the universities of Aberdeen, St. Andrews, Edinburgh, and Glasgow also admit women. In Ireland all universities and colleges are open to them.

In London the only schools open to medical women students are the London School of Medicine for Women and, to a modified extent, University College Hospital and King's College Hospital. It is felt that such a state of affairs can only be temporary, and hopes are entertained that in the near future the principle of co-education will prevail in the capital.

At the present time it will be seen that the only co-education hospitals in London are University College and King's College. The number of women entrants is restricted, but they are given excellent opportunities whilst students, and also, in fair proportion, are given opportunities of postgraduate experience as residents, house-surgeons, house-physicians, and obstetrical assistants.

Number of Women Students

Returns made to the University Grants Committee show that the total number of full-time women medical and dental students attending university institutions in England, Scotland, and Wales during recent years were:

	1925-6	1927-8	1929-30	1931-2	1933-4	1935-6
England	1,059	862	842	910	1,046	1,185
Wales	30	30	19	40	54	62
Scotland	313	254	275	322	425	500
Total	1,402	1,146	1,136	1,272	1,525	1,747

The corresponding total number of full-time male students of medicine, including dentistry, was 11,176 in 1935–6.

The London (Royal Free Hospital) School of Medicine for Women

The London (Royal Free Hospital) School was started for the training of women in medicine in the days before there were any co-education facilities for them, and it still remains by far the largest school for women. In addition to the clinical work at the Royal Free Hospital, which at present has upwards of 330 beds, arrangements are made for students of the school to obtain clinical instruction at the National Hospital for Nervous Diseases, Queen Square; the Royal London Ophthalmic Hospital, Moorfields; the Great Ormond Street Hospital for Children; the Elizabeth Garrett Anderson Hospital; the South London Hospital for Women; the Cancer Hospital; the Central London Ophthalmic Hospital; and certain hospitals administered by the L.C.C. Its importance for women in medicine can hardly be overestimated, not merely because it was the pioneer which made the way possible, but also because it is still the only general hospital in Britain which offers all its postgraduate appointments, higher and lower, to open competition by women as well as men, thus giving unique opportunity of gaining experience. Not only are all the resident appointments at the Royal Free Hospital, of which there are twenty-seven yearly, eligible for women, but, in addition, higher posts may be obtained in all the various branches of a general hospital, from those of registrar and anaesthetist to those of visiting physician or surgeon and those in charge of special departments. There is a special unit in gynaecology under a woman professor, and entirely staffed by medical women. This policy has so far not been fully adopted in its entirety by any other hospital. It may be of interest to note in this connexion that the Royal Free Hospital has many women on its

general committee and weekly board of management, and that the chairman of the latter is, at present, a woman.

Openings for Medical Women

There are at the present time the names of over six thousand medical women on the *Medical Register*. There is an increasing demand by the public for the services of women doctors, and the profession of medicine with its many and varied branches offers ample opportunity for a useful career. Statistics show that the proportion of those who make good is as high as, if not somewhat higher than, that of their men colleagues.

Openings at Home

Since the number of men and women qualifying has reached normal standards, medical women find no difficulty in obtaining house appointments in the recognized teaching hospitals and in non-teaching hospitals, hospitals for women and children, sanatoria, etc. The reorganization of hospitals under local authorities has resulted in the creation of a number of new resident appointments, senior and junior, intended to be held by medical women.

General Practice.—There are good openings as assistants or, better still, as assistants with a view to admission as partners in general practice. Medical women also do very well when starting in new districts; and there is considerable scope for them in midwifery work.

Specialist and Consulting Practice.—The number of women doing specialist and consultative practice grows rapidly. There is no branch of medicine in which it is not possible for a patient to consult a medical woman. Women so specializing equip themselves by obtaining the highest essential qualifications, and it is hoped that the time is not far distant when many more women will hold positions on the honorary staffs of all hospitals. Already medical women are on the honorary staff of the Royal Free Hospital, London, and of general hospitals in a number of provincial cities. In London, Edinburgh, Glasgow, Manchester, Bristol, and Brighton there are hospitals staffed entirely by medical women, doing very fine work and meeting a real need, the latest to be opened being the Marie Curie Hospital in London for the treatment of cancer by radium. Research work also provides interesting openings, as, for example, in dealing with the special problems concerning cancer, nutrition, puerperal morbidity and mortality, statistical work, etc., and for some of these research scholarships and grants are available.

Teaching Posts.—Women hold professorships and lectureships at various universities.

Industrial Medicine.—In this branch there is much interesting work available, and it is undergoing considerable development at the present time. Several women already hold such posts.

Administrative Work.—A certain number of these important posts are admirably filled by medical women. At the Ministry of Health the department for maternity and child welfare is staffed by medical women. Medical women also hold administrative posts under the Home Office, the Board of Education, the Boards of Control of both England and Scotland, the Post Office, etc.

The Public Health Service.—This service provides numerous openings for medical women. It has many departments, and its rapid growth in recent years has provided much interesting work in preventive medicine. Senior departmental posts are frequently held by medical women, and several occupy posts as medical officers of health. For maternity and child welfare work women have been found to be peculiarly suited; but, by a curious economic limitation, married women, who would appear to be the most suitable of all, have been, by many public authorities, excluded from service. A change of attitude, however, appears now to be taking place, as was evidenced by the decision of the London County Council to withdraw its ban against the employment of married medical women in its Public Health Service.

Medical Inspection, etc.—Under the Board of Education there are women serving as medical advisers and school medical inspectors. The London County Council and other important councils in the country have medical women on their permanent medical staffs, in both the senior and the junior grades. The London County Council has two of its senior medical women appointed to serve as district medical inspectors. In addition, they have a large number of women medical inspectors of school children, and also women are serving as experts in the departments dealing with mental deficiency, tuberculosis, and venereal disease. Some medical women also serve as examiners of the candidates entering the public services, as, for example, the civil service. The services of medical women are extensively enlisted by public authorities in dealing with employees of their own sex. In several instances women serve as assistant medical officers to prisons. The services of medical women are also enlisted as lecturers and examiners on first aid, home nursing, health, and infant care.

Openings Abroad

Colonial Office.—To those to whom oversea service appeals it offers the possibility of useful, interesting, and adequately paid work. At present there are posts for women in Malaya, and East and West Africa. The work is almost entirely hospital and maternity and child welfare work; there have been one or two specialist appointments, such as bacteriologists, and more may follow. Women have, so far, only been appointed to the lower-grade posts, but their pay is the same as that of the men in similar grades. When placed on the permanent staff they are eligible for pension.

Egypt.—Appointments in the Kitchener Memorial Hospital, Cairo, which forms part of the Clinical Faculty of the University of Cairo, are held by women. Appointments in certain dispensaries are open to medical women. There are also posts held under the education authority, chiefly school medical inspection.

India.—See note on the Women's Medical Service for India on page 483.

Mission Field.—Missionary societies offer employment to medical women, chiefly in India, China, and the Near East, where their services are urgently needed. There is a wide field of opportunity abroad for those with the missionary spirit and who are fitted for very hard work under conditions which may be difficult (see special article on Medical Missionaries at page 509).

Public Activities

Medical women are frequently appointed to serve on Royal Commissions and Government Committees dealing with medical subjects, and are also requested by them to give evidence of an expert medical nature.

Medical women have always shown considerable interest in medico-political affairs, and take an active part in the work of the British Medical Association, and with the various other societies dealing with medicine as it affects the community in general. With this end in view they also have a Medical Women's Federation, which enables them to voice a collective expression of opinion. This might otherwise be difficult to ascertain, as women are so widely scattered, as regards both their geographical distribution and their varied activities. This collective opinion of medical women has been found of great assistance by the British Medical Association and other allied societies with which it works in cordial co-operation and by whom it is frequently approached, both for information and also as a convenient means of approaching medical women as a whole.

It may be added, with regard to contributions to medical literature, that this is a branch of work in which women are more and more taking their share, and scientific and other works are frequently published by them.

WOMEN'S MEDICAL SERVICE FOR INDIA

Among careers open to medical women abroad the Women's Medical Service for India deserves honourable mention. This Service is open to fully qualified medical women of British or Indian nationality, and with the present amount of Government subsidy the number of medical officers is limited to 44.

Medical women proceeding to India to join the Women's Medical Service receive a sufficient sum for a first-class passage to India. On landing they are posted to one of the larger women's hospitals to gain Indian experience and to learn the language. For a further period they are appointed to act temporarily for medical women on furlough. They are then definitely appointed to the charge of hospitals. Private practice is allowed, provided it does not interfere with official duties. The only exception is in administrative or educational posts, when an allowance in lieu of practice is given. The amount obtained from practice varies according to the station, but in most cases it forms a fair addition to the salary, varying from £150 to £1,000 a year.

Excellent opportunities for surgery—especially gynaecological—are found in the Women's Medical Service. In the future opportunities are likely to open in connexion with maternity and child welfare. Rates of pay are as follows:

Years of Service	Oversea Allowance per Mensem	Salary per Mensem	English Equivalent* per Annum
1 to 3	Rs. 100	Rs. 450	£495
4 to 6	Rs. 100	Rs. 500	£540
7 to 9	Rs. 100	Rs. 550	£585
10 to 12	Rs. 100	Rs. 600	£630
13 to 15	Rs. 150	Rs. 650	£720
16 to 18	Rs. 150	Rs. 700	£765
19 to 21	Rs. 150	Rs. 750	£810
22 to 24	Rs. 150	Rs. 800	£855
Over 24	Rs. 150	Rs. 850	£900

* At rupee value 1s. 6d.

Furnished quarters are provided, representing an additional Rs. 150 per mensem.

The cost of living in India is much higher than formerly, but it should be possible for a medical woman (with house provided) to meet actual household expenses for about Rs. 350 per mensem, leaving the remainder of her salary for dress and personal expenses. To this must be added the necessary saving to meet additional expenses for furlough and leave spent in the hills.

Leave on average pay is earned at the rate of two-elevenths of the period spent on duty.

Study leave is granted to the extent of twelve months in the total service, and will not be granted more than twice in the course of an officer's service. During study leave an officer draws half average pay, with a study allowance at the rate of 12s. a day during the course of study. Officers of European domicile are entitled to four free return first-class passages from a port in India to a port outside India in their whole service. The first passage is not granted until after the expiry of four years' approved service, and thereafter passages may be granted at intervals of not less than four years. There is a Provident Fund to which members of the Service contribute 10 per cent. of their pay. The Service contributes another 10 per cent., which accumulates at interest and is repaid on retirement.

Admission to the Service is made by selection in India and England, preference being given to those with Indian experience. Vacancies are few. Candidates in the United Kingdom should apply to the Medical Adviser, Countess of Dufferin's Fund, c.o. The High Commissioner for India, India House, Aldwych, London, W.C.2. Candidates in India should apply to the Chief Medical Officer, Women's Medical Service, Countess of Dufferin's Fund, Simla and Delhi.

Postgraduate Study

Postgraduate students may be divided into general practitioners desirous of refresher courses, usually covering a wide field within a relatively short period of time, to bring their knowledge up to date; those who wish for instruction in special subjects with a view to obtaining one of the special diplomas or of preparing for some higher examination, perhaps with a view to promotion in one or other of the medical services, or, if already general practitioners, of adding some form of specialism to their work; and visitors, whether from the oversea Empire or from foreign countries, who wish to pursue intensive studies in special subjects or to familiarize themselves with the methods of practice in Great Britain. Further, mention may be made of medical members of the Defence Services who, for reasons similar to these, constitute an important section of postgraduate students; and of Indian and other students who, having completed the ordinary medical curriculum, wish to pursue their studies further before returning to their own countries.

It is clear that London, with the large and varied amount of material available, and with its wealth of professional skill and teaching power, offers ample opportunity for the supply of all these needs. Till recently, however, no definite postgraduate school of the general character and scope required had begun to function, though important steps had been taken to remedy this lack. There are teaching centres which have done, and are doing, admirable work, but they are widely scattered, and their efforts are limited and largely unsystematized. Two hospitals—the West London Hospital at Hammersmith, and the Prince of Wales's General Hospital at Tottenham—have for many years had postgraduate colleges attached to them. Their efforts are valuable and praiseworthy, but they can cater only for a limited number of general practitioners, and these largely drawn from those whose practices are within a relatively short distance of the schools. The general practitioner may also perhaps find a refresher course at the hospital at which he was trained held during a vacation, and other courses are organized from time to time at some of the London hospitals, general or special. The Fellowship of Medicine, too, arranges definite courses of study at individual hospitals; and at its office—generously placed at its disposal by the Royal Society of Medicine at 1, Wimpole Street, W.1—a list of hospitals, special and general, to which medical graduates may resort, with or without fee, is kept, and the names of the teachers at each hospital are available.

All these agencies and schools at present continue their activities, and it seems probable that they may be required for some time to come; but, the more unified, systematized, and comprehensive provision needed is now established at the British Postgraduate Medical School in Ducane Road, Shepherd's Bush. It is more than fifteen years since a committee, presided over by the Earl of Athlone, reported that there should be "a school attached to a hospital centrally situated in London devoted solely to postgraduate medicine as a school of the university." The school, under the auspices of the University of London and of the London County Council, was opened by King George V in 1935. The King expressed the earnest hope that the school "with its happy union of ward and laboratory, university and local authority, drawing students and teachers alike from all parts of our Empire—and I trust from regions even more widely spread—may prosper under God's blessing. May it play an imperial role in the winning and dissemination of medical knowledge and in the relief of suffering, and in enabling the doctors of all lands to come together in a task where all must be allies and helpers."

At that time the chairman of the Governing Body was the late Sir Austen Chamberlain. He has been succeeded in that office by Sir John Caulcutt. The School is at

present recognized as a constituent college of the University of London, and the London County Council has reorganized its hospital to adapt it for its enlarged purposes. It has been extended and fitted with the most modern equipment. When its two new blocks are in use it will provide 534 beds. The Dean of the School is Colonel A. H. Proctor; a distinguished body of professors and readers in several departments of medicine has been appointed; and definite courses of instruction have been successfully conducted. The number of enrolled students is as yet relatively small; and the School suffers from some disadvantages. It is somewhat remote from the university quarter, and access to it is not very convenient. Wood Lane and East Acton are its nearest railway approaches. The facilities it offers to students are not yet as well known as they should be. It may be that these things account for the somewhat disappointing progress that has yet been made towards the fulfilment of the hopes voiced by King George V; but the Governing Body and the School Council have made suitable arrangements to meet the needs of various classes of students, and it can scarcely be doubted that the unique opportunities which the School and Hospital afford will soon be fully realized. Through it London should become a world centre for postgraduate medical training.

The Governors of the British Postgraduate Medical School have entered upon negotiations with certain well-known special hospitals—the Hospital for Sick Children, Great Ormond Street, the Royal London Ophthalmic Hospital, and the National Hospital for Diseases of the Nervous System—with a view to intimate co-operation in postgraduate education.

With regard to other special fields of work, there has been a steady increase in the demand for postgraduate instruction in the psychological aspects of medicine, and this will probably continue owing to the passage of the Mental Treatment Act and other causes. An important impetus in this direction has been given by the revision of the regulations for the University of London diploma in psychological medicine. In the scope of its diploma are now included mental retardation and delinquency, and also the psychoneuroses. Systematic attempts to provide instruction in these fields are being made by at least three bodies. There are courses held at the Maudsley Hospital. Courses in mental deficiency are held once or twice yearly, organized by the Central Association for Mental Welfare in conjunction with the University of London and with the London School of Hygiene and Tropical Medicine. The Tavistock Clinic (formerly the Institute of Medical Psychology), in addition to a five weeks' introductory course beginning early in October, holds from time to time short courses of lectures for the general practitioner. The main course in psychotherapeutic theory and method now covers two years' work, and is open to a limited number of practitioners only. They are expected to give a minimum of twelve hours (on three days) in the week. The first year's work is intended to cover the ground for those desirous of practising psychotherapy, while the full course is meant for those intending to specialize in the subject. The clinic now has admirable premises at Malet Place, W.C., and such systematic teaching as that indicated has been more fully and effectively developed there and has now become very extensive and important. The course covers the requirements for the appropriate parts of the university diploma.

Instruction in all branches of preventive and of tropical medicine is now available at the London School of Hygiene and Tropical Medicine, at the corner of Keppel Street and Gower Street. This institution was opened in 1929, and has established itself as a most valuable school of the University of London in the faculties of medicine and science. Here are university chairs in public health, bacteriology, biochemistry, epidemiology, helminthology, medical protozoology, medical entomology, and medical industrial psychology.

The principal courses of study are for the university diplomas in public health, in bacteriology, in industrial psychology, and for the Diploma in Tropical Medicine and Hygiene of the English Conjoint Board. Special courses of instruction are also arranged in other subjects. The course of study for the diploma in public health comprises full preparation for both parts of the diploma examination and includes instruction in infectious disease and hospital management, and two important studies which have recently been established—namely, physiology as applied to hygiene and industry, and medical industrial psychology. It should be noted that new rules relating to this diploma have been made by the General Medical Council and come into force on October 1, 1938. The course of study for the diploma in tropical medicine and hygiene is also taken in two parts. Clinical demonstrations are afforded at the Hospital for Tropical Diseases, close by, and at other centres. With the incorporation in this school of the Ross Institute the studies in tropical hygiene have received a new impetus and direction, and the London School of Tropical Medicine may now be said to represent the confluence of three movements: that of the scheme for a central school of hygiene recommended by the Athlone Committee in 1921, that of Sir Patrick Manson and the Seamen's Hospital Society from 1899, and that of Sir Ronald Ross and his Institute at Putney.

In the provinces the Universities of Oxford, Cambridge, Birmingham, Bristol, Liverpool, Manchester, Sheffield, and Durham (at the College of Medicine, Newcastle-on-Tyne) have organized courses of postgraduate work and instruction. Liverpool University has established a regular course for ship surgeons on similar lines to that already mentioned in London. Edinburgh receives graduates from many schools in the Dominions as well as in this country. In Glasgow and in Aberdeen courses are available, and, in relation with the University of St. Andrews, courses are given by the James Mackenzie Institute for Clinical Research. At many of these centres the teaching is provided by whole-time intensive courses, by part-time courses, and by means of clinical assistantships. The Joint Tuberculosis Council has provided nomadic courses in its own special subject, and a considerable number of the Divisions of the British Medical Association are now organizing postgraduate courses in their own locality.

British Postgraduate Medical School

The British Postgraduate Medical School was incorporated by Royal Charter on July 10, 1931. It was opened by H.M. King George V, accompanied by H.M. the Queen, on May 13, 1935, in the presence of a distinguished gathering. It has been recognized as a school of the University of London, and is managed by a governing body, under the chairmanship of Sir John Caulcutt. The governing body is made up of representatives from the various departments of State interested in medical education—the Ministry of Health, various departments of State, the Royal Colleges, the Society of Apothecaries, the University of London, the London County Council, and certain co-opted members.

The School is associated with Hammersmith Hospital, one of the London County Council general hospitals. This is a modern hospital, which has been enlarged to meet the requirements of the School. The original accommodation was 388 beds, and it has been extended to 534 beds by the erection of an entirely new ward block. Two additional operation theatres of the latest design have been constructed, and, in addition, the old operation theatre, used by Sir Robert Jones during the war, has been brought up to date, and is now in use as the gynaecological operation theatre. A suite of new wards and accompanying labour rooms and nursery constitute the maternity department, and is in accordance with the latest requirements for the segregation of cases and the avoidance of infection.

Each ward throughout the hospital has attached to it, in addition to the ordinary beds, single-bedded side wards and a clinical laboratory. There have been constructed in addition special laboratories for electrocardiographic and basal metabolism observations. The kitchens have been reconstructed and a dietitian appointed. A large new block has been constructed to house the out-patient department on its ground floor, and a modern and up-to-date radiology department on the first and second floors. This department provides for both diagnostic procedures and for deep therapy. It is in all respects of the very latest design and equipment.

The School itself is housed in a block mainly devoted to administration and pathology. The medical and surgical and gynaecological departments are housed in a separate block providing clinical laboratories and rooms for senior members of the staff. The existing school block includes two lecture theatres for the use of the School. These lecture theatres are provided with an epidiascope capable of projecting large pathological specimens, a microprojector of a new and improved design, and a cinematograph. The lecture theatres seat up to 100 students, and have attached to them a suite of rooms for the use of the lecturer and accommodation of cases. There is a reference library, which is noteworthy for the large number of periodicals available for reference. These include all the important English periodicals and a selection of the more important journals published in Europe, America, and the Dominions.

The pathology department has all its laboratories in the School building. On the ground floor are provided laboratories for morbid histology and for biochemistry. On this floor is also situated the post-mortem department. On the first floor is accommodation for the professors and readers, museum, library, and the laboratories devoted to clinical pathology. The top floor is entirely occupied by the bacteriological department and the accommodation for experimental pathology. The equipment throughout these laboratories is entirely new and of modern design.

The staff of the School is organized in three divisions. First is the permanent whole-time staff. The second is the consultant staff, having regular visiting days and available for emergency calls. This consulting staff is mainly occupied in the treatment of patients, and only takes a secondary part in tuition. It has been necessitated by the fact that the School has no special departments, it being the intention of the governing body that the special hospitals already existing in London should be utilized for postgraduate students who require such instruction. The third division of the staff is the visiting staff, who conduct special courses in different groups of disease and take part in the general teaching of the School. It is hoped to include in this staff the leading teachers and authorities available in London and the provinces, and, as opportunity offers, from other parts of the world.

The permanent whole-time staff is divided into four departments—medicine, surgery, obstetrics and gynaecology, and pathology. Each department is under the guidance of a director, who is a professor appointed by the University of London. He is assisted by a reader or readers, also appointed by the University, and a varying number of assistants appointed by the governing body. In addition, each department has a resident staff.

The School provides refresher courses for general practitioners of an intensive character. These courses last for a fortnight, and are held mainly in the summer months. Not less than six such courses will probably be held during the next year. More courses will be provided if the demand should arise.

The most important part of the tuition is, however, the instruction provided for medical graduates from all parts of the world who desire to extend their knowledge in medicine, surgery, or midwifery, and for students of pathology who desire to do advanced work. In this respect the School is attempting to provide something entirely different from the work usually associated up to date with postgraduate schools; previous postgraduate instruction has consisted almost entirely of courses and lectures covering a set syllabus. Although this will form part of the instruction provided at the School, the real postgraduate instruction at Hammersmith consists in providing the students with a large amount of clinical material and encouraging them to work at it, under the tuition of well-qualified instructors. All the assistants of the School have special experience in some department of their subject, and if the student is particularly interested in that department he is attached to that particular assistant. He is allotted cases, and a definite amount of time is set apart which he can devote to the examination of these cases. He receives every assistance and such tuition as meets his personal requirements. The classes are broken up into small groups with this object, and the work from the outset is almost entirely clinical.

From time to time definite clinical lectures, carefully prepared, are given, either in the School theatres or in the clinical theatres. The students attend regular pathological conferences and radiological conferences, and conferences and discussions between the different departments. The department of pathology takes part in the clinical work of the School, and provides regular demonstrations to the students on laboratory procedures. In this way it is hoped that the students of the School will acquire a more scientific and expert approach to the problems of clinical medicine and surgery, and by attendance at the various conferences will be brought in touch with the latest advances and benefit by hearing the critical discussions on the diagnosis and treatment.

The students also attend the out-patient departments, which are purely consultative in character. The department of obstetrics and gynaecology has the advantage of being able to utilize the obstetric and gynaecological beds at St. Mary Abbots Hospital, and in this way students have a large amount of material at their disposal. In the out-patient department of obstetrics special attention is being devoted to ante-natal and post-natal work, and the prevention of maternal mortality.

The department of pathology provides instruction for students in advanced pathology in any of the three departments. It also provides accommodation for research work in pathology and for students desiring to work for the Ph.D. In addition to the weekly demonstrations on laboratory procedures, lectures on "The Place of the Laboratory in Clinical Medicine" are provided at regular intervals. The organization of a course for the Diploma in Clinical Pathology is under consideration.

The radiology department provides clinical instruction for students taking a diploma in radiology, and postgraduates who desire further instruction in radiology can be accommodated in limited numbers.

The fees for the ordinary hospital practice, including tuition, are 6 guineas for one month and 3 guineas for each subsequent month. The fee for the fortnight refresher courses is 5 guineas.

The British Postgraduate Medical School is situated in Ducane Road, Shepherd's Bush, W.12, and can be reached by rail to Wood Lane station (Central London Railway) or by No. 7 bus to Acton Vale. Information as to fees for other courses of study and further details can be obtained from the Dean.

Fellowship of Medicine and Postgraduate Medical Association

The Fellowship of Medicine arranges regular courses in general medicine and surgery, including special departments, each lasting from one to four weeks. Courses in diseases of children, diseases of the chest, heart, nervous system; dermatology; gynaecology and obstetrics; plastic surgery; proctology; orthopaedics; psychological medicine; physical therapy; urology; and practical anaes-

thetic tuition are given from time to time at the special hospitals in association with the Fellowship of Medicine. Evening clinical and pathological courses for the M.R.C.P. (four times a year) and F.R.C.S. (Primary and Final) (twice a year) are arranged also. Week-end and evening courses are arranged in many subjects. A panel of teachers is always available for clinical teaching, by arrangement with the Fellowship. Lectures and demonstrations are arranged periodically. The office of the Fellowship is, by kind permission of the Royal Society of Medicine, at No. 1, Wimpole Street, W.1 (telephone Langham 4266). The secretary is in attendance daily from 10 a.m. to 5.30 p.m. (Saturday 10 a.m. to 12.30 p.m.). The annual subscription for membership of the Fellowship of Medicine and Postgraduate Medical Association is £1 1s., which includes the *Postgraduate Medical Journal*, published monthly. Courses, lectures, and demonstrations are open only to members.

Postgraduate School of Radiotherapy

The working scheme between the London Radium Institute in Riding House Street and the Mount Vernon Hospital at Northwood, for the establishment under joint control of a Postgraduate School of Radiotherapy, continues in operation. The Dean (Sir Cuthbert Wallace) will be pleased to see prospective students by appointment. Applications for information may be addressed to the Secretary (Mr. T. A. Garner) at the School, Riding House Street, London, W.1.

West London Postgraduate College

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men. The college started in 1895; it is provided with lecture, reading, and writing rooms, and accommodation of all sorts for the convenience of postgraduate students. The work of the college is eminently suitable for men in general practice and officers in the Services who wish to revive their general clinical knowledge.

Clinical teaching is carried out in the wards and out-patient department, the latter being one of the largest in London, and affording ample opportunities for post-graduates to examine patients. Operations take place at 2 p.m. daily, and there are the usual special departments. Postgraduates may be appointed to act as clinical assistants for six months, no charge being made. A special clinic for the treatment of venereal diseases (male and female) is held all day. Graduates are admitted to the work of the clinic, and certificates of satisfactory attendance and work are given.

Pathological teaching and museum demonstrations are undertaken by the pathologists.

The certificates of the school are recognized by the Admiralty, the War Office, the Colonial Office, the India Office, the University of London (for higher degrees), and the Conjoint Board. The general course is recognized as being suitable for practitioners taking a course of study under the Ministry of Health "grant-aided scheme for postgraduate study by insurance practitioners in rural areas."

Fees.—Hospital practice, including all ordinary demonstrations and lectures, £2 2s. for one week, £6 6s. for one month, £9 9s. for two months, £12 12s. for three months. Instruction in the administration of anaesthetics is given at the rate of £4 4s. a month.

A prospectus can be obtained on application to the Dean, West London Postgraduate College, Hammersmith Road, W.6.

North-East London Postgraduate College

The headquarters of this postgraduate school are situated at the Prince of Wales's General Hospital, Tottenham, N.15, in the midst of this densely populated North London district. It contains 238 beds, and is within a few minutes' walk of South Tottenham Station on the London Midland and Scottish Railway, and Seven Sisters and Tottenham Hale Stations on the London and North-Eastern Railway. It is readily accessible by electric tram from Manor House and Hackney, and from Dalston, Edmonton, and other parts of North London. The North Middlesex Hospital, Edmonton, N.18, with upwards of 1,000 beds, has, under a recent arrangement, taken part in the clinical teaching.

The college is in association with the Fellowship of Medicine and Postgraduate Medical Association, and is recognized by the Admiralty and India Office for the purpose of study leave, and by the University of London as a place for advanced study for the M.D. and M.S. degrees; the course of practical teaching of bacteriology is approved by the University of Cambridge for its D.P.H., and there are ample arrangements for the convenience of men who are thus working, or who, being in active practice, are desirous of getting themselves into touch with modern methods. The hospital affords excellent facilities for medical practitioners who wish to take part for a time in general hospital work, or to obtain special instruction in the several branches of medicine and surgery. Throughout the sessions, into which the year's work is divided, clinics, lectures, and demonstrations are given. Operations are performed every afternoon except Saturday. Special vacation or intensive courses are held at intervals. The winter session will open about the middle of September for clinical teaching.

Fees.—For the hospital practice in general medicine or surgery the fee is 5 guineas for three months or 2 guineas for one month. Provided there is accommodation in the special departments, the fees are: eye department 3 guineas; gynaecological department 5 guineas; ear, nose, and throat department 5 guineas for three months. All departments—the fee is 3 guineas for one month, 6 guineas for three months, 10 guineas for a year, and 15 guineas for a perpetual ticket. Courses in practical anaesthetics are not included in the above, and a fee of £4 4s. per month is charged for this work. For special tuition in any subject the fees are arranged with the member of the staff concerned in consultation with the Dean.

Additional information can be obtained from the Dean of the Postgraduate College, at the Prince of Wales's Hospital.

West End Hospital for Nervous Diseases

The annual out-patient attendance is between 38,000 and 40,000 at the out-patient department, Welbeck Street, W.1. The in-patient department, Outer Circle, Gloucester Gate, Regent's Park, provides 76 beds, including 25 cots for children, and is fully equipped with pathological, *x*-ray, and other special departments.

The clinical and teaching facilities of the hospital fulfil the requirements of the examining bodies for the Diploma in Psychological Medicine, and for the London M.D., Part III. Attendance on the general practice of the hospital is open to postgraduates. There are opportunities for personal examination of cases. In addition, systematic courses of instruction in neurology and in related subjects are held throughout the year. Special courses are given for the D.P.M. and for the M.R.C.P. Tuition for senior undergraduates is also arranged.

The courses of instruction in neurology consist of out-patient demonstrations, ward rounds in the in-patient department, and lecture-demonstrations by the physicians and surgeons; clinical demonstrations of psychological cases are given by members of the psychiatric department and the child guidance unit; also pathological discussions. Of the related subjects, demonstrations on the new logical aspects of their subjects are given in radiology, ophthalmology, orthopaedics, physical medicine, and oto-rhino-laryngology. A department of clinical research has been founded, and any qualified persons desirous of working in this department should apply to the director. The Savill Memorial Prize (value £15 and medal) is offered biennially for competition

amongst postgraduate students of the hospital. Honorary clinical assistantships are available in the out-patient department, and application for these should be made to the House Governor, to whom application should also be made for particulars of the courses of instruction.

Manchester Postgraduate Facilities

Courses in preparation for the diplomas in psychological medicine, in public health, bacteriology, and veterinary State medicine are arranged. There are facilities also for obtaining a certificate in venereal diseases. A limited number of clinical assistantships at the discretion of the hospitals are offered in the medical, surgical, and special departments of the Manchester Royal Infirmary, the Ancoats Hospital, and certain special hospitals for one, two, or three months, or longer. A clinical assistantship at the Radium Institute for three months is offered. Clinical teaching for postgraduates is given each Thursday during university terms by the honorary staff at Ancoats Hospital; no fee charged.

Postgraduate Courses at Bristo

The University of Bristol provides courses of postgraduate study for practitioners. Details of set courses at the Royal Infirmary and General Hospital are announced locally. In addition, practitioners may become clinical assistants in medicine, surgery, or special subjects for periods of a month or more.

Daily Postgraduate Study.—For those who are able to devote several hours each day to hospital practice the university offers special facilities for postgraduate work. Qualified medical practitioners may be appointed as clinical assistants for a period of one or more months. They may act as assistants, if times permit, in more than one department and in any of the hospitals during their period of study. They will be entitled to the use of the clinical laboratories and medical library, and have the right to attend in all departments, including operations, postgraduate and ordinary clinical demonstrations, and postmortem examinations.

All inquiries and applications for admission should be addressed to the Director of Postgraduate Studies (Clinical Section), Department of Medicine, University of Bristol.

Postgraduate Courses at Newcastle

The following postgraduate courses can be taken at the Medical School, King's College, Newcastle-upon-Tyne, formerly the University of Durham College of Medicine (University of Durham).

1. General courses in clinical medicine, surgery, and pathology at the Royal Victoria Infirmary, meeting once weekly for ten weeks. One course will be held from October to December, and one from April to June.

2. Special courses of clinical instruction meeting once weekly for ten weeks in the following subjects: gynaecology, diseases of the eye, diseases of the throat, nose, and ear, diseases of the skin, venereal diseases, neurology. Special courses in midwifery will be held at the Princess Mary Maternity Hospital.

3. An intensive course of fourteen days' duration in the summer vacation.

4. In addition to the regular postgraduate courses, practitioners may attend the ordinary medical and surgical practice of the Royal Victoria Infirmary, and also at the Princess Mary Maternity Hospital, for specified periods.

5. Classes are held at the Newcastle General Hospital for clinical instruction in medicine and surgery, or lecture-demonstrations, every Sunday morning during term. There is no fee, and all medical practitioners are invited to attend.

6. General and special courses in dental surgery are also provided in the Dental Department.

Postgraduate Study in Cardiff

Certain courses of postgraduate study are given during the year, and facilities may be offered to graduates in medicine and other duly qualified persons to carry out research work in the different departments of the Medical School. Research Scholarships are available ranging in value from £150 to £250 per annum. Further information regarding these is given under the heading "Research Scholarships" in the article on the University of Wales (p. 456).

Edinburgh Postgraduate Courses

In connexion with the University and Royal Colleges postgraduate courses are arranged every year, from about the middle of July to about the middle of September, comprising: (*a*) a course in obstetrics and gynaecology, held from July 12 to July 31; (*b*) a general practitioner course; (*c*) a general surgical course. Courses (*b*) and (*c*) extend for four weeks from August 16 to September 11. Similar courses are arranged each year.

The course in obstetrics and gynaecology includes instruction in clinical midwifery and clinical gynaecology, obstetrical and gynaecological anatomy, physiology, and pathology, ante-natal and post-natal clinics, and the care of the newborn infant, etc.

The general practitioners' course includes lecture-demonstrations, and, where possible, practical instruction on medical anatomy, medical sideroom work, examination of the blood, *x*-ray and electrical therapy, morbid anatomy, and post-mortem examination; clinical instruction in medicine, surgery, gynaecology, child life and health, diseases of the skin, and infectious diseases; and special instruction in the diseases and methods of examination of the nervous, circulatory, respiratory, alimentary, and renal systems, and in diseases of the ductless glands. The general surgical course includes lecture-demonstrations on surgical anatomy, surgical pathology, and surgical *x*-ray diagnosis; clinical instruction in surgery at the Royal Infirmary and Royal Hospital for Sick Children; clinical instruction in venereal diseases; surgical out-patients, surgical and gynaecological operations, and special instruction in abdominal, genito-urinary, and other branches of surgery.

A course on internal medicine to be given from October 18 to December 10 has also been arranged. There will be four hours co-ordinated teaching daily throughout the course. Diseases of the various systems will be dealt with during successive weeks—for example, the first week will be devoted to cardiology. 10 a.m., methods of diagnosis; 11 a.m., clinics on cardiac cases; 12 noon, ward work; 2 p.m., correlated demonstrations on clinical pathology, radiology, etc.; 4 p.m., physiology of the circulation; 7 p.m., ward work. The graduates will be apportioned for ward work to the eight physicians on the staff of the Royal Infirmary. The attendance will be limited to thirty-two.

A series of clinical discussions, open to all graduates, is arranged on subjects of general interest. Among the special courses also arranged at various times of the year are: examination of the blood, diseases of the ear, nose, and throat, ophthalmoscopy, venereal diseases, *x*-ray physics and electrotechnics, tuberculosis, ultra-violet radiations and their uses, the interpretation and significance of modern diagnostic methods, surgical pathology, clinical surgery (including radiology), clinical medicine (including radiology and child life and health), urological surgery and treatment of fractures, neurological surgery, orthopaedic surgery, endocrinology, diseases of the nervous system, urology, modern methods of anaesthesia.

Particulars regarding the courses, dates of commencing, fees, etc., may be had on application to the Honorary Secretary, Postgraduate Courses in Medicine, University New Buildings, Edinburgh.

Postgraduate Medical Teaching in Glasgow

Organized postgraduate medical teaching is available in Glasgow under the auspices of the Postgraduate Medical Association. This association represents practically all the teaching institutions in Glasgow and the various teachers giving postgraduate instruction, and its business is managed by a board elected periodically by them. The chairman of the board is Professor Archibald Young. During the winter months special courses in vario

subjects are conducted. From November till May there is a series of weekly demonstrations and lectures, specially designed for local practitioners. Clinical courses are carried out during the summer months, and arrangements have also been made whereby a limited number of graduates may become attached to wards or out-patient departments nominally as clinical assistants for definite periods throughout the year. As such they work under the direct supervision of the physician or surgeon in charge, and carry out such detailed investigations as directed.

A general medical and surgical course is held each year during the last two weeks of August and the first two weeks of September, which is arranged to include most of the subjects of interest to the general practitioner. This year the course is being conducted from August 16 to September 10. The forenoons are occupied with general medicine and surgical diagnosis and minor surgery, in the Royal Infirmary and in the Victoria Infirmary. In the afternoons special subjects are dealt with in the special hospitals and in the special departments of the general hospitals, two subjects being considered each afternoon.

Further information may be had on application to Dr. James Carslaw, Secretary, Postgraduate Medical Association, 9, Woodside Terrace, Glasgow, C.3.

Dublin Postgraduate Course

The usual three-weeks postgraduate course will be held in Trinity College, Dublin, from September 20 to October 8, and, as on former occasions, it will consist of clinical instruction, formal lectures, and laboratory work.

Tropical Medicine

There are large and important Schools of Tropical Medicine in London and Liverpool, and the Colonial Office expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and commercial firms engaged in tropical enterprise commonly demand from medical applicants for employment corresponding evidence of special knowledge. Information with regard to these schools and diplomas and degrees is given in the paragraphs printed below. The University of London alone gives a degree (M.D.) in Tropical Medicine, and this, being an "internal degree," can only be taken by students who are medical graduates of that university. Diplomas in Tropical Medicine or Hygiene are granted by the universities of Edinburgh and Liverpool, and by the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England.

Diplomas and Degrees

LONDON UNIVERSITY.—Tropical medicine is one of the six branches in which the M.D. degree may be obtained. Candidates must normally have taken the M.B., B.S. degree not less than two years previously and must subsequently have attended a course of one academic year in tropical medicine at an approved school, or must have practised for two years in a region where tropical diseases prevail. In exceptional circumstances candidates may enter for the M.D. examination one year after taking the M.B., B.S. degree.

THE CONJOINT BOARD IN ENGLAND.—This body grants a diploma in tropical medicine and hygiene to candidates after an examination held in the months of January, April, and July. New regulations are in force, and twenty-one days' notice in writing instead of fourteen days is now required of candidates for all examinations. The hospitals and laboratories recognized for this diploma are the London School of Hygiene and Tropical Medicine, the Royal Army Medical College, the Liverpool School of Tropical Medicine, the School of Tropical Medicine, Calcutta, and the Usher Institute, Edinburgh. Particulars and conditions of admission to these examinations, fees, etc., may be obtained from the Secretary, Examination Hall, Queen Square, London, W.C.1.

UNIVERSITY OF LIVERPOOL.—A diploma in tropical medicine is given by this university to candidates possessing a recognized medical qualification who have attended the courses provided by the Liverpool School of Tropical Medicine and who have passed the examination held thrice yearly by the university examiners. The subjects of examination are: (*a*) parasitology; (*b*) entomology; (*c*) tropical medicine, including actiology, symptoms, pathology, diagnosis, and treatment of tropical diseases. Fee for the course, £21. A diploma in tropical hygiene (D.T.H.), open to the holders of the D.T.M., has also been established. The examination is held twice yearly by the university examiners. The subjects of examination are tropical hygiene (including sanitary engineering, vital statistics and epidemiology, and applied parasitology and entomology); practical sanitation, bacteriology, chemistry (including meteorology and climatology). Fee for the course, £12 16s. Further information can be obtained from the Dean of the Faculty of Medicine, University of Liverpool.

UNIVERSITY OF EDINBURGH.—Candidates for the diploma in tropical medicine and hygiene granted by the University of Edinburgh must be graduates in medicine and surgery of that university, or hold corresponding degrees or qualifications registrable with the General Medical Council of Great Britain, or of such other universities or medical schools as may be recognized for the purpose by the University Court. The course of instruction, which commences in October, extends over two terms. The examinations (Part I and Part II) are written, oral, and practical, and are held at the end of the courses. Candidates, on the first occasion of presenting themselves for examination in either part, are required to appear for all the subjects of that part. Those who fail to pass the entire examination in either part within a period of twelve months after the first appearance are required to reappear for all the subjects. The university is included in the list of institutions whose courses of instruction in tropical medicine may be taken by officers on appointment to the Colonial Medical Services or during study leave. Full particulars can be obtained from the Dean of the Faculty of Medicine, Edinburgh.

SCHOOLS

London School of Hygiene and Tropical Medicine (University of London)

(INCORPORATING THE ROSS INSTITUTE)

The courses of study in all branches of the work of the School will recommence in the autumn in the premises in Keppel Street (Gower Street), the gift of the Rockefeller Foundation, which has excellent laboratories and research rooms, a fine lecture theatre and classrooms, library, and museum.

The course of instruction for the diploma of the Conjoint Board in tropical medicine and hygiene is divided into two parts: Part I (three months), and Part II (two months). The examinations by the Conjoint Board will follow closely upon the end of the corresponding course of study. This revised course is recognized by the University of London as a course for associate students.

The dates of the courses for the session 1937–8 are:

Part I.—September 27 to December 17, 1937; January 3 to March 25, 1938; April 4 to June 24, 1938.

Part II.—January 17 to March 18, 1938; April 19 to June 17, 1938.

The course of instruction under Part I includes clinical demonstrations, applied pathology, and medical zoology. Part II comprises instruction in tropical hygiene, including, in relation to hygiene, bacteriology, entomology, and vital and medical statistics; and [illegible] tions.

Various short courses of instruction are also provided, and special arrangements are made in the case of students who are unable to attend at the beginning of a course.

The instruction in the division of clinical tropical medicine is given by the medical staff of the Hospital for Tropical Diseases and by visiting lecturers.

A whole-time course of study for the diploma in public health begins on September 28, and will extend over a period of nine months. It is arranged in compliance with the requirements of the General Medical Council, and students taking the course will be able to proceed to the academic diploma in public health of London University. The curriculum has been planned on very practical lines, and includes, in addition to work with medical officers of health in two selected areas, a large number of visits to places of public health interest. A series of special lectures, given by eminent authorities, is open to members of the medical profession as well as to students of the school. The London County Council, the City of London, and various other bodies have placed their resources at the disposal of the school for teaching purposes.

The course of study for the University of London diploma in bacteriology covers a period of one academic year beginning in October. Special three-monthly courses will be given in epidemiology and vital statistics. Courses are arranged in psychology and physiology applied to industry.

Inquiries with regard to all the above-mentioned courses should be addressed to the Secretary, London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, London, W.C.1.

University of Edinburgh

A course of instruction for the diploma, comprising a primary and a secondary course, is given during the autumn and spring terms (October to March), and includes tropical hygiene, bacteriology, entomology, and parasitology, diseases of tropical climates (systematic and clinical), tuberculosis, and venereal diseases. The university is included in the list of institutions whose courses of instruction in tropical medicine may be taken by officers on appointment to the Colonial Medical Services or during study leave. Full particulars can be obtained from the Dean of the Faculty of Medicine.

Liverpool School for Tropical Medicine

This school is affiliated with the University of Liverpool. The university grants diplomas in tropical medicine (D.T.M.) and in tropical hygiene (D.T.H.).

Two full courses of instruction, each lasting about eleven weeks, are given every year for the D.T.M., commencing respectively September 30, 1937, and January 3, 1938, and two courses for the D.T.H., beginning on January 6 and April 21, 1938. The D.T.H. can only be taken by those who have obtained the D.T.M. Students who do not desire to take the diploma examinations held by the university at the end of each term are given a certificate if attendance has been satisfactory.

Fees.—(1) For the D.T.M. course, 20 guineas; for the D.T.H. course, 10 guineas. (2) For the diploma examinations, 5 guineas. An extra charge of one guinea is made for the use of a microscope if required.

The laboratories of the school adjoin the university and the tropical ward of the Royal Infirmary. The dimensions of the building are 162 feet in maximum length by 84 feet in width. In addition to the basement, in which are accommodated the photographic department and large storage rooms, there are four floors. The ground floor has: (1) lecture theatre, with accommodation for about seventy students; (2) library; (3) a spacious museum with preparation room adjoining. The first floor has twelve rooms, in which are housed the departments of tropical medicine, tropical hygiene, and entomology. The second floor has the main class laboratory, 69 feet by 58 feet, excellently lighted; and three other rooms, devoted to the department of parasitology. The third floor has a large research laboratory and two research rooms. On the roof is an insectarium, a mosquito-proof house, and other accommodation.

Since its foundation the school has dispatched to the Tropics thirty-two scientific expeditions, many of the workers having been taken from among its students. The work done by the staff has been published in twenty-four special memoirs; in the *Annals of Tropical Medicine and Parasitology*, issued by the school; and in numerous articles in the scientific press.

The school also has a laboratory in the Tropics: the Sir Alfred Lewis Jones Tropical Laboratory in Sierra Leone, which was opened on January 10, 1922, and is staffed by the school. Further information may be obtained from the Laboratory Secretary, School of Tropical Medicine, Pembroke Place, Liverpool, 3.

Psychological Medicine

Medical men recently qualified, or whose experience with mental cases has been slight, are not infrequently at a loss when confronted with mental illness. They feel most assured when such illness is clearly the outcome of some definite bodily derangement, either as its accompaniment or its sequel, for they realize that its successful treatment will depend upon the recognition of the underlying malady. In this connexion one calls to mind the great diversity of delirious states, short or prolonged, induced by cerebral contusion, by bacterial invasion, by poisons from without or toxins from within the system; the neurological complications of syphilitic infections—for example, meningo-vascular syphilis and syphilitic encephalitis, generally known as general paralysis of the insane; the sequelae of encephalitis lethargica; the psychological concomitants of Graves's disease, myxoedema, pernicious anaemia; the "symptomatic" epilepsies, cardiovascular disease, and many more. In such cases no therapy directed towards the superficial symptoms alone can ultimately prove of avail; it must be radical, attacking the seat of the disease.

Mental illnesses of this nature do not bulk largely in the statistics of mental hospitals, whose numbers are of course swollen by the preponderance of those afflicted with chronic maladies, such as dementia praecox, the paraphrenias, and recurrent manic-depressive episodes. These psychoses may well be of organic derivation, but their treatment by interference with organic processes (for example, hypoglycaemic shock) though occasionally successful does not rest upon any sure scientific foundation. Hence, in the main, treatment is along social lines, consisting as it does of measures to prevent deterioration, to re-establish "contact" with life by promoting suitable interests and correcting maladjustments. Eventually, it may be hoped, scientific therapy will replace social therapy in these disorders.

Often enough mental illness is no inevitable accompaniment or aftermath of bodily disease, even though such exists, but may arise accidentally, as it were, as a by-product, produced by psychological repercussions, the stirring up of fears and anxieties, disappointments and animosities with which the illness has become inextricably interwoven. Such cases abound in practice as hypochondrias, and hysterical and other psychoneurotic states. Their understanding is only to be attained by the discovery of the obscure satisfaction their illness affords such patients; and, as in the pure psychoneuroses, knowledge of the psychological structure of the reaction is a *sine qua non* of a scientific therapy. Constitutional tendencies doubtless provide the soil for the production of both psychoses and psychoneuroses, and may be of such a kind as to be clearly recognizable as congenital mental defectiveness. A knowledge of psychological medicine to be requisite must embrace an understanding of the mental maladaptations met with in these three great groups. A practical acquaintance with all of them will prevent many diagnostic and therapeutic errors.

All too often a patient meets with some calamity, with all its attendant distasteful publicity, which a knowledge

of the practical aspects of mental disease might well have obviated. The treatment of psychotics is the province of the psychiatrist, but their early recognition is of supreme importance; and a working knowledge of such states will afford to the practitioner the means of their detection at a stage when curative measures are most likely to meet with success. Sufferers from one or other of the functional nervous disorders are innumerable, and too many of them pass from doctor to doctor unassuaged. The intervention of the specialist may be necessary in the treatment of the severer forms of hysteria and neurosis; but many practitioners have now acquired a sufficient knowledge of such states to be able to carry out a thorough and effective system of treatment themselves.

Mental deficiency cannot escape detection in its extremer forms, but numerous higher-grade defectives, many of whom are a menace to the community by reason of their criminal propensities, escape recognition; and especially must the student who proposes to take up a career in the school medical service or in the prison service make sure that he is thoroughly grounded in this subject.

It is generally assumed that the mental expert is equally well acquainted with each of these departments of psychological medicine—the psychoses, the psychoneuroses, and mental deficiency. This, however, is seldom the case. In the past there has been too rigid a specialization, largely the outcome of administrative requirements. Recently, owing to the establishment of mental out-patient clinics and the coming into force of the Mental Treatment Act, which gave sanction to the admission of voluntary patients into public mental hospitals, the psychiatrist's experience has been considerably enlarged; and his province has been still further widened where the authorities have elected to place the selfsame physician in charge of both the psychiatric and the mental deficiency units. It is to be hoped that this process of co-ordination will continue, and that it will eventually embrace the systematic psychological examination of prisoners or, better still, of accused persons awaiting trial.

However that may be, the medical student intending to devote himself to psychiatry will be well advised to neglect no opportunity of furthering his acquaintance with every branch of psychological medicine.

Mental Hospital Appointments

Those who take up psychiatry as a career work as medical officers of public or private mental hospitals or similar institutions. Except in the larger institutions, such as those under the control of the London County Council, where a number of the medical officers are allowed to live out if married, the medical staff are resident officers, having board, lodging, etc., either in the hospital itself or a residence in the grounds. Junior assistant medical officers receive about £350 to £450 per annum, and senior assistant medical officers about £500 to £700, in both cases with board, lodging, laundry, etc., in addition; if married, the board, etc., is commuted for cash. As the mental hospitals are under local control the salaries vary much in different mental hospitals. Medical superintendents, whose pay commonly ranges between £800 and £1,500 per annum, are provided with a house in the grounds of the hospital, and draw various allowances.

Since the passing of the Asylums Officers Superannuation Act of 1909, doctors on the established staff of a public (county or borough) mental hospital, by paying as contributions 3 per cent. of the value of their appointments, may retire at the age of 55 (provided that they have completed twenty years' service), on a pension computed at the rate of one-fiftieth of their salary and emoluments for each completed year of service; but inasmuch as the benefits of this Act are restricted to the public mental hospitals and are forgone on transfer to private or chartered mental hospitals, and the provision for widows is inadequate and uncertain, less inducement is offered than might be to joining the service.

Appointments to the public mental hospitals are made by the visiting committees. Promotion tends to be slow and uncertain. The higher positions are not always advertised: but in recent years there has been a general improvement in the conditions of service.

Mental hospitals are fast developing an atmosphere approximating more closely to that of the general hospitals. Whilst routine, administrative and clerical, necessarily bulks largely in mental hospital duties, there is ample material, time, and scope for purely medical work and research, and there is no branch of medicine in which research is more needed.

Instruction in Mental Disorder

Though at the present time the instruction given to the student is scarcely adequate to supply the knowledge of mental disorder requisite for the needs of the general practitioner, the facilities for the study of psychological medicine in the general hospitals are now much greater than in former years. Thus many of the teaching hospitals have out-patient departments for the treatment of mental cases, and in some of these hospitals special lectures are given in psychopathology. These facilities need not be utilized by the student, however, and the compulsory part of the unreformed curriculum is generally confined to formal lectures and a few attendances at some mental hospital. Here the student is apt to see mainly the advanced states of mental disease, and is likely to gain the impression that mental disorder is necessarily related to segregation and custody. We would therefore impress upon him the importance of attending the out-patient department for mental disorders, where he will be able to observe the mild and early cases such as he will hereafter meet with in general practice.

At Guy's and at the Middlesex Hospital a small number of beds are allocated for the treatment of patients suffering from mental disorder; and we learn that in St. George's Hospital, when rebuilt, some fifty beds will be provided for cases which will include psychotic patients as well as those who suffer from psychoneurotic ailments. This is a bold and enlightened policy, and one which will certainly prove of inestimable benefit; for quite apart from therapeutic advantages it will enable the student to gain true insight into the relation between mental disorder and medicine as a whole, and he will realize that it is a form of illness to be studied with other diseases and to be treated along similar lines.

In London postgraduate courses of instruction of a comprehensive kind are given at the Maudsley Hospital, Denmark Hill; and at the National Hospital, Queen Square, courses are arranged to meet the requirements for the diploma in psychological medicine in regard to nervous diseases. Besides its ordinary postgraduate teaching in neurology the West End Hospital for Diseases of the Nervous System holds courses on common disturbances of the nervous system, and provides instruction in neurology for the D.P.M. Courses in mental deficiency are arranged by the University of London. There are also postgraduate courses at the various universities which grant diplomas of psychological medicine or of psychiatry.

There are various facilities for instruction in psychotherapy and for the study of the psychoneuroses. The Institute of Medical Psychology in London has systematic courses of instruction dealing especially with the minor forms of mental disorder which are not usually met with in the mental hospitals. At the London Child Guidance Clinic fellowships are open to medical graduates who hold a diploma in psychological medicine.

Diplomas

Those who are taking up psychiatry as a career will find it essential to obtain a diploma in psychological medicine. Such a diploma is not at present compulsory for a permanent position on the staff of all mental hospitals, but it will probably become so in course of time, just as it is now essential to obtain the D.P.H. if a career in public health is contemplated. Psychiatry is one of the branches of medicine which candidates for the M.D. degree of the Universities of London and Edinburgh can take up, and, in addition, diplomas in psychological medicine (D.P.M.), to which reference has been made, can be obtained from the Universities of London, Edinburgh, Durham, Leeds, Manchester, Dublin, and the National University of Ireland, and from the Conjoint Board in England. The requirements for a diploma differ to some extent in the various universities and colleges.

UNIVERSITY OF LONDON (D.P.M.)

The diploma awarded by the University of London certifies that the candidate has passed the examination in psychological medicine with special knowledge of one or other of the two branches, either psychiatry or mental deficiency, special provision being made for this in Part B of the examination. The examination consists of two parts, A and B; Part A must be passed before Part B is taken. It is held twice in each year—Part A in March and October, and Part B in April and November. Part A consists of anatomy, histology, and physiology of the nervous system (one paper and a practical examination), and psychology (one paper and an oral examination). Part B consists of neurology (one paper and a clinical and an oral examination) and psychological medicine (two papers and a clinical and an oral examination). Paper I tests the candidate's general knowledge of both mental diseases (psychiatry) and mental deficiency, and Paper II is a special one consisting of two separate alternative sections, the first section relating to mental diseases (psychiatry), and the second section to mental deficiency. A copy of the Regulations and of the Syllabus of Study will be sent on application to the University Extension Registrar, University of London, W.C.1.

CONJOINT BOARD IN ENGLAND (D.P.M., R.C.P. AND S.ENG.)

Both parts of the examination are held in June and December. The examination comprises the following subjects, with special regard to their relation to psychological and general medicine:—Part I: (*a*) anatomy (macroscopic and microscopic) and physiology of the nervous system; (*b*) psychology. Part II: (*a*) clinical neurology and neuropathology; (*b*) psychological medicine, including psychoneuroses and mental deficiency, and their legal relationships. The examination will be written and oral in Part I, and written, oral, and clinical in Part II. No special certificates of study are required for Part I, but before entering for Part II candidates must produce certificates of: (*a*) having attended clinical instruction for at least two months at a recognized hospital for nervous diseases, or in the department for nervous diseases of a recognized general hospital; (*b*) having held a resident or whole-time appointment at an institution for mental diseases where clinical instruction is given, recognized for the purpose, for a period of six months, or having attended clinical instruction in psychological medicine at a recognized institution during twelve months. Further particulars may be obtained from the Secretary, Examination Hall, 8-11, Queen Square, London, W.C.1.

UNIVERSITY OF EDINBURGH (DIPL. PSYCH.)

Candidates for the diploma must have held subsequent to graduation: (*a*) a resident appointment for one year in a hospital for mental disorders approved by the Faculty; or (*b*) a six months' appointment as above, and six months' practical study of nervous diseases in a special or general hospital approved by the Faculty. The examination comprises:—Part I: (*1*) anatomy of the nervous system: (2) physiology of the nervous system; (3) psychology. Part II: (1) neuropathology; (2) psychiatry and clinical psychiatry; (3) clinical neurology. Further particulars may be obtained from the Dean of the Faculty of Medicine, the University of Edinburgh.

UNIVERSITY OF LEEDS (D.P.M.)

The examination is in three parts, and is written, oral, and practical. Subjects of examination:—Part I: (1) the development, anatomy, and histology (human and comparative) of the nervous system; (2) the physiology of the nervous system, and of the organs of special sense; (3) general psychology. Part II: (4) the pathology of the nervous system. Part III: (5) clinical psychiatry; (6) experimental and morbid psychology; (7) (*a*) clinical neurology; (*b*) mental hospital administration; (c) medico-legal aspects of insanity. Candidates, in order to pass, must satisfy the examiners in the practical and clinical parts of the examination in Parts II and III respectively. They may present themselves for the three parts of the examination separately, or at the same time, provided that no candidate shall be allowed to pass in Part II unless he has already passed in Part I, or in Part III unless he has already passed in Parts I and II. Evidence must be produced by candidates as to attendance of approved courses of instruction before they submit themselves to Part I of the examination. Particulars may be obtained from the Academic Sub-Dean, School of Medicine, Leeds.

UNIVERSITY OF MANCHESTER (D.P.M.)

The examination is in two parts. Before presenting themselves for either part of the examination candidates must produce evidence of having attended, subsequent to qualification, certain approved courses of instruction, particulars of which may be found in the prospectus of postgraduate courses, and must also have resided for at least six months in a Mental Hospital. The course of study extends over a period of three university terms, two of which must be taken in the university: the remaining term may be taken at the university, or at some approved institution. The subjects of examination are:—Part I: (1) a written and practical examination on the development, anatomy (human and comparative), and physiology of the nervous system; (2) a written and practical examination in psychology (theoretical and experimental). Part II: (1) a written and practical examination in pathology in relation to the nervous system; (2) a written, clinical, and oral examination in psychological medicine; (3) a clinical and oral examination in clinical neurology. For further information application should be made to the Dean of the Medical School, the University, Manchester.

UNIVERSITY OF DURHAM (D.PSY.)

The examination for the Diploma in Psychiatry consists of two parts. Part I: anatomy, physiology, pathology, and bacteriology; Part II: psychology and experimental psychology, neurology and psychiatry (systematic and clinical); and candidates may present themselves for the whole examination or for either part separately. Particulars of the courses of instruction may be had on application to the Dean, the Medical School, King's College, Northumberland Road, Newcastle-upon-Tyne.

UNIVERSITY OF DUBLIN DIPLOMA

A postgraduate diploma in psychological medicine is conferred upon registered medical practitioners who have held a resident medical appointment at a recognized institution for the treatment of mental diseases for twelve months, or who have held such an appointment for six months and have attended clinical instruction at an approved institution for six months. Particulars of special courses of instruction may be obtained from the Registrar of the School of Physic, Trinity College, Dublin.

NATIONAL UNIVERSITY OF IRELAND (D.P.M.)

The National University of Ireland grants a diploma in psychological medicine. Application should be made to the Registrars of the Constituent Colleges, University College, Dublin; University College, Cork; and University College, Galway, for all information as to courses, etc.

CONJOINT BOARD IN IRELAND (D.P.M.)

There are two examinations in connexion with the diploma in psychological medicine. Part I consists of (*a*) anatomy and physiology of the nervous system, (*b*) psychology. Part II: (*a*) neurology, including clinical and pathology neurology; (*b*) psychiatry, or psychological medicine, including its legal relationships. Fees £6 6s. for each part.

Courses of Instruction

MAUDSLEY HOSPITAL, LONDON

A course of instruction for the Diploma in Psychological Medicine is given annually at the Maudsley Hospital, Denmark Hill, from January to May inclusive, the details of the last course being as follows. The course consisted of two parts. In the first part lectures on the anatomy of the nervous system were given by Professor Le Gros Clark, with practical instruction by Mr. C. Geary. A course of lectures on the physiology of the nervous system, with demonstrations in physiological psychology, was given by Professor F. Golla; a series of lectures on biochemistry in relation to the nervous system by Dr. S. A. Mann; on mental mechanisms by Professor E. Mapother; on theoretical and practical psychology by Dr. J. M. Blackburn; and on the practical application of intelligence tests by Dr. C. J. C. Earl. For the second part of the course lectures on the general principles of psychiatry, with a series of clinical demonstrations on the same subject, were given by Professor Mapother; on psychopathology and the principles of psychotherapy by Dr. Bernard Hart; on general treatment by Dr. T. Tennent; on laboratory methods by Dr. Mann; and demonstrations on the pathology of the central nervous system by Mr. Geary. Dr. Tredgold lectured on mental deficiency, Dr. M. Creak on mental abnormalities of children, Dr. East on crime and insanity, and Sir Hubert Bond on the legal relationships of insanity. Dr. S. Nevin gave instruction on clinical neurology at the Hospital for Nervous Diseases, Maida Vale, and Mr. Foster Moore on eye changes as applied to psychiatry. Dr. A. J. Lewis gave a series of demonstrations on the psychoneuroses and affective disorders. During the course a series of clinical demonstrations were arranged at the various London county mental hospitals and institutions for mental defectives. The fee for the whole course (Part I and Part II) was 15 guineas, or for either part separately 10 guineas; for one single series of lectures in Part I the fee was 4 guineas, and in Part II 2 guineas. Inquiries as to lectures, etc., should be addressed to Professor Golla, Honorary Director of the Medical School, Maudsley Hospital, Denmark Hill, S.E.5, and as to clinical facilities to Professor Mapother, the Medical Superintendent of the hospital.

BETHLEM ROYAL HOSPITAL

The Bethlem Hospital is situated at Monks Orchard, Eden Park, Beckenham, Kent, where every facility is available for the clinical study of nervous and mental disorder. The classification of patients is a prominent feature in the administration of the hospital, and treatment in all its modern and specialized aspects can be carried out at the Lord Wakefield of Hythe Treatment and Research Laboratories. Two courses of lectures and practical instruction for the Diploma in Psychological Medicine are given each year, in spring and autumn. These are of an intensive character, one commencing in September and completed in early December, and the other commencing in the middle of January and completed in the middle of April. Each course consists of two parts: Part A includes lectures and demonstrations on the anatomy, histology, and physiology of the nervous system, with lectures on psychology and demonstrations in experimental psychology. Part B comprises lectures and clinical demonstrations in psychology, including lectures and demonstrations in the morbid anatomy of the nervous system; a series of lectures, with clinical demonstrations, on different branches of psychological medicine; and lectures, with clinical demonstrations, on mental deficiency. Entrants for the course who pay a composition fee of 15 guineas may, if due notice is given, attend either Part A or Part B of one course and postpone the other part until the next session. An entrant who wishes to attend one part only pays a fee of 10 guineas. An entrant who takes the complete course can attend the general clinical practice of the hospital, on payment of 5 guineas for six months, or 10 guineas for one year, but an entrant who does not take either part of the course and desires to attend the clinical practice of the hospital must pay a fee of 5 guineas for each three months of attendance. To enable postgraduates to obtain special experience in this branch of medicine clinical assistants are appointed from time to time. Further particulars may be obtained from the Physician-Superintendent, Monks Orchard, Eden Park, Beckenham, Kent.

NATIONAL HOSPITAL, QUEEN SQUARE

Special courses for the Diploma in Psychological Medicine are not held at the National Hospital, Queen Square, London, W.C.1, but lectures are given which cover all the work necessary for the more organic side of the examination—namely, anatomy, physiology, and pathology of the nervous system and clinical neurology.

THE TAVISTOCK CLINIC

The course of training arranged by the Tavistock Clinic, Malet Place, London, W.C.1 (formerly the Institute of Medical Psychology), covers the whole field of the psychoneuroses. For the purposes of the University of London postgraduate diploma in psychological medicine, it provides facilities for the practice in psychoneuroses and early psychoses and in mental retardation and delinquency required under Regulation 3, Section 2 (*d*) and (*e*), for this diploma.

Postgraduate courses of lectures in psychotherapeutic theory and method are given. These consist of a five weeks introductory course of lectures with case discussions, and a systematic course of lectures, given twice a week throughout the year, which may be attended by any qualified medical practitioner. The year's clinical course is arranged for those who wish to practise psychotherapy, and are prepared to give a minimum of twelve hours a week (attending on three days). The course is limited to a membership of twelve practitioners. The full course of the Clinic, designed for those who wish to specialize in psychotherapy, is a two-year course, application for the second year's course being made by those who have completed the year's clinical course.

A course of ten lectures for general practitioners on "The Neuroses in General Practice" will be given on Thursday evenings beginning early in October, while Professor Jung will give five seminars in April, 1938.

THE INSTITUTE OF PSYCHO-ANALYSIS

The course of training arranged by the Institute of Psycho-Analysis (London Clinic of Psycho-Analysis), 96, Gloucester Place, W.1, offers medical students and practitioners the opportunity of acquiring such knowledge of psycho-analysis as will qualify them to practise it. The curriculum extends over a minimum of four years.

The Public Health Medical Services

The Ministry of Health for England and Wales is a central authority to secure the adoption and effective administration of measures conducive to the health of the people, and to promote research work and the proper training of persons for health services.

For the purpose of local public health administration the whole of England and Wales is divided into counties, county boroughs, boroughs, and urban and rural sanitary districts. The administrative County of London, exclusive of the City of London, is divided into twenty-eight metropolitan boroughs.

The public health medical services for Great Britain embrace between three and four thousand medical men and women who give whole-time services; and, in addition, a large number who give part-time services. Less than one-half of the medical officers of health of England and Wales are whole-time officials; but it is certain that their number will be considerably increased in the future, for the Ministry of Health is favourable to whole-time services, and certain provisions of the Local Government Act of 1929 will assist in this connexion. Medical officers for these services are appointed by the Ministry of Health for England, and the Boards of Health for Scotland and Wales; and by the many local public health authorities.

The Medical Services of the Central Authority

The medical work of the Ministry of Health has been organized under the control of a Chief Medical Officer. It is subdivided into seven sections, with a senior

medical officer at the head of each. About a hundred and twenty medical officers are employed, of whom rather more than one-half are regional and deputy regional medical officers employed for certain duties under the Health Insurance Acts. Briefly, the sections deal with environmental hygiene, epidemiology, and international health; maternity and child welfare; tuberculosis and venereal diseases; the supervision of the food supplies; sanitary administration in relation to infectious diseases; national health insurance; and the school medical service. Vacancies in the staff are advertised from time to time in the medical journals, and appointments are made by the Minister on the recommendations of a Selection Committee. These are Civil Service appointments, subject to the usual conditions as to pension, holidays, etc. Medical officers are also employed for similar services by the Welsh Board of Health (Cardiff) and the Department of Health for Scotland (Edinburgh).

The Medical Services of the Local Authorities

These appointments include: medical officers of health, tuberculosis medical officers, maternity and child welfare medical officers, venereal diseases medical officers, and school medical officers—who work in the health interests of the school child. By the larger local public health authorities assistant medical officers are also appointed, and these posts often serve as stepping-stones to the higher offices as vacancies, which are required to be advertised, occur.

Medical Officers of Health

The duties of the medical officer of health are: to inform himself upon all influences affecting, or threatening to affect, injuriously the public health within his district; to advise his sanitary authority upon all matters relating to health; and to perform all the duties imposed upon him by statutes, by-laws, and regulations. He must prepare and submit to his local authority special and annual reports; give immediate information to the Ministry of Health of any serious outbreak of disease, and forward weekly returns of notified cases of infectious disease. Subject to the instruction of his sanitary authority, he must direct or superintend the work of sanitary inspection.

Under regulations made in 1935 no person is qualified to be hereafter appointed or reappointed as a medical officer of health of any district or combination of districts unless, in addition to the qualifications prescribed by any statute, he is also either registered in the *Medical Register* as the holder of a Diploma in Public Health, Sanitary Science, or State Medicine. The appointment of a medical officer of health is made subject to the approval of the Minister of Health.

The Public Health (Officers) Act, 1921, which was promoted by the British Medical Association, provides that a whole-time medical officer of health of a county borough or urban and rural district in England and Wales, a part of whose salary is contributed by the Exchequer, shall not be appointed for a limited period, and shall not be removed from his office except by or with the consent of the Minister of Health.

Under the Sanitary Officers Order, 1926, a medical officer of health who does *not* devote his whole time to the duties of his office, but a portion of whose salary is obtained from Exchequer grant, may be appointed without any limit of time; in which case he cannot be removed from office without the consent of the Minister. If he is appointed for a specified term, say one year, he continues to hold office from year to year unless the Minister consents to his removal. Where the electing body pays the whole of the salary of such a medical officer of health he may be dismissed from office without reference to the Minister of Health. Therefore there is now security of tenure for the posts filled by the large majority of medical officers of health.

A considerable number of authorities have now adopted the Local Government and Other Officers Superannuation Act, 1922. Under this Act, if an officer is incapacitated by ill-health after ten years of service, or if he has reached 65 years of age, he is entitled to superannuation. Such superannuation is to be on the following scale: after ten years' service, 10/60 of the average salary which he received during the last five years of employment; after eleven years, 11/60; and so on up to a maximum of 40/60 after forty years of service. This Act, however, remains permissive, and it fails to make due allowance, in computing service for purposes of superannuation, for the more advanced age, as compared with other officials, at which the medical officer of health can enter the public service. In these two respects the position reached falls short of that for which the British Medical Association has been working for some years. Apparently the Government feels that the time has come when such a provision should be made general in its application; and a Bill before Parliament in June, 1937, aimed at making superannuation compulsory upon all local sanitary authorities.

In Scotland the position is different in some respects. Under the Public Health (Scotland) Act, 1897, no one can be appointed as medical officer of health for any area unless he possesses the Diploma in Public Health. No medical officer can be removed from office except with the sanction of the Board of Health. A "proper" salary must be paid, and the local authority may not bring about the resignation of the officer by indirect means, such as reducing the salary or attaching new conditions to the appointment. The Act says nothing about superannuation or the age of retirement.

School Medical Officers

School medical officers are appointed by local education authorities. Primarily their duty is to detect among the children attending the public elementary schools any physical or mental defect which may retard education, and to inform the parents of its existence. Most approved schemes of medical inspection include arrangements which facilitate the task of parents in obtaining for their children the necessary treatment, check the results of this treatment, and keep each defective child under skilled observation both at home and at school until it has passed altogether out of the education authorities' hands. Indeed, it is now the practice for the education authorities themselves to provide for certain ameliorative work, notably the prescription of glasses where necessary, dental treatment, the removal of adenoids and tonsils, and treatment in connexion with certain communicable diseases of the skin and some physical and mental defects. The general effect of all schemes alike is to make the inspection imposed by law of benefit, not merely to the individual child, but to the community at large, by preventing the development of conditions which lead to the existence of inefficient citizens among the adult population. The work is so related to that of medical officers of health that, generally, the senior school medical officer fills both appointments, his work, when necessary, being supplemented by that of whole- or part-time assistants. A diploma in public health is almost always required of those entering the school medical service of local education authorities.

In Scotland, while the statutory authority for the work of the school medical service is different, the scheme of work is broadly the same.

Tuberculosis Medical Officers

A tuberculosis medical officer is an officer with special training and experience in tuberculosis work, and of a suitable age and attainments to command general confidence. In England such officers are appointed by county councils and county borough councils, and their duties are to carry out the work of diagnosis of tuberculosis, to advise as to treatment, and to take charge of the work of tuberculosis dispensaries and sanatoria where these are in operation. The work under tuberculosis schemes is co-ordinated with the general public health work of local authorities, and so the medical officer of health is often appointed as the chief tuberculosis officer even when a special tuberculosis officer is on the staff of the local authority. The arrangements in Scotland are very similar. In Wales tuberculosis work is carried out under the aegis of the Welsh National Memorial Association, upon which the constituent local authorities are represented, and the powers of appointment of tuberculosis officers are vested in the Association.

Maternity and Child Welfare Medical Officers

Any local public health authority, however small, may make arrangements for maternity and child welfare work within its area, although very generally the smaller local authorities are provided for in county council schemes; but the Minister of Health may transfer the administration of the maternity and child welfare work of an area to the local education authority where this would conduce to more efficiency. For the schemes of the smaller local authorities the services of a part-time medical officer are obtained when the medical officer of health does not himself undertake the duties; but for the larger schemes special whole-time appointments are made. The maternity and child welfare medical officer is responsible for the work at the centres provided and for directing the home visitations; and these activities are closely co-ordinated with the other branches of public health work directed by the medical officer of health.

Much of this work was commenced in different parts of the country by voluntary organizations; some of it still remains in their hands, but is now fairly closely linked up with the public health local authority; and the tendency is for the whole of it to be undertaken by the local authorities. A large number of women medical officers have been appointed to these posts.

Venereal Diseases Officers

Schemes for the diagnosis and treatment of venereal diseases are provided and administered by county councils and county borough councils. In some cases the officer is on the whole-time public health staff, and in others he is a part-time official. Special knowledge and practical experience in the treatment of venereal diseases are required. The officer appointed for either whole-time or part-time service works at one or more clinics, and also gives instruction and assistance in the treatment of venereal diseases to general practitioners, who, if they desire to obtain experience, are allowed to attend the clinics.

Remuneration in the Public Health Service

In order to ensure that public health authorities may obtain skilled and highly trained medical officers it is essential that such officers should receive salaries commensurate with their attainments, bearing a reasonable relationship to the time and money expended in fitting them for their important and responsible duties, and comparing well with the income which might be secured in other lines of medical work. With this end in view the British Medical Association and the Society of Medical Officers of Health prepared a scale of minimum commencing salaries for whole-time public health medical officers.

The scale, which was put into operation in 1925, was attended with a large measure of success. There were, however, certain aspects of it which were not entirely satisfactory. For instance, it was not retrospective, and did not, therefore, apply to medical officers who had been appointed prior to the date on which it came into force, and it contained no provision for specified increments in salary.

As the result of a series of conferences between representatives of the various Associations of Local Authorities, the British Medical Association, and Society of Medical Officers of Health, under the chairmanship of Lord Askwith, a "Memorandum of Recommendations" in regard to salaries of public health medical officers was drawn up and came into force in June, 1930. This Memorandum was published in our *Supplement* on July 27, 1929. Copies of the Memorandum may be obtained from the Medical Secretary of the Association. It has been adopted by the Representative Body, and has been accepted by the representatives of the following bodies representing local authorities:

The Association of Municipal Corporations.
The Urban District Councils Association.
The Rural District Councils Association.
The London County Council.
The Association of Education Committees.
The Mental Hospitals Association.
The Metropolitan Boroughs Standing Joint Committee.

Practically all the local authorities of England and Wales are now applying this Memorandum. The advertisements of local authorities who are not prepared to put into effect the whole of the Recommendations are not accepted by the *British Medical Journal*, which in this matter has the co-operation of the *Lancet* and the *Medical Officer*.

The great advantage of the Memorandum is that it embodies a general agreement as to salaries and conditions of service, and is not merely a scale of salaries. It is retrospective, and will therefore benefit officers appointed before it came into force. It provides stated increments for practically all medical officials except whole-time chief, deputy, and chief assistant medical officers of health, who, as chief medical officials, may, it is presumed, depend that the commencing salaries mentioned in the agreement will be increased for meritorious work and years of service; and it contains a very valuable provision by which questions of difficulty can be referred to an advisory committee.

The British Medical Association represents the profession on the advisory committee, putting the point of view of the public health officers in the discussion of the cases of those who are receiving remuneration less than that laid down in the scale.

For the right class of practitioner with leanings in the direction of public health work the service offers an attractive career, but it must be recognized that there are comparatively few posts which carry high salaries.

Curriculum for the Diploma in Public Health

The existing Regulations and Rules of the General Medical Council for Diplomas or Degrees in Public Health came into force on October 1, 1931.

The curriculum must extend over a period of not less than twelve calendar months (or an academic year of whole-time study covering a period of not less than nine calendar months) subsequent to the attainment of a registrable qualification.

Every candidate for Part I of the examination for the D.P.H. must produce evidence of having attended, during

not less than 280 hours, at an institution approved by the licensing body granting the diploma, practical instruction in:

(*a*) Bacteriology and parasitology (including immunology, serology, medical entomology, etc.), especially in their relation to diseases of man, and to those diseases of the lower animals which are transmissible to man;

(*b*) Chemistry, physics, radiology, and electrology in relation to public health;

(*c*) Physiology and biochemistry in their application to nutrition and hygiene;

(*d*) Meteorology and climatology in relation to public health.

Every candidate for Part II must produce evidence of having received, during not less than 120 hours, at an approved institution, instruction in the following subjects:

(*a*) The principles of public health and sanitation;

(*b*) Epidemiology and vital statistics;

(*c*) Sanitary law and administration (including public medical services);

(*d*) Sanitary construction and planning.

Every such candidate must also have attended for three months on the clinical practice of a recognized hospital for infectious diseases, and have received therein instruction in the methods of administration. At least twenty-four daily attendances of not less than two hours each are required.

Every candidate for Part II must also produce evidence that he has, during a period of not less than six months, been engaged in acquiring a practical knowledge of the duties of public health administration under the supervision of a medical officer of health, who must certify that the candidate has received, during not less than three hours on each of sixty working days, practical instruction in these duties, and also those relating to:

(*a*) Maternity and child welfare service;

(*b*) Health service for children of school age;

(*c*) Venereal diseases service;

(*d*) Tuberculosis service;

(*e*) Industrial hygiene;

(*f*) Inspection and control of food, including meat and milk.

(Instruction in (*a*) to (*f*) must include attendance at the centres, clinics, institutions, and premises concerned.)

Certificates of having received this prescribed instruction in public health administration can be given only by a medical officer of health who devotes his whole time to public health work; or by the medical officer of health of a sanitary area having a population of not less than 50,000; or in Ireland by the medical superintendent officer of health of a county or county borough having a population of not less than 50,000.

The General Medical Council has judged it desirable to add the following note to their Resolutions and Rules:

The observance of these rules does not prevent any licensing body granting the degree or diploma, or an institution approved by such body from requiring a larger number of hours than those specified to be spent in the study of prescribed subjects, or requiring instruction to have been given in subjects additional to those prescribed. Indeed, the use in the rules of the word "include" implies that knowledge of other subjects may possibly be tested as part of the examination. The duties of local government authorities and their medical officers are constantly being extended by the legislature, and modern scientific research is making available in several new directions knowledge of the greatest importance to medical officers of health and to other medical officers engaged in public health work. These factors emphasize the value to medical officers of a knowledge of such subjects as hospital provision, equipment, and administration; of mental disorder and deficiency; and of genetics—all in their relationship to public health; and these subjects may well become part of the curriculum of public health instruction.

In May of this year (1937) the General Medical Council adopted some alterations in the Rules, and these are to come into operation on October 1, 1938. After this date a candidate for the D.P.H. will no longer be required to hold a *registrable* qualification in medicine: nor need two years elapse between the date of obtaining his medical qualification and his entry to the final examination for the D.P.H. Thus a student will be able to proceed directly after his medical qualification to the course of training for the D.P.H., and at the conclusion of this he may sit for the examination: but he will not be granted the diploma until two years from the date of his qualification. Therefore the D.P.H. will be regarded as a postgraduate diploma, the necessity for those of the public health service to hold a *registrable* qualification being secured by the Local Government Act, 1933.

As to the training courses, it will be required that not less than three consecutive calendar months shall be devoted to whole-time study. Practical instruction will be required only in bacteriology and parasitology (including immunology, serology, and medical entomology, in relation to the public health). The examination will not require practical laboratory work in any other subjects. So instruction in chemistry, physics, physiology, and biochemistry need not include laboratory exercises by students, although doubtless these will be provided at most schools.

Examination for the Diploma in Public Health

The examination for the D.P.H. is divided into two parts, and no candidate is allowed to sit for the final part until after an interval of two years from the date of his obtaining a registrable medical qualification. The object of this two years' interval is "to provide opportunity for candidates, while passing from the state of pupilage to that of responsible practice, to give mature consideration to the obligations and duties involved in the work of the Public Health Service, and to acquire direct experience of medical work in a responsible capacity, in general medical practice, in hospital or laboratory appointments, or in any special branch of clinical work or study related to State Medicine."

Any candidate who possesses a qualification entitling him to registration on the British, Dominion, or Foreign List of the *Medical Register* can be admitted to examination, provided he has complied with the regulations of a licensing body in the United Kingdom based on the rules of the General Medical Council, and that before being admitted to Part II of the examination his qualification has been registered in the United Kingdom.

The examination for Part I embraces practical, written, and oral tests in the subjects set out in the Regulations of the curriculum relating to that part; and the same is true of the examination for Part II. A candidate must pass in all the subjects of Part I before being admitted to the examination for Part II.

Only diplomas in public health granted by approved bodies in the United Kingdom are registrable in the *Medical Register*.

Training and Examining Centres for Public Health Qualifications

Degrees in Sanitary Science are conferred, in England, by the Universities of London, Durham, Liverpool, and Birmingham: in Scotland, by the Universities of Glasgow and Edinburgh; and in the Irish Free State, by the National University of Ireland. In most cases these degrees are conferred only upon medical graduates of the universities granting them.

Whereas the requirements of the General Medical Council for the Diploma of Public Health are strictly conformed to, these requirements are extended, as a rule, as to both the period and the scope of special studies demanded, before Degrees in Sanitary Science are granted.

Most universities in Great Britain and Ireland grant a D.P.H. and provide for the necessary training. The English and Scottish Conjoint Boards and the Irish

Colleges also grant these diplomas. The School of Physic of Trinity College, Dublin, was the first body in the British Isles to arrange for courses of instruction and for a Diploma in Public Health. At Cambridge the teaching and training courses for the D.P.H. were terminated at the end of 1931.

In London the postgraduate teaching and training in public health is provided mainly at one centre—the London School of Hygiene and Tropical Medicine (University of London); the only other training centre which offers such facilities is the Royal Institute of Public Health, Queen Square, Bloomsbury, W.C.1.

The course of study for the D.P.H., as provided by the London School of Hygiene and Tropical Medicine (Keppel Street, Gower Street, London, W.C.1), which is a School of the University of London, covers a period of nine calendar months in the case of whole-time students, and is so designed that students can proceed to the academic diploma of the University of London. The course of study provided in the School is intended primarily for those who can devote the whole of their time to the work. A uniform date of entry is essential in a course of this nature, and students must commence work at the beginning of the autumn term. The session opens on September 28 and closes at the end of the following June. Examinations in Parts I and II of the Academic Diploma in Public Health of the University of London are held twice yearly—Part I in January and June, and Part II in July and September. Students who possess a medical qualification which is not registrable with the General Medical Council may be permitted to enter for the examination for the Academic Diploma in Public Health, and a special School Certificate in Public Health will be awarded to all such students who satisfy the examiners. The School undertakes research work in preventive medicine, and members of the public health services have a common room placed at their disposal, and are invited to attend staff and special lectures.

The University of Liverpool grants a Diploma in Public Health to medical practitioners eligible under the rules drawn up by the General Medical Council. The course of study for the diploma extends over a period of not less than twelve calendar months (or an academic year of whole-time study covering a period of not less than nine calendar months) subsequent to the attainment of a registrable qualification. The examinations for Part I are held annually in March and June, and for Part II in June and October. On the recommendation of the examiners, the diploma may be awarded with a mark of distinction in the case of candidates who reach a required standard. All particulars regarding courses of study, examinations, and fees can be obtained on application to the Dean of the Faculty of Medicine.

The University of Manchester has a well-equipped department of bacteriology and preventive medicine, where candidates preparing for the examinations of the various university and examining boards for the Diploma in Public Health can obtain instruction. It also prepares candidates for the Diploma in Bacteriology granted by the university. Full particulars can be obtained from the Dean of the Medical School, the University, Manchester.

The University of Wales grants a Diploma in Public Health under conditions which comply with the requirements of the General Medical Council. Examinations are held twice yearly for Part I in June and October, and for Part II in October (immediately after the examination for Part I in that month) and in January. Candidates must hold a registrable qualification and have taken the courses of study for the diploma at the Welsh National School of Medicine, a constituent School of the University. The courses commence in October and continue throughout the succeeding twelve calendar months. They are so arranged as to permit of part-time study. The Institute of Preventive Medicine, situated in Cardiff, is equipped with laboratories for teaching and research in public health, and a library is provided for the use of students. The Public Health Departments of the City of Cardiff and the County of Glamorgan, and the Joint Public Health Laboratories provided by these authorities and accommodated at the institute, form the centres of practical instruction, their medical officers of health, bacteriologists, and chemists being lecturers in the department of preventive medicine of the School. In the public health departments of Cardiff and Glamorgan a limited number of salaried half-time posts, tenable for one year only, are open to medical men or women who intend to study for the diploma in the Welsh National School of Medicine. Applications for such appointments must be made to the respective medical officers of health. Further particulars may be obtained from the Secretary, Welsh National School of Medicine, 10, The Parade, Cardiff.

The University of Edinburgh grants a Diploma in Public Health. The course, which extends over an academical year of nine months' full-time study, can be commenced in October only, and provision is made by the university for instruction in all the subjects. Candidates for the diploma must be graduates in medicine and surgery of the University of Edinburgh, or must hold corresponding degrees or registrable medical qualifications, which must be registered before a candidate is admitted to the second examination. The course for the diploma is divided into two parts, for each of which examinations are held twice annually. In each part the candidate must pass in all the specified subjects at one examination.

The University of Glasgow confers the B.Sc.(P.H.) and the D.P.H., and conducts complete qualifying courses for both at its Institute of Hygiene and, for administrative work, in the Public Health Department of the city. The course for the diploma is divided into two parts, and admission to the examination is contingent upon the candidate having complied with the following conditions, which apply also to the Edinburgh D.P.H.:

PART I.—(*a*) Completion, subsequent to obtaining a registrable medical qualification, of the course of instruction prescribed for Part I.

PART II.—(*b*) Completion, subject to obtaining a registrable qualification of the course of instruction prescribed for Part II; (*c*) a lapse of two years after obtaining a registrable qualification; (*d*) previous passing of examination in all subjects of Part I.

The Royal Naval Medical College and the Royal Army Medical College provide courses of training to the medical officers of these two Services.

Degrees and Diplomas in Public Health are registrable qualifications, but not so those in Tropical Medicine and Hygiene.

Qualifications in Tropical Medicine and Hygiene

The University of London grants a degree (M.D. in Tropical Medicine) to its medical graduates. A course of training is normally required, extending over at least one academic year.

Diplomas in Tropical Medicine and Hygiene are granted, in England, by the University of Liverpool and by the English Conjoint Board; and, in Scotland, by the University of Edinburgh. Among the institutions which provide qualifying courses are the London School of Hygiene and Tropical Medicine, the Liverpool School of Tropical Medicine, and the Royal Army Medical College. In the last-mentioned institution the training provided is restricted to Army medical officers. The training period for these diplomas is about six months. Graduates of medicine and surgery of recognized universities whose degrees are not registrable in this country may enter for the examination of the English Conjoint Board, and the conditions of study may be modified on the grounds of previous work in the Tropics or of original investigations undertaken.

Facilities for research work are provided at each of the above-mentioned centres for training.

The Colonial Office has decreed that the holder of a D.T.M. and H., or of a D.T.H., is eligible for appointment as a medical officer of health in places and districts other than those with large populations. In the latter cases a D.P.H. is required.

The Services

ROYAL NAVAL MEDICAL SERVICE

The Royal Naval Medical Service offers to well-qualified medical men a satisfactory career, with good opportunities for the practice of their profession and for specialization in many subjects, good pay, and the prospects of promo-

tion to the higher ranks, with an adequate pension on retirement.

Entrance is on a short-service basis for an initial period of three years, to be extended to five years at the discretion of the Admiralty. Officers leaving the Service at the end of three years are eligible for a gratuity of £400, while those who leave at the end of five years receive £1,000.

On appointment, new entrants undergo an initial course, during which they receive instruction in the naval aspects of medicine and the organization and administration of the Naval Medical Service. This is followed by a period of service at one of the principal naval barracks or hospital, and is succeeded by various periods of service at home or abroad, afloat or ashore, as required.

General medical and specialist courses of duration varying from three to six months are arranged, and this postgraduate instruction is supplemented by the promotion course referred to under Promotion below.

Officers may be transferred to the Permanent List at the discretion of the Admiralty during the year in which they attain four years' seniority as surgeon lieutenant. A gratuity of £1,000 (less income tax) is paid, but the officer is required to render a minimum of twenty-five years' service in order to qualify for full pension, including seniority granted, if any, in respect of civil hospital time. With regard to the latter, ante-date of seniority of not more than one year may be allowed in respect of whole-time or resident appointments in civil hospitals held prior to entry to the Royal Naval Medical Service. The ante-date counts for seniority and eligibility for increase of pay, and if the officer is transferred to the Permanent List it counts also as service for the purposes of promotion and retired pay, or gratuity on retirement.

Opportunities are afforded for officers to specialize during the course of their career, and the number of specialist posts carrying additional emoluments is over eighty-five.

Candidates should preferably be between the ages of 24 and 28.

PAY AND ALLOWANCES

(Full Pay—Current Rates)

	Per annum
	£ £
Surgeon Lieutenant (short service and permanent service)	438 *to* 478
Surgeon Lieutenant Commander (promoted after 6 years' service)	578 to 611
Surgeon Commander (promoted after a further 6 years' service)	742 to 1,058½
Surgeon Captain (promoted by selection)	1,074 to 1,320
Surgeon Rear-Admiral (promoted by selection)	1,734
Medical Director-General	2,262½

An outfit allowance of £50 towards cost of uniform is given.

	Per diem
Allowance when in charge of hospitals and sick quarters	10s. and 5s.
Specialist allowance	5s.
Allowance to Senior Medical Officer in flag ship	5s. and 2s. 6d.

PROMOTION

Promotion to surgeon lieutenant commander is automatic, subject to the necessary minimum of sea-time being served and to satisfactory reports. Promotion to surgeon commander is principally governed by success at a promotion examination, prior to which a course of five months' postgraduate instruction is given. In the higher ranks promotion is strictly by selection. The total number of surgeon captains and officers above that rank is forty. Every permanent officer becomes eligible for selection for a higher post after eight years' service as surgeon commander, and promotion usually takes place after eleven to twelve years' service in that rank.

Provision allowance and lodging allowance are paid when victualling and accommodation are not provided.

The extra allowances alluded to in this table are not to be looked upon as very exceptional. About a quarter of the medical officers of the Navy are drawing extra allowances.

PENSIONS

Naval officers retire at certain ages according to the rank they have attained. Except for those promoted to the forty higher posts, the usual retiring age is 55 as surgeon commander, the appropriate pension according to scale being £543 per annum.

The current scale of pensions is as follows:

	Maximum Retired Pay
Surgeon Vice-Admiral	£1,082 per annum on vacating office
„ Rear-Admiral	£914½ per annum at age of 60
„ Captain	£814½ „ „ 57
„ Commander	£543 „ „ 55
„ Lieutenant Commander and Surgeon Lieutenant	£107½ „ 45

Officers permitted to withdraw receive gratuities on the following scale:

Over 10 and under 15 years' service	£500
„ 15 „ 18 „ „	£1,800
„ 18 years' service	£2,700

Applications.—No examination for entry is held, but candidates will be required to present themselves before a Selection Board of the Admiralty, presided over by the Medical Director-General of the Navy, Admiralty, London, to whom application should be made for further details.

General.—The cost of living in a Naval mess, afloat or ashore, is very moderate, and does not, as a general rule, exceed £10 a month.

ROYAL ARMY MEDICAL CORPS

The Royal Army Medical Corps offers to well-qualified medical men a satisfactory career, with good opportunities for the practice of their profession and specialization in many subjects, good pay, and prospects of promotion to the higher ranks with an adequate pension on retirement.

The appointment of officers to the R.A.M.C. is, in the first instance, by means of a short-service commission for a period of five years.

In the fourth year of service an officer is given the choice of retiring with a gratuity of £1,000 at the end of five years' service or of applying for a permanent commission in either the Royal Army Medical Corps or the Indian Medical Service. In the reorganized service, introduced as a result of the recommendation of the Warren Fisher Committee, the prospect of promotion to the higher ranks necessarily depends upon a rigid control of entry into the permanent service. It is not possible on this account to say exactly what proportion of officers who now enter the Corps will be eligible for permanent commissions, but in all probability about 50 per cent. will have the opportunity of doing so. Those retiring with a gratuity after five years' service are liable to be called up for duty in the event of a national emergency arising during the twelve years following their retirement.

New entrants are commissioned in the rank of lieutenant, and the first three months of their service are on probation, during which time they undergo a course at the Royal Army Medical College, London, in hygiene, tropical medicine, entomology, etc., in addition to their military training at the Royal Army Medical Corps Depot at Aldershot. A grant of £50 is made for the purchase of uniform.

An entrant who is holding, or who is about to hold, at the time of entrance an approved whole-time appointment at a recognized civil hospital may be seconded while holding such appointment up to a maximum period of twelve months. A candidate who has held such an appointment within six months of entry may be granted an ante-date up to twelve months in respect of the period the appointment was held. The period of secondment or ante-date will not reckon in diminution of the period of five years which he is required to serve on a short-service commission, but on completing one year of actual service in the R.A.M.C. the period of secondment or ante-date will count for seniority. If appointed to a permanent commission the period of secondment or ante-date counts as service for promotion to the rank of major, increases

of pay in the ranks of captain and major, and retirement on retired pay or with gratuity.

Promotion

Promotion to captain is after one year's commissioned service on full pay. If appointed to a permanent commission promotion to the rank of major is on completion of ten years' commissioned service. Promotion to the ranks of lieutenant-colonel and colonel is by selection to fill vacancies within the establishment, which is designed to allow promotion to those ranks on the average after seventeen and twenty-five years' service respectively.

Professional Opportunity

The possibilities for good work are very great. There is scope for original research in tropical diseases, in preventive medicine, and in bacteriology, as well as in the large clinical field open to the specialist in medicine, surgery, gynaecology, diseases of the ear, nose, and throat, ophthalmology, and venereal diseases. Child welfare is also undertaken systematically by officers of the R.A.M.C.

Young officers having special qualifications or experience in particular branches of medicine or surgery can, if found sufficiently expert, be graded as "Physician," "Otologist," "Gynaecologist," etc. They would then be eligible to fill specialist appointments.

Foreign Service

The tour of foreign service in India, Burma, and Egypt is five years, in Gibraltar and Malta four years, and in other stations three years, but in the case of those officers retiring on a gratuity after five years' service, arrangements would be made for them to return to England at public expense by the end of that period.

Postgraduate Study

A permanent commissioned officer, between his sixth and tenth year of service, undergoes a course of postgraduate study at the Royal Army Medical College and the London hospitals of five months' duration, followed by a course of study of a special subject selected by himself, provided he has shown special aptitude in the postgraduate course or during his previous service. During this course of study he remains on full pay, and the fees for the course are paid by the State. When qualified in his special subject the officer, up to and including the rank of lieutenant-colonel, becomes entitled to specialist pay at 4s. 6d. per day when holding a specialist appointment.

Pay and Allowances: Retired Pay, etc.

The present rates of pay and allowances and retired pay are given in the following tables. In addition, an officer at home below the rank of colonel in charge of a hospital of fifty beds or more receives charge pay at the rate of 5s. a day. There are also available specialist appointments which carry with them an additional rate of pay of 4s. 6d. a day.

Rank	Pay (per annum) approx.	Allowances (Home Rates) approx.	
		Married	Single
	£	£	£
Lieutenant	362	198	134
Captain	447	236	134
Captain after 6 years' service	496	236	134
Captain after 8 years' service	535	236	134
Major	621	239	173
Major after 13 years' service	703	239	173
Major after 16 years' service	742	239	173
Major after 18 years' service	827	239	173
Major after 22 years' service	891	239	173
Lieutenant-Colonel	949	240	201
Lieutenant-Colonel after 3 years' service as such	1,031	240	201
Colonel	1,156	275	227
Major-General	1,570	434	383

Pay in India is appreciably higher than that at home.

General.—The pay of officers even in the lowest rank is ample to enable them to be independent, and the expenses of R.A.M.C. messes are kept under strict supervision so that all tendency to extravagance may be checked and junior officers prevented from finding difficulty in living on their pay.

Retired pay consists of two parts: (*a*) a service element based on the officer's total service; (*b*) a rank element for the substantive rank from which the officer retires. An officer with less than twenty complete years' service will not be eligible for retired pay on voluntary retirement.

The following are the maximum current rates of retired pay:

Rank	Yearly Rate of Retired Pay	Compulsory Retiring Age
	£	
Major	407.5	55
Lieutenant-Colonel	543	55
Colonel	724	57
Major-General	905	60
Lieutenant-General	1,086	60 (or on completion of tenure)

Gratuities

A short-service officer not appointed to a permanent commission may retire with a gratuity of £1,000 after five years' service as a medical officer. Such an officer is liable, during the twelve years following retirement, to be recalled to service at a time of national emergency. Officers holding permanent commissions, with less than twenty years' service as medical officers, may be permitted to retire with gratuities in accordance with the following scale:

With less than 10 years' service as a medical officer	£1,000
After 10 years' service as a medical officer	£1,500
After 15 years' service as a medical officer	£2,800
After 18 years' service as a medical officer	£3,500

Applications.—Entry takes place twice yearly, at the beginning of May and November. The regulations for admission, giving full details, can be obtained from the Under Secretary of State (A.M.D. 1), War Office, Whitehall, London, S.W.1, and should be carefully studied. A personal interview with a representative of the Director-General, Army Medical Services, is readily obtainable.

MEDICAL BRANCH OF THE ROYAL AIR FORCE

The Air Council attaches great importance to attracting into the service the best type of medical man, since on the capacity of the Medical Branch depends in a peculiar degree the safety and efficiency of the Air Force. The duties of a medical officer in the Air Force include not only the prevention and treatment of those ordinary diseases to which the personnel of any fighting service are liable but the special study of the mental and physical stresses imposed on the airman in diverse circumstances and climates—a new branch of medicine which still provides considerable scope for research.

As promotion to the higher ranks of the Service is by selection, and as a certain proportion of the higher ranks are reserved for purely professional as opposed to administrative appointments, it will be seen that there are excellent prospects for the young medical officer who exhibits ability and energy in his professional work. The work to be done, therefore, has a high professional interest, combined with good rates of pay and allowances, so that a career is offered to those who are selected for permanent commissions which should prove both attractive and interesting. The life is one which is certain to appeal to

the man of wide outlook who desires opportunities for travel, sport, and games, and can find interest and enjoyment in aviation. His duties will, as a matter of course, give him flying experience as a passenger, which is necessary for the proper study of the medical problems of aviation and for gaining first-hand knowledge of the conditions under which his comrades serve. He may also, if he wishes, learn to fly when this can be done without interference with his duties.

COMMISSIONS

The establishment consists partly of permanent and partly of short-service officers, and an officer on entry is granted a short-service commission for a period of three years on the active list (which may be extended to five years) and of four years in the Reserve of Air Force Officers. Selections for permanent commissions are made from officers holding short-service commissions who are considered to be suitable and who desire a life career in the Service. Those who are not selected are transferred to the Reserve at the expiration of their period of service on the active list.

But the short-service commission with its gratuity after three or five years is in itself an attraction to many entrants who desire to enlarge their experience and outlook from the points of view of subsequently entering private practice, and who, on entry, have not made up their minds to the adoption of a permanent career in the Service.

For certain purposes medical officers may be allowed to count as service their time spent in approved whole-time post-graduate appointments in civil hospitals under certain well-defined and generous conditions.

At about five years' service all permanent officers who are judged suitable will be given the opportunity to take a course of specialist study, towards the expense of which an allowance is made. The period allowed will vary with the subject of study, but usually about nine months will be available to each officer, during which full pay and allowances will be issued. Their subsequent career will normally be as follows. Approximately three-quarters of the employment of squadron leaders and senior flight lieutenants is in specialist posts, though these are not generally of a full-time specialist character. On reaching the rank of wing commander the policy is to allow a proportion of officers to become permanent specialists and to be employed continuously throughout the remainder of their career in full-time specialist posts. In addition there are a number of hygiene posts in the rank of wing commander open to specialists in that subject, thus further increasing the proportion of specialist posts open to officers. In the rank of group captain, apart from the posts already mentioned as available for the permanent specialist, employment is nearly equally divided between posts in charge of a large hospital and headquarter administrative posts. This statement indicates the position as regards specialist employment as at present foreseen.

New entrants into the Royal Air Force Medical Branch are commissioned as Flying Officers (Medical), and are eligible for promotion to the rank of Flight Lieutenant (Medical) after one year's service on full pay. Accelerated promotion to the rank of Squadron Leader may be granted at any time after eight years' service to officers qualified to hold specialist appointments; those officers who are not so qualified will be eligible for promotion to this rank after ten years' total service. Promotion within establishment to the ranks of Wing Commander and above is by selection. The number of permanent commissions granted yearly is regulated with a view to all suitable permanent officers being promoted to Wing Commanders and of a substantial proportion of Wing Commanders being promoted to Group Captains.

There is no competitive examination on entry: candidates, who must be under 28 years of age, are interviewed by a Board presided over by the Director of Medical Services, Royal Air Force, before acceptance. Each candidate must produce: 1. Birth certificate. 2. Medical registration certificate. 3. A declaration containing the following information: (*a*) Age and place of birth; (*b*) that he is a British subject, the son of British subjects, and of pure European descent; (*c*) that he is ready to engage for general service at home or abroad as required; (*d*) the qualifications he is possessed of, and what medical or other appointments he has held (if any); (*e*) that he is willing to fly as a passenger whenever called upon to do so.

Each candidate is required, before acceptance, to pass a medical examination to ensure that he labours under no constitutional or mental disease or weakness, or any imperfection or disability which may interfere with the efficient discharge of the duties of a medical officer in any climate, in peace or war.

On appointment entrants undergo an initial course of three months, during which they are given instruction in the special medical aspects of aviation, hygiene and tropical medicine, the organization and administration of the Royal Air Force, and the general and special duties to be performed by officers in the Medical Branch.

UNIFORM AND EQUIPMENT: LEAVE

An allowance of £50 towards the cost of uniform is made on joining to candidates who have not had previous commissioned service in H.M. Forces. Subject to the exigencies of the service, officers at home are allowed ordinary leave up to sixty-one days in a year; officers abroad may accumulate leave up to ninety-one days, which may be taken on return home. Full pay is granted for ordinary and accumulated leave.

EMOLUMENTS

The emoluments of medical officers of the Royal Air Force are given in outline below. The rates of pay are fixed on an inclusive basis, and the fact that specialist pay and charge pay are not payable as separate emoluments was taken into account when the rates were fixed.

In addition to pay officers receive quarters (with fuel and light), rations, and attendance, or, if these are not available in kind, they are given cash allowances in lieu as shown in the table. The rates and general scheme of allowances are subject to review as circumstances may require. Married officers who have attained the age of 30 years receive either married quarters or allowances at the married rates.

Rank	Pay (per annum)	Allowances (per annum) (Present Home Rates)	
		Married	Single
	£	£	£
Flying Officer	395	—	123
Flight Lieutenant	429	234	123
Ditto, after 2 years as such	462	234	123
Ditto, after 4 years as such	496	234	123
Squadron Leader	645	237	162
Ditto, after 2 years as such	709	237	162
Ditto, after 4 years as such	742	237	162
Ditto, after 6 years as such	809	237	162
Wing Commander	909	239	190
Ditto, after 2 years as such	943	239	190
Ditto, after 4 years as such	1,040	239	190
Group Captain	1,156	310	252
Air Commodore	1,320	366	312
Air Vice-Marshal	1,652	430	373

Special allowances are applicable at stations abroad.

RETIRED PAY AND GRATUITIES

The minimum period of service qualifying for retirement on retired pay is twenty years. The maximum rates of retired pay and the compulsory retiring ages for the several ranks are:

Rank	Yearly Rate of Retired Pay	Compulsory Retiring Age
	£ s.	
Air Vice-Marshal	914 10	60
Air Commodore	860 0	59
Group Captain	814 10	57
Wing Commander	543 0	55
Squadron Leader	452 10	55

Officers of the rank of Group Captain and below can normally reach the maximum rate of retired pay of their rank.

A permanent officer allowed to retire before having qualified for retired pay may be granted a gratuity, namely:

After 5 but less than 10 years' commissioned service	£1,000
After 10 but less than 15 years' commissioned service ..	£1,500
With 15 or more than 15 years' commissioned service.. ..	£2,800

Short-service officers who complete their full period of service on the active list will normally be granted gratuity as follows on transfer to the Reserve:

After 3 completed years	£400
After 5 completed years	£1,000

These gratuities will not be repayable to officers granted permanent commissions, but their service on a short-service commission will count towards retired pay.

DISABILITY AWARDS, WIDOWS' PENSIONS, ETC.

Permanent medical officers invalided from the Royal Air Force are eligible for retired pay or gratuity however short their service may have been. If the disability in consequence of which they are invalided is attributable to the conditions of their service and is assessed at 20 per cent. or more, they receive an addition, varying according to the degree of disablement, to the retired pay or gratuity for which they may be eligible. Provision is also made in the regulations for pension to the widow and allowances to children or dependants of a deceased officer.

GENERAL

The pay of officers even in the lowest rank is ample to enable them to be independent, and the expenses of Air Force messes are strictly limited in order to check all tendency to extravagance and to prevent even the most junior officer from finding difficulty in living on his pay. The regulated limit of the daily rate of messing is 5s. and the average rate at present charged at home stations is 3s. 6d. Subscriptions and the cost of mess entertainments are charged according to an officer's rate of pay, and an unmarried officer taking his full share in the life of the mess should not incur a mess bill of more than £10 a month (6s. 8d. a day). This sum would include a wine bill of £1 a month (an actual average figure), but would not include goods, such as tobacco, bought through the mess.

INDIAN MEDICAL SERVICE

The Indian Medical Service offers a permanent career with wide opportunities of medical experience, including clinical, preventive, specialist, and research work. Admission to the Service is by selection and nomination by the Secretary of State for India, and inquiries should be addressed to the Secretary, Military Department, India Office, Whitehall, S.W.1.

Candidates should be under 32 years of age, and must possess a qualification registered in Great Britain and Northern Ireland under the Medical Acts in force, or an Indian medical qualification recognized under Section 11 (i) of the Indian Medical Council Act, 1933, and registered in British India under one of the Provincial Medical Acts. Officers are appointed in the rank of Lieutenant, and are normally promoted to Captain on completion of one year's full pay service.

COMMISSIONS AND APPOINTMENTS

All European officers are appointed to *permanent* commissions, but they may retire voluntarily with a gratuity of £1,000 after six years' service or £2,500 after twelve years' service. In such cases officers are provided with free passages to the United Kingdom.

The Service is primarily a Military Service, but 142 posts under the civil administration are specifically reserved for officers of the Indian Medical Service (Civil). European officers are appointed to 115 of these and are eligible, together with Indians, for appointment to 24 of the remainder. These posts include civil surgeoncies, which provide for the medical needs of civil officers and for general medical administration; specialist appointments as physicians, surgeons, and gynaecologists, etc., at civil hospitals; research posts; and professorships at important medical schools. Officers are not normally eligible for transfer to civil employment until they have done at least one year's service in India. Except in the case of officers who are specially selected for certain appointments, transfers to civil employment are not usually made until the completion of 4 or 5 years' service in India.

RATES OF PAY

Year of Service	Rank	Basic Pay, Rs. per mensem	Overseas Pay, £ per month	Total, £ per annum
1	Lieutenant	450	15	585
2	Captain	500	25	750
3	"	550	25	795
4	"	550	25	795
5	"	600	25	840
6	"	600	30	900
7	"	700	30	990
8	"	700	30	990
9	"	700	35	1,050
10	"	700	35	1,050
11	Major	800	35	1,140
12	"	800	40	1,200
13	"	800	40	1,200
14	"	800	40	1,200
15	"	800	40	1,200
16	"	950	40	1,335
17	"	950	40	1,335
18	"	950	40	1,335
19	"	1,100	40	1,470
20	"	1,100	40	1,470
21	Lieutenant-Colonel	1,350	40	1,695
22	"	1,350	40	1,695
23	"	1,350	40	1,695
24	"	1,500	40	1,830
25	"	1,500	40	1,830

NOTE.—(1) The rupee is at present stabilized at a rate equivalent to 1s. 6d.

(2) An officer promoted to the rank of Lieutenant-Colonel before completion of 20 years' service will receive pay at the rate of Rs. 1,200 per mensem (basic) *plus* £40 per month overseas pay.

(3) Overseas pay is admissible only in the case of officers who, at the date of their appointment to the Indian Medical Service, had their domicile elsewhere than in Asia. All service which counts for increments of basic pay counts also for overseas pay.

In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special rates of pay are also attached to numerous administrative appointments.

ANTE-DATES IN COMMISSION

Candidates possessing certain higher medical qualifications may be granted an ante-date of one year in their commissions, and candidates possessing a D.P.H. receive an ante-date of six months. An officer who has held an approved whole-time appointment in a civil hospital is also eligible for an ante-date equivalent to the period of his appointment but not exceeding one year. Persons holding or about to hold such appointments may be seconded in those posts for a period not exceeding one year. The maximum period of ante-date secondment, or ante-date and secondment combined, is limited to 18 months. An officer granted an ante-date of twelve months is promoted Captain on arrival in India.

OUTFIT ALLOWANCE: PRIVATE PRACTICE

Officers on appointment will receive an allowance of £75 towards the cost of outfit.

With the exception of administrative officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice so long as it does not interfere with their proper duties.

LEAVE

Leave can be taken at reasonable intervals, and adequate rates of leave pay are provided. Extra leave (known as study leave), which may not exceed twelve months in all during an officer's service, may be granted to officers desirous of pursuing special courses of study of a postgraduate nature. During such leave study allowance, at present fixed at the rate of 12s. a day in the United Kingdom, £1 a day on the Continent of Europe, and £1 10s. a day in the United States of America and Canada, is granted to an officer in addition to ordinary rates of leave pay.

PENSIONS

The rates of pension are as follows:

	Per annum £	s
After 17 years' service for pension	372	0
" 18 " " "	400	0
" 19 " " "	428	0
" 20 " " "	465	0
" 21 " " "	502	0
" 22 " " "	539	0
" 23 " " "	576	10
" 24 " " "	614	0
" 25 " " "	651	0
" 26 " " "	697	10
" 27 " " "	744	0

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments as Colonels or Major-Generals. Officers who elect to remain in civil employment after 17 years' service will not be promoted above the rank of Lieutenant-Colonel, but will be eligible for higher pensions.

PASSAGES

An officer on appointment is provided with free passage to India. The families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges. Officers of non-Asiatic domicile and their families are also eligible for passage concessions under which they are granted a certain number of return passages home for themselves and their wives and children at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately three months, prior to their embarkation for India on first appointment. Information as to the rates of pay admissible during this period and subsequently up to arrival in India is contained in the memorandum referred to below.

A detailed memorandum regarding these appointments and forms of application may be obtained from the Under Secretary of State for India, Military Department, India Office, London, S.W.1.

The Army Dental Corps

The corps is administered by the Director-General, Army Medical Services. The regulations for admission to the Army Dental Corps should be obtained from the Under Secretary of State, War Office, and carefully studied.

LOCAL GOVERNMENT HOSPITAL SERVICES

The growth of the municipal or council hospital during the last two years has meant not only greatly extended and modernized hospital provision for the public, but the creation of new medical staffs in the employment of local authorities and also the furnishing of increased teaching facilities of which many medical schools have taken advantage. In London alone, for example, the general and special hospitals of the County Council employ a staff of nearly 400 medical officers and over 250 consultants, and seventeen of the hospitals are linked with the medical schools for teaching purposes.

These hospitals have arisen by a metamorphosis from the old Poor Law infirmaries. Instead of being, as formerly, under the control of boards of guardians and other minor authorities, they are administered by county and county borough councils. No longer are they regarded merely as institutions for the reception of the chronic sick; they have assumed the curative and research functions of the voluntary hospital. Under the more progressive authorities the old institutions have become unrecognizable, with, in the general hospital, new receiving wards, out-patient departments, more and better maternity accommodation, modernized operating theatres and sanitary annexes, the provision and extension of nurses' homes and central kitchens; and, at the special hospitals, isolation blocks, additional accommodation for patients and staff, and various reconstruction and improvement schemes.

The differentiation between the voluntary and the municipal hospital every year becomes less definite, and thus the need becomes greater for their co-operation. By one of the sections of the Local Government Act, 1929, which brought about all this municipal development, the local authority is instructed to consult with the voluntary hospitals and their professional staffs with regard to the extension of hospital accommodation. In some areas this has been done, and the range of subjects for consultation has been enlarged: witness the splendid example of Manchester, where the first Joint Hospitals Advisory Board has been set up. But in many parts of the country the section remains a dead letter. Indeed, only rather more than half the county boroughs, and of course a much smaller proportion of the counties, have so far "appropriated" to general and special hospital purposes the institutions which they inherited from the guardians. Nevertheless the municipal hospital is assuming an important place in the hospital picture. The change in administration has coincided with a change in public sentiment. The institutions which were disliked and dreaded by the poor while they remained Poor Law infirmaries, and were generally disregarded by the medical profession also, have now become popular, and their popularity extends beyond the class of persons they were originally intended to benefit.

The London County Council Services

The London County Council is the largest of the local authorities in respect of the hospital accommodation it controls and the medical staff which it employs. It has set an example by the advantage which it has taken of the Local Government Act. Under that Act it took over a total of seventy-six hospitals and institutions. These included twenty-eight general hospitals, the largest of which is Lambeth, with accommodation for 1,300 patients: eight of the others have accommodation for over 700. The total cost of maintenance of the various hospital services is some four and a half millions a year, of which nearly three millions is spent on the general hospitals. The total bed accommodation in the hospitals and allocated institutions on transfer was 41,164, but this included nearly ten thousand beds in institutions, the majority of which could not be regarded as suitable for the proper treatment of sick persons. A great deal of structural work and readaptation was put in hand, with the result that a net increase of more than 1,400 beds has been provided.

There were admitted to these hospitals a large number of acute cases, both medical and surgical, but there is, of course, this difference between them and the voluntary hospitals, that the latter can select their patients and reject whom they please, whereas the rate-supported institutions must be prepared to admit any sick poor person who applies, provided that, in the opinion of the medical superintendent, such a patient is suitable for admission. Some 37,000 operations were performed in the general hospitals during the last year for which full records were available (1935), and the number of out-patient attendances was more than 554,000. The chronic sick poor are gradually being concentrated in twelve other institutions which, unlike the rest, are for the present, for administrative reasons, not under the Public Health Acts.

So far as maternity and child welfare services are concerned, the City Corporation and the Metropolitan Borough Councils are the responsible authorities, but the London County Council has maternity beds in its general hospitals, and in several hospitals a fully equipped maternity and

gynaecological block. To the maternity wards of the Council's hospitals in 1935 over 15,000 cases were admitted. The accessory medical services under the Council are also important; these include pathological laboratories, x-ray units, and a large ambulance organization. In addition to smaller units, the Council has five pathological laboratories, each of which serves a group of institutions attached to the municipal service. These five are at Lambeth, Highgate, Lewisham, Mile End, and Kensington. Arrangements have been made whereby postgraduate students of the London School of Hygiene and Tropical Medicine may obtain experience of the technical and administrative methods adopted in these laboratories—experience of a kind very difficult to obtain in the ordinary way.

Provincial Hospitals

The same general provisions hold good in various degrees of other progressive cities. The *Hospitals Year Book, 1937*, gives particulars of fifty-five general and children's hospitals in provincial cities administered by the local authorities. The average bed accommodation in these hospitals is over 600; the whole-time medical staff numbers 300, and the part-time staff some 450. Birmingham has under its council four general hospitals, two infectious diseases hospitals, two maternity homes, two babies' hospitals, four convalescent homes, and four sanatoria. The medical staff, whole and part-time, attached to its general hospitals numbers over forty. Newcastle-upon-Tyne, with a hospital accommodating 700, has a staff of twenty-five. Other large provincial towns show comparable figures. Hospitals which remain under the Poor Law also have their whole-time and part-time staff. Edmonton (Middlesex) Poor Law Hospital, for example, has a medical staff of twenty-eight, made up about half of whole-time and half of part-time officers. Smithdown Road, Liverpool, with 1,200 beds, has ten whole-time and eleven part-time officers. In addition to the large general hospitals, maternity and children's hospitals are provided by the larger authorities. In Birmingham, for example, there are thirty maternity and child welfare centres under the control of the Public Health Committee.

In Manchester a great scheme of reorganization of the consultant medical and surgical services has been brought about at the three general hospitals controlled by the city council—namely, Crumpsall (1,438 beds), Withington (1,179), Booth Hall (760). The first two are general hospitals for adults, and the third a general hospital for children. All three were formerly Poor Law establishments. Under the new arrangements, which have been made in order to overcome the previous inadequacy of specialists in number and in the number of their visits, there are or are to be forty-one consultant appointments, with a total of ninety-five attendances per week. The new salary bill will be £12,500 per annum, representing about 50s. per specialist's attendance. Under the joint hospital advisory board for Manchester, already mentioned, it is hoped to co-ordinate the activities of all the hospitals, voluntary and municipal.

Facilities for Instruction

A great amount and variety of clinical material is contained in these hospitals, and many of them are used for undergraduate and postgraduate teaching. In London some useful discussion has taken place between the London County Council and the representatives of the voluntary hospitals. At several of the general hospitals under the old board of guardians arrangements for instruction were made, but these have been much extended since the hospitals came under Council control. Sixteen of the Council's general hospitals have been affiliated to the London voluntary hospital medical schools. Teaching in obstetrics is afforded in seven of the Council's hospitals. Facilities are also afforded at the Council's pathological laboratories to postgraduate students in order that they may obtain experience in technical and administrative methods. As an example of the amount of material which may be afforded by a Council hospital, St. James's, Wandsworth, may be cited, where there is a clinic of fifty beds always occupied with serious fracture cases. It is proposed to set up at St. Mary's Hospital, Carshalton, at a cost of £116,000, a new antitoxin establishment designed and equipped on modern lines.

The postgraduate school at Hammersmith Hospital, the result of a partnership between the Government, the University of London, and the London County Council, was opened in May, 1935, by King George V. So much has been written about this great development that it is hardly necessary to recapitulate here all that it embodies. The new institution has been "recognized" as a school of London University. There are four professorships, three in the main clinical subjects—medicine, surgery, and midwifery and gynaecology—and the fourth in pathology. The school buildings consist mainly of laboratories, lecture theatres, and other accommodation (non-residential), while the associated developments and adaptations of the Hammersmith Hospital adjoining include two new blocks of buildings for the casualty, receiving, and out-patient departments, a new ward, a massage and light treatment section, and other facilities. The County Council has provided at Hammersmith a radiological department which serves as a consultative centre for the whole of the hospital service, where cases can be sent from other hospitals for expert opinion on diagnosis and treatment. Arrangements are being made at this school for postgraduate courses for insurance practitioners under a scheme arranged by the Ministry of Health.

It may be added that the clinical material in municipal hospitals is not only vast in amount, but includes a great deal with which it is very important that the young practitioner should be familiar, and which is not much represented in the teaching hospitals. In a recent report to the L.C.C. it is mentioned that the type of case treated in the general hospitals is altering, and there is a continually increasing amount of acute and operative work to be carried out.

Medical Staffing

The policy pursued by the London County Council and other authorities is to provide a whole-time medical service and to have a permanent staff at each general hospital. The grades of officers are: medical superintendents, deputy medical superintendents, senior assistant medical officers, assistant medical officers, and house-physicians and surgeons (resident), and part-time clinical assistants (non-resident). The medical superintendent is required to be a man of high qualifications in at least one branch of medicine, as well as a good administrator and first-class technician. In addition to the medical superintendent, one or more whole-time medical officers, with special qualifications in medicine, surgery, or obstetrics, are appointed. Preference is given to officers holding the higher medical qualifications, M.R.C.P. or M.D. in the case of physicians, F.R.C.S. or M.S. in the case of surgeons. These are graded as senior assistants, and at the larger hospitals one of them ranks as deputy medical superintendent. Deputy medical superintendents are employed as a rule only at hospitals with over 600 beds, of which there are sixteen among the London County Council general hospitals. These officers at institutions with over 750 beds are described as of Grade I, while those at hospitals of from 600 to 750 beds are of Grade II. Senior assistant medical officers are also graded according to the size of the hospital they serve. The appointment to these posts is made to qualified medical practitioners of at least one year's standing in their profession who have held a residential post for at least six months in a general hospital. Those who seek assis-

tant medical officerships at the special hospitals will find general hospital experience desirable, although the lack of it does not debar otherwise suitable candidates. The engagements of assistant medical officers of Grade I are limited to four years, terminable at any time by a month's notice on either side, and the first year of service is on probation. Should the officer's name be on the promotion list at the end of his four-years term, he may remain beyond the period of the original engagement, and at an increased salary. Assistant medical officers of Grade II are on a yearly engagement, but this has been found unsatisfactory to the Council, because of the need for frequent appointments, and because officers leave at a time when, having learnt the ways of the hospitals, they are most useful. It is proposed to renew such appointments for a second year. The junior appointments are those of resident house-physicians and surgeons and part-time clinical assistants. These officers consist of recently qualified men and women who are appointed for limited periods, generally six months, and need not have had previous hospital experience. The six-months period may be extended for further similar periods up to a maximum of two years, provided that not more than twelve months is spent in one hospital.

Scale of Salaries

Medical superintendents in London receive as a maximum between £900 and £1,650 per annum, including an unfurnished house or quarters, valued at £100 a year for superannuation purposes, and the rates on which are paid by the Council. The salary scales are:

General Hospitals	£900 to £1,550
Convalescent Hospitals..	£900 to £1,100
Fever Hospitals	£900 to £1,450
Tuberculosis Institutions	£900 to £1,200
Children's Hospitals	£950 to £1,650

Of the general hospitals only two of the smallest in the London County Council area have a commencing salary of £900; at the other end of the scale two have commencing salaries of £1,300. One condition made is that the appointment is to the Council's hospital service, not to an individual hospital, and appointment to the service includes liability, if called upon, to take part in consultations or perform operations at another hospital, although if this happens frequently, on account of the special skill or experience of the officer concerned, a claim for extra remuneration may be considered. Further, in addition to their ordinary remuneration as medical superintendents, the chief medical officers of the infectious hospitals service and of the children's institutions and surgical tuberculosis service receive an allowance at the rate of £200 a year, and the chief medical officer of the medical tuberculosis service, who is also a medical superintendent at a hospital, an additional allowance at the rate of £125.

The scale of salaries for other officers, subject to certain modifications in the different hospitals, is as follows:

Medical Appointments	Remuneration.*		
	Minimum	Increase	Maximum
	£	£	£
Deputy medical superintendent (Grade I)..	650	50	800
" " " (Grade II)..	600	30	750
Senior assistant medical officers (Grade I)	550	25	650
" " " (Grade II)	500	25	600
Assistant medical officers	350	25	425
" " " (yearly engagement)	250	—	—
House-physicians and house-surgeons ..	£120 (resident)		
Clinical assistants (non-resident)	£150 (non-resident) and no emoluments, but meals when on duty		

* Exclusive of the emoluments of board, lodging, and washing, valued at £150 per annum in each case.

In the country generally medical superintendents of Poor Law infirmaries are paid from £600 a year upwards to £1,600, with emoluments; deputy medical superintendents, from £450 to £750, with similar emoluments, and resident assistant medical officers, from £200 to £450, with full board.

Residence, Leave, and Pensions

Generally speaking, all assistant medical officers in London are required to be resident. If in any case the question of an assistant medical officer being non-resident should arise, the primary consideration is the interests of the service. Lately the London County Council, in order to enable male members of its senior staff to marry and remain in the Council's service, has made alternative scales of salary for staff provided only with unfurnished quarters as distinct from board, lodging, and laundry. The scales are: deputy medical superintendents, Grade I, £700—£50—£850 a year; Grade II, £650—£30—£800; senior assistant medical officers, Grade I, £600—£25—£700; Grade II, £550—£25—£650. Non-resident medical officers who are receiving the allowances in lieu of residential emoluments pay for any meals taken at the hospital. Permission to live out is granted only if the accommodation is required or can be utilized for some other purpose.

Liberal annual leave, with pay, and sick leave, with pay, for a reasonable period are allowed by the L.C.C. Leave is also granted for study purposes, not only to officers who are following a university course, but to those who are undertaking other courses of study or research work. The house-physicians and surgeons are not regarded as employed in a whole-time capacity, and reasonable off-duty periods for study are allowed. Clinical assistants attend six sessions of four hours' duration each week. Assistant medical officers also are allowed six weeks in any one year may be granted, not exceeding in accordance with the service of with rates of pay varying to improve their qualifications, and leave of absence the officer. Occasional daily leave for attending a course of instruction for a medical degree or diploma is granted with full pay. These concessions, however, are subject to the condition that the officer shall continue for a certain period in the service of the Council.

Whole-time permanent appointments are pensionable under the Council's superannuation and provident scheme, which provides for a pension and lump sum payment after the necessary qualifying period of service. Pensions are also payable to officers on the fund who break down in health after not less than ten years' service. Officers resigning have their contributions returned to them, and death benefit is also paid in respect of officers of five years' service or more. Marriage is no longer a bar to the employment of full-time women doctors by the Council, but a difficulty arises in resident appointments, owing to the lack of married quarters, and therefore all women members of the hospital medical staff, including the mental hospital service, are excluded from the scope of the concession, with the exception of part-time consultants and specialists.

Consultant and Specialist Services

Under the new scheme, which came into operation in 1933, the general hospitals have been divided into seven groups on a geographical basis, and the special hospitals and public assistance institutions in the area linked up with them, so that consultants and specialists, who were previously engaged chiefly for individual hospitals, whether at annual salaries or at a fixed charge for visits, are now appointed to the service and utilized as required for the groups of hospitals. The salaries for the part-time consultants and specialists are generally £125 a year for one session a week, and £75 a year for each additional session, a session to be approximately of 2½ hours' duration. Full-time consulting physicians and surgeons receive £1,250 a year, rising by increments of £50 to £1,500 a year, with no emoluments. The full-time radiologists receive £900 a year, rising by increments of £50 to £1,100. Consulting urologists are paid on a visit basis—two and a half guineas per visit. The appointment of part-time consultants and specialists is subject to annual review.

Method of Entrance to the Service

Many provincial areas have now highly developed schemes providing for the employment of many medical

men and women of high qualifications at salaries of from £450 to £800 per annum, and, in addition, large numbers of junior officers at salaries of from £200 upwards are employed. These posts offer to all grades remarkable facilities, which should appeal to those who desire to gain experience and at the same time wish to adopt for a period the institutional life. It is a service in which the original appointment and any subsequent promotion depend upon merit, and in which vacancies in the higher grades are filled so far as possible from the existing staff, with no barrier preventing transference from one grade to a higher. Vacancies are usually advertised in the medical journals.

The opportunities of the Local Government Hospital Service to those whose career will be spent in general or consultant practice, as well as to those who expect to spend their lives in the public health service, scarcely need to be stressed. One point which the final-year student or the newly qualified practitioner will do well to bear in mind is that some authorities in offering appointments insist upon candidates possessing previous resident hospital experience. Such a requirement may not arise for some years, but the medical man or woman who has gone direct to serve as locumtenent or assistant may find himself or herself cut off from certain avenues of work through having neglected to take resident experience immediately after qualification. We are informed that it is almost the rule for the young medical woman to take a residential post, but the young medical man often forgoes this experience. It is certainly deplorable that a competent man should, through ignorance on qualification, deprive himself of the opportunity of following his bent in later years.

It has to be borne in mind, however, that the attractiveness and opportunity of a post under the new public assistance authorities, notwithstanding the effect of the Act of 1929 in assimilating the Poor Law to other public health services, are affected not a little by the policy adopted by the local authority concerned. In the more progressive areas there is a high degree of differentiation in treatment between the sick and mentally afflicted on the one hand, and the purely pauper class on the other—that is to say, between the hospital and the public assistance institution, formerly called the workhouse. The tendency in such areas has been to develop the hospital services on lines approximating to those obtaining in the voluntary hospitals.

In addition to the hospital appointments of the character mentioned, the Local Government Service offers numerous other (part-time) posts, such as those of public assistance medical officer and public vaccinator, which are commonly held by private practitioners. Domiciliary work in the public assistance medical service has been found, as the result of a recent inquiry, to be in many areas very inadequately recompensed, and in localities where unemployment is rife and increasing numbers of people are resorting to public assistance the work is becoming more onerous. An assurance has been given by the Ministry of Health that where such increase of work is definitely proven, the local authority will be encouraged by the Ministry to listen to the plea for an increase of remuneration.

Enough has been said to show what variety of service, whole-time and part-time, institutional and domiciliary, the Local Government Service offers, on the one hand, to the ambitious who desire experience, and, on the other hand, to those who seek a secure position, with superannuation at the end.

PRISON MEDICAL SERVICE

Appointments to the prison medical staff are made by the Secretary of State for Home Affairs on the recommendation of the Prison Commissioners. Application for such appointments should be made on a special form, which can be obtained from the Secretary, Prison Commission, Home Office, London, S.W.1.

In the smaller prisons the post is usually a part-time one held by a local practitioner, but in the larger prisons the members of the medical staff are required to devote their whole time to the service. In the case of those required to give their whole time to the service the appointments are in the first instance as medical officers Class II, and from the seniors of this rank the medical officers Class I are selected as vacancies occur.

Largely as a result of action taken by the British Medical Association the salaries and conditions of prison medical officers have been improved, and now are: Medical officer Class II, £525, rising by annual increments of £25 to £800 (with an allowance of £50 p.a. within the scale to holders of the diploma of psychological medicine); medical officer Class I, £800, rising by annual increments of £30 to £1,000. Unfurnished quarters are provided, or an allowance in lieu is made.

There are 18 medical officers Class II, 12 medical officers Class I, and 26 part-time medical officers. The service is a small one, and therefore vacancies are comparatively rare and the rate of promotion varies. The work offers exceptional opportunities for research in criminal psychology, forensic psychiatry, and mental deficiency.

MEDICAL PRACTICE IN BRITISH DOMINIONS AND FOREIGN COUNTRIES

Medical Acts have now been passed in almost all places forming part of the British Empire beyond the seas, and registers of duly qualified practitioners are consequently maintained. To these registers medical men educated in the United Kingdom are generally admissible merely on payment of a registration fee, providing they produce evidence that they are of good repute and are either registered or eligible for registration in the United Kingdom, as the local requirement may be. The only exception to this statement that need be made relates to the Dominion of Canada. Each of its provinces acts in medical matters as an independent State. The result has been that reciprocity of practice has in the past been established between this country and each of the provinces of Canada except British Columbia, where certain obstacles were never overcome. It has, however, to be recorded that reciprocity no longer exists with Saskatchewan, New Brunswick, Ontario, and Quebec. We would advise any medical man proposing to practise in Canada first to communicate with the Provincial Registrar, stating what degrees or diplomas he holds, and asking for information as to the precise steps he must take in order to obtain admission to the Provincial Register. The Licence of the Dominion Council, which can only be obtained after examination, entitles its holder to registration in any of the provinces of Canada, though in regard to Quebec there is a proviso that "he must have been registered in the province five years prior to the application for the recognition of the Dominion Licence." In order to sit for the examination for the Dominion Licence it is necessary to obtain either a licence from one of the provinces (this can be obtained from one of those with whom reciprocity has been established), or a certificate from a Provincial Council that the requirements of that Council in regard to preliminary education, matriculation, medical curriculum, and graduation have been complied with.

Italy and Japan are the only two foreign States with which complete medical reciprocity has been established, though there are other countries which grant a limited recognition to British qualifications. Generally speaking, in Continental countries (with the exception of the kingdom of Italy) a British medical man desiring to exercise his profession therein must pass practically the

same examinations as those imposed on natives of the country. In France naturalization is now required also. The same observation applies to all foreign States in the South American continent. Each of the United States of North America has its own laws and regulations governing medical practice; and all of them require the holder of a British qualification to submit to an examination. A number of the States, including New York, Illinois, Michigan, and Indiana, require naturalization.

The Chinese National Health Administration has issued a notice, for guidance of foreign medical practitioners, to the effect that they should obtain licences to practise from the Administration, and their bonâ fides must be guaranteed by their consular authorities; they should learn Chinese, and should apply to the Permanent Chinese Delegation of the League of Nations at Geneva before setting out for China.

THE COLONIAL MEDICAL SERVICE

The Colonial Medical Service consists of the Medical Services in Bahamas, Barbados, Bermuda, British Guiana, British Honduras, Ceylon, Cyprus, Falkland Islands, Fiji, Gambia, Gibraltar, Gold Coast, Hong Kong, Jamaica, Kenya, Leeward Islands, Malaya, Mauritius, Nigeria, Northern Rhodesia, Nyasaland, Palestine, St. Helena, Seychelles, Sierra Leone, Somaliland, Tanganyika, Trinidad, Uganda, Western Pacific (Gilbert and Ellice Islands, and British Solomon Islands), Windward Islands, and Zanzibar.

New entrants to the Service will be liable to transfer to any scheduled post therein whether or not such transfer represents promotion, provided that:

(*a*) No officer whose first appointment is to an office in a Dependency in which he was ordinarily resident at the time of appointment shall be liable to be transferred to an office outside that Dependency unless and until he shall have accepted an office in another Dependency.

(*b*) No officer shall be transferred without his own consent to an office which in the opinion of the Secretary of State is of less value (due regard being had to climate and other circumstances) than that which he already holds.

Officers who do not hold scheduled posts are eligible to apply for transfer to such posts. Appointment, confirmation, promotion, retirement, and transfer of medical officers will be governed by the directions of the Secretary of State.

No officer of the Service is entitled, as of right, to private practice, the service being envisaged as essentially a Service of whole-time officials whose primary duty is to the State.

The possession of a qualification registrable by the General Medical Council is a condition of eligibility for admission to the Colonial Medical Service.

Medical appointments in the self-governing Dominions and the territories under their control, and in Southern Rhodesia, are made by the Governments concerned, and are not in general open to candidates in the United Kingdom. In the Bahamas, Barbados, Bermuda, Ceylon, Jamaica, and Mauritius vacancies are practically always filled by the appointment of qualified local candidates or, in the case of some of the higher posts, by transfer from other colonies. Appointments to the medical services of the remaining colonies and other territories under the administrative direction of the Colonial Office are made by the Secretary of State for the Colonies in this country.

Conditions of service and superannuation are in the main determined by the economic resources and general public health policy of the individual colony and its local government, and vary almost as widely as do conditions of climate. Moreover, the extent of the control exercised by the Colonial Office varies according to the constitutional status of the particular colony, and the detailed information available centrally is not always complete. The intending candidate, therefore, should make comprehensive inquiries as to local conditions, and particularly as to facilities for private practice where this is not precluded by the terms of appointment. He will also do well to supplement official information by reference to the Medical Secretary at the Central Office of the British Medical Association (Tavistock Square, London, W.C.1), where reports obtained from time to time from the local Branches are available.

To those physically and mentally suited to the climatic and social conditions peculiar to the various colonies the Colonial Medical Service should, and in most cases does, offer a field of professional activity rich in interest and in opportunity for pioneer work, with increasing facilities for specialization and research.

In a few colonies economical and financial stringency still compels the Administration to continue to modify the terms and conditions of salary and to impose temporary deductions from salaries and allowances, and candidates for appointments should make careful and sufficient inquiry concerning the position in the branches of the Service in which they are interested. In this article the unreduced emoluments, allowances, etc., are quoted. Apart from these temporary disadvantages, however, the outlook for the Colonial Medical Service is in the main a hopeful one, and especially so in the larger and better organized branches.

The medical services recruited in this country by the Secretary of State for the Colonies include those of West Africa, East Africa, Malaya, Hong Hong, the West Indies, Fiji and the Western Pacific territories, and Palestine, besides a number of smaller services offering individually one or two appointments.

In Fiji, although the basic salary of district medical officers (£500, by £25 to £725) is below the £600 minimum recommended as adequate by the British Medical Association, this fact is offset by the concession of allowances of from £175 to £235 in some of the districts where the post of Medical Officer is combined with that of District Commissioner, the value of private practice in the other districts being estimated at from £100 to £600 a year.

The services in the West Indies and some of the smaller colonies have not yet conceded the £600 minimum commencing salary, and whilst facilities for remunerative private practice, general conditions of service, and a relatively low cost of living must in some instances be taken into consideration, these compensations are by no means universal. The service in the Leeward Islands is in a condition which requires special notice by way of warning. The position in Grenada has been improved, though such improvements have not extended to St. Lucia and St. Vincent.

In general, candidates for the Colonial Medical Service must be under 35 years of age. Appointments are, subject to a varying period of probation, for the most part classed as permanent and pensionable, but there are some appointments by agreement for a specified limited term of service. There is no entrance examination, but practitioners selected for appointment must obtain a certificate of physical fitness from one of the consulting physicians to the Colonial Office. Postgraduate experience in hospital appointments is desirable. Successful candidates are normally required to undergo an approved course of instruction in tropical medicine, the fees for their tuition being defrayed by the Government and an allowance being paid during their instruction.

Some sixty medical women are employed in child welfare, maternity, and laboratory work, mainly in the larger services—for example, those in East and West Africa and Malaya. Salaries are the same as for men.

The bulk of the appointments made by the Secretary of State in this country are to East and West Africa and Malaya.

West Africa

The West African Branch of the Colonial Medical Service includes Nigeria, the Gold Coast, Sierra Leone, and the Gambia. Climatic conditions vary considerably over this area, but they are in general admittedly trying. This fact is at present recognized by the provision of more frequent leave periods than are usual elsewhere.

The service includes medical, public health, and laboratory divisions, and specialist posts are almost invariably filled by promotion from the staff. The rate of pay for a medical officer is £660 on appointment for three years; then, on confirmation, £690 a year, rising by annual increments of £30 to £840; then, subject to passing an efficiency bar, £880 a year, rising by annual increments of £90 to £1,000 a year. There are a considerable number of specialist and administrative posts carrying relatively high salaries, varying from £1,200 to £2,000. All appointments in the staff are pensionable. The age at which officers may be called upon to retire compulsorily is 50, and retention in the Service after the age of 55 will require the Secretary of State's approval, which will only be given in exceptional circumstances. Pensions are calculated at the rate of 1/600 of the officer's pensionable emoluments (salary and house allowance) in respect of each complete month of service. The pension will be converted into a reduced pension of three-quarters of the full pension, with a gratuity of ten times the amount of the reduction. Gratuities of £1,000 or £1,250 may be drawn on retirement after nine or twelve years' service. Members of the Service in West Africa are not usually permitted to take their wives or young children with them until they have acquired experience of the conditions of life and have obtained the sanction of the Governor. In the case of young children this is only exceptionally given.

African Medical Officers

A number of Government appointments for African medical officers exist in the West African Colonies. These appointments carry salary on the scale £500-£25-£600, and there are higher scales of £600-£30-£720.

East Africa

This branch of the Service includes Kenya, Uganda, Tanganyika Territory, Northern Rhodesia, Nyasaland, Zanzibar, and British Somaliland. In East Africa there is a very wide scope for clinical work, both medical and surgical, as well as for research and for preventive medicine and sanitation. In most stations conditions allow a medical officer's wife to accompany him, but this is not generally desirable on first appointment. In some Dependencies the consent of the Governor must be obtained. The service includes a medical and a sanitary division. The former is open to those holding ordinary medical and surgical qualifications, postgraduate experience in a hospital appointment being an advantage; posts in the sanitary division will as far as possible be filled by those holding a Diploma in Public Health. Climatic conditions vary considerably. In a considerable part of Kenya they approximate more to the temperate than to the tropical zone; but there are some areas in the East African Dependencies where conditions more closely resemble those in West Africa. The rate of pay for a medical officer is from £600 on appointment, rising by annual increments of £30 to £840, and thereafter, subject to an efficiency bar at this point, by £40 to £920.

The gratuities available on retirement after nine or twelve years' service are similar to those in West Africa, except in the case of officers serving in Northern Rhodesia. Officers may retire on pension on reaching the age of 55 years. Pensions are calculated at the rate of 1/600 of emoluments (including value of free quarters) for each completed month of service. The officer of twenty-five years' service who has reached the maximum of the long scale receives a pension of approximately £520 per annum. Pensions are convertible, under certain conditions, into a reduced pension and a gratuity.

Malaya

This branch of the Service covers the Straits Settlements, the Federated Malay States, and the Unfederated Malay States. The salary of $500 a month, with an annual increment of $25, rising to $800 at the top of the time-scale ($ is fixed at 2s. 4d.), is generally considered adequate in view of the present cost of living, which is somewhat higher than that in England. The officer of twenty-five years' service, even if he has not held a senior appointment carrying a salary above the maximum of the time-scale, receives a pension of approximately £560 per annum. Pensions are convertible under certain conditions into a reduced pension and gratuity.

The climate of Malaya is, for the Tropics, a healthy one. It varies little throughout the year. The average rainfall is about 100 inches a year, and vegetation is always green. People who live regular active lives have no difficulty in keeping in good health. European children do well in Malaya up to the age of about 6.

The professional duties of a medical officer may include medical, surgical, medico-legal, and public health work. His administrative work comprises hospital administration, diets, returns, and financial work, and includes the inspection of smaller hospitals and dispensaries. Districts vary in size, and a certain amount of travelling is necessary. The white population in each district varies. The district hospitals hold from 50 to 300 beds. There is a staff of locally recruited men, mostly trained at the Singapore College of Medicine. Asiatic dressers and trained hospital assistants are employed in hospitals and dispensaries. In addition to European sisters, there is a local nursing staff. All hospital equipment is supplied by Government, including instruments. At both the Institute for Medical Research in Kuala Lumpur, Federated Malay States, and the King Edward VII College of Medicine, Singapore, there are opportunities for research as well as for routine investigations. In addition to the full-time professional posts at the College of Medicine several of the medical staff in Singapore hold part-time lectureships.

Sudan Medical Service

This Service is responsible for carrying out civil medical work and public health duties in the Sudan, and for the health of the Sudan Defence Force.

The climate varies, but is not in general unfavourable, though hot. The northern desert zone is hot and dry in the summer, but with cool nights. In the winter the climate is pleasant and is often cold. The central Sudan for eight months in the year has much the same climate as the northern zone, but there is a rainy season of four months (more or less), during which time there is a considerable rainfall, and large areas become malarious, but in which it is possible to keep limited areas malaria-free. The southern area becomes increasingly tropical in character as the southern boundary of the Sudan is approached. In this area the mosquito-protected house and the mosquito net have to be relied on for the greater part of the year.

The staff consists of (*a*) a director; (*b*) three assistant directors (hygiene and public health; hospitals; laboratory services); (*c*) a senior physician and a senior surgeon to the Khartum Civil Hospital; (*d*) a Government gynaecologist and obstetrician and a Government ophthalmo-

logist; (*e*) a medical officer of health, Khartum Province; (*f*) a number of (at present thirty-two) British "senior medical inspectors" and "medical inspectors," whose pay commences at £720 and rises, subject to the recommendation of the director, by five biennial increases to £1,080, and after thirteen years' service to £1,200. The senior medical inspectors are eligible, by selection, for the senior posts. All medical inspectors are appointed, in the first place, on probation for two years, and if at the end of that time they are accepted for permanent service under the Sudan Government the first increase of pay is subject to their passing an examination in Arabic.

In addition to the above there are (*g*) a number of Sudanese medical officers trained at the School of Medicine at Khartum. There are (*h*) several Sudanese assistant medical officers, who have been given a purely practical training in one of the larger hospitals in the Sudan.

Among the attractions of the service are: the great variety of the work met with among many different races of the Sudan; leave of ninety days, generally granted every year after the first eighteen months of service; study leave, which may be given for some definite purpose. The terms of the Pension and Provident Fund are detailed in the pamphlet on "Information for Candidates" of the Sudan Medical Service, and should be studied in the original. Private practice is allowed but is limited to a few of the larger towns, and may be carried on so long as it does not interfere in any way with official duties. These duties include acting as consultant to the principal hospitals and the supervision of medical and public health work, the inspection of schools, the examination of candidates for Government service and pension, and the training of assistant medical officers and Sudanese sanitary officers and overseers. The Khartum medical school is staffed mainly by members of the medical service, who receive additional remuneration for their work as teachers. A registrar of the medical school is also selected from the service, who receives £250 a year extra pay.

Inquiries for further information should be made to the deans of the principal medical schools, and to Dr. V. S. Hodson, M.V.O., F.R.C.P., 69, Harley Street, W.

Official Sources of Information

All inquiries in connexion with medical appointments in the self-governing Dominions and their Dependencies should be addressed to the High Commissioners or Agents-General for the Dominions. Intending applicants are also recommended to consult the Dominions Office and Colonial Office List, which may be seen at the Colonial Office Library or at the Library of the British Medical Association if not otherwise available, and the Professional Handbook, Part III (price 4d.), issued by the Oversea Settlement Department, Dominions Office, Caxton House, Tothill Street, London, S.W.1.

Inquiries as to vacancies and conditions in the Sudan Medical Service should be addressed in the first instance to Dr. Hodson, 69, Harley Street, London, W.1.

All inquiries in connexion with Colonial medical appointments made by the Secretary of State for the Colonies, or such vacancies as may occur in Palestine, should be addressed to the Director of Recruitment (Colonial Service), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1.

There remain a number of medical appointments made by mining companies and other commercial undertakings in various parts of the Tropics. Much caution should be exercised in accepting such posts, and the form of contract should be subjected to very careful scrutiny. Advice in this connexion should always be sought from the Secretary of the British Medical Association, British Medical Association House, Tavistock Square, London, W.C.1.

SPECIAL DIPLOMAS

Information about the regulations for the various Diplomas in Tropical Medicine, in Psychological Medicine, and in Public Health is given in the appropriate sections of this Educational Number at pages 488–92 and 494. Further details in regard to the D.P.H. and the D.T.M. will be found in the late Sir Andrew Balfour's *Guide to the Regulations, Courses, and Examinations for Qualifications in Public Health and Tropical Medicine*, published by the British Medical Association, Tavistock Square, W.C.1, at the price of 3s.

It should perhaps be noted here that of the various diplomas in special subjects granted by licensing bodies only those in Public Health and Sanitary Science and State Medicine are at present admissible for entry in the official *Medical Register*, though other special diplomas may, of course, be included among the particulars of qualifications set out in the *Medical Directory*.

As stated at page 456 a Diploma in Tuberculous Diseases is granted by the University of Wales to qualified medical practitioners; new regulations for this diploma are now in force.

Diplomas in Medical Radiology

Diplomas in Medical Radiology are granted by the Universities of Cambridge, Edinburgh, Liverpool, and London.

The Cambridge Diploma.—A Diploma in Medical Radiology and Electrology is granted by the University of Cambridge. The primary object is to provide adequate training in a branch of medical work which is becoming increasingly important and difficult, and which is outside the ordinary medical curriculum. Before admission to any course for the diploma a candidate shall produce evidence that he holds a medical qualification approved by the committee and also satisfy the committee that he has had sufficient postgraduate clinical experience. The next course, which begins on October 4, 1937, occupies nine months. The first four months, which can be spent either in Cambridge or in London, are occupied with (*a*) lectures and practical work in physics, in preparation for the examination for Part I in February, (*b*) an introductory course of clinical instruction in radiology and electrology, (*c*) a course of instruction in pathology in relation to radiology and electrology. The next three months must be spent in London, and are occupied with (*a*) lectures and demonstrations in radiology and electrology (including radium therapy) at the British Institute of Radiology, (*b*) clinical instruction in the radiological department of a hospital approved by the committee. During the final two months of the course a candidate must hold a clinical clerkship or similar appointment in the radiological department of a hospital approved by the committee. This part of the course may be done in London or elsewhere. The examination for Part II will be held in July.

Further particulars as to courses and examinations may be obtained from G. Stead, M.A., Secretary for the Diploma, Cavendish Laboratory, Cambridge, or the General Secretary, British Institute of Radiology, 32, Welbeck Street, W.1. Completed application forms must be sent to the Secretary for the Diploma at Cambridge by September 15. Cambridge University has decided to discontinue the granting of the Diploma after 1941. The last course will begin in October, 1940.

The Edinburgh Diploma.—Candidates for the diploma must be graduates in medicine and surgery of the University of Edinburgh, or hold corresponding degrees or qualifications registrable with the General Medical Council of Great Britain, or of such other Universities or Medical Schools as may be recognized for the purpose by the University Court. Candidates are not admitted to the examination for the diploma until after the lapse of not less than one year from obtaining a registrable qualification. The course of study begins in October and extends over a period of not less than three terms. The examination, which is written, oral, and practical, is in two parts: (*a*) physics, and (*b*) radiology. The examination is held twice yearly. Full particulars may be obtained from the Dean of the Faculty of Medicine. In this connexion it may be noted that radiology can now be taken as the special subject in the examination for Membership of the Royal College of Physicians of Edinburgh. Several candidates have already taken radiology

as their special subject; it means that an honours standard has to be attained.

The University of Liverpool grants a Diploma in Medical Radiology and Electrology. Candidates before admission to the examination for the diploma must possess a registrable qualification approved by the university in medicine and surgery, and must have attended courses of instruction in (*a*) physics (two terms); (*b*) (i) radiology and (ii) electrology, during the nine months in the *x*-ray and electrotherapeutic departments of a hospital or hospitals. An examination is held in March and June in physics, in June radiology and electrology. Examination in either part may be taken separately. Fees: tuition, £31 10s.; examination and diploma, £6 5s. An enrolment deposit fee of £5 5s. is charged on application and credited to the fees, but is not returnable in the event of the candidate failing to enrol. These courses commence during the first week in October. Application should be made to the Dean, Faculty of Medicine, the University of Liverpool.

Conjoint Diploma in Medical Radiology (D.M.R., R.C.P.S.).—The examination is divided into two parts, the first comprising physics as applied to radiology, the second medical radiology, with special reference to its clinical application, including radio-diagnosis, *x*-ray therapy, and radium therapy. Both parts will be held in January and July of each year. Candidates may enter for them either together or separately, subject to the production of the required certificates. The course for the diploma extends over one academic year (nine months) of full-time study subsequent to the attainment of a recognized medical qualification. At the discretion of the committee of management the conditions of admission may be modified in special cases, but exemption will not be granted from any part of the examination. A syllabus has been drawn up for Part I of the examination, but not for Part II. The fee for admission or readmission to each part is six guineas. Copies of the regulations may be obtained from the secretary at the Examination Hall, 8–11, Queen Square, W.C.1.

The London Diploma.—The University grants an Academic Postgraduate Diploma in Medical Radiology. The course is open to registered medical practitioners and graduates in medicine of this or another approved university. Students are required to attend a course of study approved by the University, and extending over not less than one academic year, at one or more of the Colleges or Schools of the University. The subjects of the course are as follows: Part I: physics and electrotechnology. Part II: (*a*) radiography and radio-diagnosis; (*b*) radiotherapy. The examination for the Diploma consists of two parts. Candidates may enter for Part I and Part II at the same examination, or may enter for Part I only. The examination will consist of a paper, a practical examination, and an oral examination in each of the subjects under Part I and Part II. Full particulars may be obtained from the Academic Registrar, University of London, W.C.1.

Diploma in Laryngology and Otology

The Conjoint Examining Board in England (Examination Hall, Queen Square, London, W.C.1) grants a Diploma in Laryngology and Otology (D.L.O.) after an examination held in June and December.

The examination comprises two parts: Part I, on the anatomy, embryology, and physiology of the ear, nose, pharynx, larynx, trachea and bronchi, and oesophagus; Part II, on the recognition and use of special instruments and appliances, and the medicine, surgery, and pathology of these regions. Candidates may enter for Part I at any time after a recognized qualification in medicine, surgery, and midwifery has been obtained. Candidates may enter for Part II on completion of one year of special study of diseases of the ear, nose, pharynx, and larynx, after a recognized qualification has been obtained, provided that Part I has been previously passed, and on production of certain certificates. The conditions of study may be modified at the discretion of the Committee of Management in special cases. The fee for admission or readmission to each part is six guineas.

Diplomas in Ophthalmic Medicine

A special Diploma in Ophthalmic Medicine and Surgery is granted by the University of Oxford and by the Conjoint Examining Board in England.

University of Oxford.—The Diploma in Ophthalmology (D.O.) is granted to registered medical practitioners, and to non-registrable graduates of universities approved by the Board of the Faculty of Medicine, after they have passed an examination, which is held annually in June. This examination is open to candidates who have attended a special two-months course of instruction at Oxford, and who have in addition done a ten-months course of clinical ophthalmology at a recognized hospital or hospitals. Entries for the course should be made through the Dean of the Medical School, University Museum, Oxford, from whom any further information that is necessary may be obtained.

The Conjoint Board.—The Diploma in Ophthalmic Medicine and Surgery (D.O.M.S.) of the Conjoint Examining Board of the Royal College of Physicians of London and Royal College of Surgeons of England is issued after completion of an examination held in two parts—in February and July. The examination is partly written, partly oral, partly clinical or practical. Part I comprises anatomy and embryology of the visual apparatus, physiology of vision, elementary optics; Part II comprises optical defects of the eye, ophthalmic medicine and surgery, pathology with special reference to medical and surgical ophthalmology. Candidates may enter for Part I at any time after a recognized qualification in medicine, surgery, and midwifery has been obtained. Candidates may enter for Part II on completion of one year of special study of ophthalmology after a recognized qualification has been obtained, provided that Part I has been previously passed, and on production of certain certificates. The conditions of study may be modified at the discretion of the Committee of Management in special cases. The fee for admission or readmission to each part is six guineas.

Diplomas in Obstetrics

The Society of Apothecaries of London, as stated on page 458, confers a Mastery of Midwifery, and issues a diploma under this title denoting the possession of specialized knowledge of ante-natal care, midwifery, and infant welfare and the public health aspects of these subjects. This is a postgraduate diploma, and is not registrable under the Medical Acts. The same applies also to the new diploma D.C.O.G., which the British College of Obstetricians and Gynaecologists now issues to registered medical practitioners who have had special postgraduate training and experience in the subject and have satisfied the examiners. (See p. 458.)

Diploma in Child Health

The Conjoint Examining Board in England has issued regulations for its new Diploma in Child Health (D.C.H. R.C.P. and S.Eng.), and copies may be had from the Secretary, Examination Hall, Queen Square, W.C.1.

The examination will be held twice a year, in March and October, and will be written, clinical, and oral; fee six guineas. It will comprise the following subjects, special emphasis being laid on their preventive aspects: (*a*) The anatomy, physiology, and pathology in childhood. (*b*) The development of the child, physical and mental, including speech, with their disorders; physical education in childhood. (*c*) The hygiene and dietetics of infancy and childhood. (*d*) Affections of the newborn. (*e*) Disease in infancy and childhood, medical and surgical. (*f*) The therapeutics of infancy and childhood, including remedial treatment, physical and mental. (*g*) Legislation and public administration in regard to the care of children, including the methods of infant welfare centres and of the school medical service. Certificates of experience in children's diseases at a recognized hospital are required.

Diploma in Anaesthetics

The Conjoint Examining Board in England has also issued regulations for a Diploma in Anaesthetics (D.A. R.C.P. and S.Eng.), and copies may be had from the Secretary, Examination Hall, Queen Square, W.C.1.

The examination, to be held in May and November, will be written and oral, the latter part requiring the candidate to demonstrate his knowledge of the use of various types of anaesthetic apparatus. The fee for examination is six guineas, and the subjects are: (*a*) Human anatomy and physiology considered in relation to anaesthesia. (*b*) The history, theory, and practice of anaesthesia, including inhalation anaesthesia;

intravenous, rectal, and other methods of inducing anaesthesia; local, regional, and spinal anaesthesia in all varieties; (c) Pre-operative anaesthesia in its relationship to disease, investigation, preparation, and medication; the recognition of post-operative complications and their treatment in so far as they are related to anaesthesia. (d) The pharmacology and elementary chemistry of drugs used for, or in association with, anaesthesia. Certificates of experience in the administration of anaesthetics in recognized hospitals are required, though the conditions of study may be modified by the Committee of Management at its discretion. Until May 1, 1938, the diploma may be granted without examination to an anaesthetist on the staff of a general hospital associated with a recognized medical school in the British Empire who has held his appointment for not less than ten years; fee six guineas. Inquiries should be addressed to the Secretary of the Board.

Tuberculous Diseases Diploma

Candidates may be admitted to examination for the Tuberculous Diseases Diploma of the University of Wales after the lapse of not less than two years from the date of obtaining a qualification in medicine, surgery, and midwifery, registrable in Great Britain, or in the Dominions, Colonies, and Dependencies of the British Empire. Every candidate must have held a resident post in a tuberculosis hospital, or at an orthopaedic institution providing not less than 100 tuberculosis beds, or shall satisfy the Faculty of Medicine that he has pursued a special study of tuberculosis equivalent to the above for a period of not less than twelve months. The examination is in two parts. Part I (*a*) written, and (*b*) oral and practical, including the examination of patients, and the recognition of specimens; Part II is a written and practical examination on the epidemiology, pathology, and bacteriology of tuberculosis. Every candidate will be required to satisfy the examiners in both parts in the same examination. The course of instruction commences in January and continues until May each year, when the examinations are held. Further particulars may be obtained from the Secretary, Welsh National School of Medicine, 10, The Parade, Cardiff. A limited number of appointments for part-time assistant tuberculosis physicians are advertised annually in September by the Welsh National Memorial Association, enabling suitably qualified and selected candidates to study for the diploma. Particulars on application to the Secretary, Welsh National Memorial Association, Memorial Offices, Westgate Street, Cardiff.

Diploma in Clinical Pathology

The University of London grants an Academic Postgraduate Diploma in Clinical Pathology. The course of study is open to graduates in medicine of this or another approved university, or registered medical practitioners, whose training has, in the opinion of the university, qualified them for registration as students for the diploma. They are required to pursue an approved course of instruction and training, lasting at least one calendar year, as whole-time workers under the supervision of the head of the pathological department of one of the colleges or schools of the university. The examination is held once a year, in December. Candidates must apply to the Academic Registrar for an entry form and a certificate of course of instruction, to be returned duly filled in and attested, together with the fee of ten guineas, by November 8.

University of Lausanne

M.D. EXAMINATION FOR MEDICAL PRACTITIONERS

It has been possible for a long time to obtain the M.D. degree (not registrable in this country) from one of the State Universities in Switzerland—namely, Berne, Geneva, and Lausanne. In 1930 new regulations came into force in the Faculty of Medicine of the University of Lausanne, the main effect of which is to provide a special M.D. examination for medical practitioners from other countries. Particulars may be obtained from Dr. C. A. H. Franklyn, honorary secretary, Lausanne Medical Graduates, 34, Queensway, Wragby Road, Lincoln (booklet and copy of regulations, post free, 2s. 1½d.).

MEDICAL MISSIONARIES

Missionary societies are in constant need of qualified men and women to fill vacancies as they occur in their hospitals, and also to enable them to take advantage of fresh openings. To those suitably endowed the mission field offers unique opportunities for interesting work, and the development of native medical schools, as training institutions in connexion with some of the larger mission hospitals, affords excellent scope for valuable work to medical men and women who are qualified to teach. It is not usually expected that medical missionaries should take a position such as would otherwise be occupied by an ordained clergyman or minister, but it is essential that they should be prepared to exert their influence in any hospital to which they may be sent, so that a Christian atmosphere may be maintained and the work of evangelization be carried on through the ministry of healing.

As for scientific and other qualifications for the work, medical missionaries, in addition to being physically capable of sustaining a life which makes a great demand upon their strength, should be thoroughly well-trained physicians and surgeons. It is very desirable that they should have held a resident appointment at a general hospital, and have a good knowledge of practical surgery, gynaecology, tropical medicine, and the treatment of eye diseases. Useful information can be obtained from the Secretaries of the various Missionary Societies, or from Wm. C. Bentall, O.B.E., F.R.C.S.Ed., Honorary Secretary, Medical Advisory Board on Medical Missions to the Conference of Missionary Societies in Great Britain and Ireland, Rhosilli, Best Beech Hill, Wadhurst, Sussex, or Edinburgh House, 2, Eaton Gate, London, S.W.1.

Dental Surgery

Until the passing of the Dentists Act, 1921, the profession of dentistry in this country was regulated by enactments corresponding very closely with those relating to the practice of medicine—that is to say, there was no direct prohibition of the act of practice; and the Dentists Act of 1878 gave the same degree of protection to legally qualified and registered dentists as was accorded to registered medical practitioners—namely, the reservation of the use of certain titles. This Act provided also (1) that no person should take or use the name or title of "dentist" (either alone or in combination with any other word or words) or of "dental practitioner," or any other name, title, or description expressed in words or by letters implying that he was specially qualified to practise dentistry, unless he was registered, under a penalty of £20; and (2) that an unregistered person could not recover any fee or charge in respect of any dental operation, attendance, or advice. But, in the case of the practice of medicine by unqualified and unregistered persons, certain deterrent factors came into play—such as the inability to give a death certificate—which did not operate to the same extent in the case of dentistry; hence, unqualified practice was far more prevalent in dentistry than in medicine, and increased after a decision of the House of Lords placing a narrow interpretation upon the words "specially qualified to practise dentistry," by defining the word "qualified" as not referring to competence but to the possession of a recognized diploma.

Dentists Act, 1921

This unsatisfactory position was remedied by the passing into law of the Dentists Act, 1921; its provisions are based largely on the recommendations of a departmental committee appointed in 1917 by the Privy Council "to investigate the extent and gravity of the evils connected with the practice of dentistry and dental surgery by persons not qualified under the Dentists Act." Since November 30, 1922, no person has been permitted by law to practise or hold himself out, whether directly or by implication, as practising or as being prepared to practise dentistry unless he is on the *Dentists Register* kept under the Dentists Act, 1878. The practice of dentistry is defined as including "the performance of any such operation and the giving of any such treatment, advice, or attendance, as is usually performed or given by dentists," and the performing of any operation or the giving of any "treatment, advice, or attendance on or to any person as preparatory to or for the purpose of or in connexion with the fitting, insertion, or fixing of artificial teeth." The maximum penalty incurred by an unregistered practitioner is £100 for each offence. There are, however, certain important exceptions to the requirement of registration. A registered medical practitioner may practise dentistry without being on the *Dentists Register*, though, under the National Health Insurance (Dental Benefit) Regulations, he cannot give dental treatment to insured persons as an additional benefit unless he is registered in the *Dentists Register*. A registered pharmaceutical chemist or chemist and druggist may extract a tooth where the case is urgent and where no doctor or dentist is available, but the operation must be performed without any kind of anaesthetic; and minor dental work may be performed in a public dental service under the personal supervision of a registered dentist, provided it is in accordance with conditions approved by the Minister of Health after consultation with the Dental Board.

Dentistry may be carried on by a corporate body provided that the majority of the directors and all the operating staff are registered dentists, and that no business other than dentistry or only some business ancillary to dentistry is carried on by the company. Companies carrying on the business of dentistry at the present time are permitted to continue to do so with certain restrictions, provided that the name of the company as well as the names of the directors have been entered in a list kept under the Act for that purpose. Every director or manager of a company convicted of an offence under the Act will be held to be guilty of the offence unless he proves that the offence was committed without his knowledge, and the court may, in addition to a fine, order that the name of any director convicted shall be removed from the list of directors aforesaid.

The Dental Board

On the establishment of the Dental Board in 1921 certain powers and duties of the General Medical Council were transferred to it, including the duty of erasing from the *Dentists Register* any entry which has been incorrectly or fraudulently made. An inquiry into the case of a person alleged to be liable to have his name erased from the *Register* is made by the Board, which reports its findings to the General Medical Council, the order directing the erasure being made by the Council. A name erased from the *Register* can only be restored by the Council upon a report made by the Board. An appeal to the High Court may be made by any person aggrieved either by refusal of the Board to register his name or by the removal of his name from the *Register*. The administrative expenses of the Board are defrayed from the registration fees and annual retention fees, but any surplus may be allocated to purposes connected with dental education and research or to any public purposes connected with the profession of dentistry. The offices of the Dental Board are at 44, Hallam Street, London, W.1.

Dental Education and Examination

The preliminary examination in arts is the same for medical and dental students, and the early stages of their education embrace much the same subjects[1]; and, as the dental student is required to obtain a knowledge of the broad principles of medicine and surgery, it is necessary for him to pursue some portion of his studies at a medical school as well as at a special dental school, the latter not undertaking the teaching of these subjects. Registration as a dental student is not in all cases compulsory, though it is to be advised as convenient as affording proof of the date at which professional education began, and it is required by most of the licensing bodies, all of whom insist upon a curriculum covering four academic years.

Degrees and diplomas in dentistry are granted by the Universities of Belfast, Birmingham, Bristol, Dublin, Durham, Leeds, Liverpool, London, Manchester, St. Andrews, Sheffield, and the National University of Ireland, as will be found stated in the articles on these universities. Licences in dentistry entitling the holder to be registered on the *Dentists Register* are granted by the Royal Colleges of Surgeons of England, of Edinburgh, and in Ireland, and by the Royal Faculty of Physicians and Surgeons of Glasgow.

Recognized dental schools are numerous. In London there are those connected with the Royal Dental Hospital, Leicester Square; the National Dental Hospital (now the University College Hospital Dental School), Great Portland Street; Guy's Hospital; King's College Hospital; and the London Hospital. In the provinces there are the Birmingham Dental Hospital; the Royal Infirmary and the General Hospital, Bristol; the Dental Hospital and the Public Dispensary, Leeds; the Dental Hospital, Liverpool; the Dental Hospital, Manchester; the Sutherland School, Newcastle-on-Tyne; the Royal Hospital, Sheffield. In Scotland there are the Dental Hospital, Dundee; the Incorporated Dental Hospital and School, Edinburgh; and the Incorporated Dental Hospital, Glasgow; and in Ireland, the Belfast Dental School, the Incorporated Dental Hospital of Ireland, Dublin, and the Royal College of Surgeons in Ireland, Dublin.

All who think of becoming dentists may be advised to study a memorandum, drawn up for their guidance on behalf of the Board, setting out in convenient form and in simple language information for which the Board is often asked.[2] It will be seen from this pamphlet that in order to assist suitable students the Board has instituted a system of bursaries in aid of the payment of fees. Bursaries are limited in amount to £30 a year (subject to exceptions in favour of candidates who are sons of dentists or have received so much previous training in dental mechanics as to be entitled to a reduction of a year in the length of their curriculum).

General Medical Council's Recommendations

The Dentists Act still leaves to the General Medical Council the duty of controlling the course of study and examinations required for dental qualifications.

Revised recommendations as to the course of study and examinations to be required of candidates for degrees or licences in dentistry or dental surgery were adopted by the Council in 1933, and came into force on October 2 in that year. We print them below in a somewhat abridged form.

PRELIMINARY EXAMINATION AND REGISTRATION

Every dental student should, at the beginning of his studentship, be registered in the manner and under the conditions prescribed for medical students. Before registration in the *Dental Students' Register* every applicant should be required to have passed, in addition to the examination in

[1] See the Memorandum on Students' Registration printed in the article on the General Medical Council at page 448.

[2] *Memorandum on the Procedure to be Adopted by Those who Desire to Enter the Profession of Dentistry, with Notes on Costs and Prospects.* 1936. Dental Board of the United Kingdom, 44, Hallam Street, W.1. (Price 1s., post free.)

general education, which shall be the same as that required for medical students, an examination in elementary physics and chemistry, conducted or recognized by one of the licensing bodies, which shall also be the same as that required for medical students. Before registration as a dental student every applicant should produce evidence that he has attained the age of 17 years.

PROFESSIONAL STUDY

Every candidate for a degree or licence in dentistry or dental surgery should be required before admission to the final or qualifying examination to produce certificates showing:

(i) That he is at least 21 years of age.

(ii) That he has been registered as a dental student.

(iii) That he has, subsequently to registration as a dental student, been engaged in professional study for at least four years, of which three years at least shall have been spent at a school or schools recognized for professional study by one of the licensing bodies.

(iv) That, subsequently to registration as a dental student, he has attended at a recognized medical or dental school courses of instruction which should be the same as those for medical students, in (*a*) chemistry, and (*b*) physics, in their application to medicine and dentistry, (*c*) elementary biology. (A student who has diligently attended an approved course of elementary biology in a teaching institution recognized by a licensing body may be admitted to a professional examination in elementary biology immediately after his registration as a dental student.) That he has attended at a recognized medical school courses of instruction, *specially adapted for students in dentistry*, in the following subjects: (*d*) human anatomy, including dissections for three academic terms of nine months. This should include not less than 40 lectures and/or demonstrations. The course of dissections shall include dissections of the head and neck. (*e*) Physiology (with laboratory instruction) extending over two academic terms of six months. This should include not less than 40 lectures and/or demonstrations; also a practical course in chemical and experimental physiology of not less than 30 hours. (*f*) Histology should consist of a practical course of not less than 40 hours. (*g*) General pathology for two academic terms (not less than 40 lectures and/or demonstrations). (*h*) Bacteriology for one term (not less than 10 lectures and 24 hours' practical work). (*i*) Medicine for two academic terms or six months (not less than 30 meetings of the class). (*j*) Surgery for two academic terms or six months (not less than 40 meetings). (*k*) Clinical instruction in a recognized general hospital on selected cases in medicine and in surgery over a period of at least nine calendar months, including instruction in venereal diseases with any bearing on dentistry. Each of these courses should consist of not less than 50 meetings. It is desirable that the systematic courses in medicine and surgery and the clinical instruction should, so far as possible, be co-ordinated. The course of instruction in medicine, surgery, and pathology should normally be taken after the student has passed the examinations in human anatomy and physiology.

(v) That he has attended at a recognized dental school courses of instruction in: (*a*) Special anatomy, human and comparative. The course should comprise a minimum of 20 meetings of the class. (*b*) Practical normal and morbid histology (16 meetings). (*c*) Dental surgery (20 meetings). (*d*) Materia medica and therapeutics (10 meetings). (*e*) Metallurgy with practical work and demonstrations (16 meetings). (*f*) Dental mechanics and prosthetics (20 meetings). (*g*) Instruction in the use of anaesthetics employed in the practice of dentistry. (*h*) Instruction in radiology and its application to dentistry. (*i*) The principles of orthodontics (10 meetings).

(vi) That he has for at least two calendar years attended the practice of a recognized dental hospital or of the dental department of a general hospital recognized by a licensing body as forming part of a dental school.

(vii) That he has received for not less than 24 calendar months, or for 2,000 hours, practical instruction in dental mechanics. No portion of such practical instruction which is taken before registration shall be reckoned as a portion of the four years of professional study required, but in the event of hardship arising in a particular case, an application for exceptional treatment may be submitted to the Education Committee of the General Medical Council. It is recommended that practical instruction in dental mechanics shall be taken at a recognized dental hospital and school. If any part of such instruction be taken by the candidate as a pupil with a registered dentist, the time devoted to it shall be at least twice the time required for the corresponding instruction taken at a dental school.

PROFESSIONAL EXAMINATIONS

The examinations for a degree or licence in dentistry should be partly written, partly oral, and partly practical, and should include the following subjects: (*a*) Chemistry, Physics, and Biology in their bearing on medicine and dentistry. (*b*) Human anatomy, the oral examination in which should be conducted mainly on dissections, especially of the head and neck. (*c*) Physiology, the oral examination in which should include practical physiological tests. (*d*) Histology, which may be included in the examination in either anatomy or physiology. (*e*) General pathology, the oral examination in which should be conducted with the aid of specimens, including those of diseases connected with dentistry. (*f*) Bacteriology, the oral examination in which should include simple practical tests. (*g*) Medicine and surgery, the oral examinations in which should include a clinical examination of patients. (*h*) Special anatomy, human and comparative. (*i*) Dental mechanics, prosthetics and metallurgy, including practical tests. (*j*) Dental surgery, including special pathology and histology, materia medica and therapeutics, and the principles of orthodontics. (*k*) Practical dental surgery, which should include the usual dental operations —for example, filling and extraction of teeth and the giving of anaesthetics—and a clinical examination on the diagnosis and treatment of dental disease and abnormal conditions of the oral cavity.

A candidate should produce a certificate of having administered general anaesthetics on at least ten occasions.

ACKNOWLEDGEMENT

The detailed information published in this Educational Number of the *British Medical Journal* for the benefit of intending students of medicine and newly qualified practitioners has been revised throughout with the co-operation of the deans and secretaries of the medical schools and kindred institutions and of officials in the several public services, to all of whom we wish to acknowledge our indebtedness.

Sterilization of Surgical Ligatures

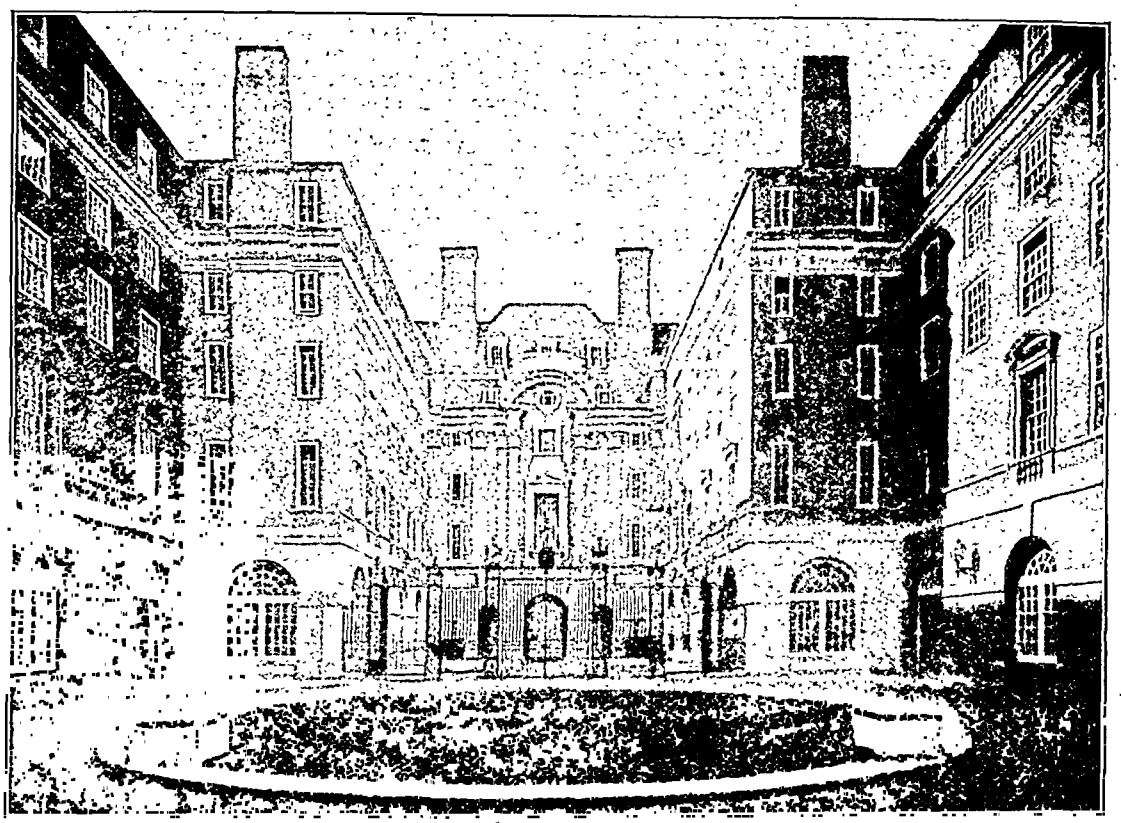
The Minister of Health has issued new regulations, which will come into force on October 1, requiring all surgical ligatures and sutures, including catgut, which are not sold under the special licensing arrangements of the Therapeutic Substances Act of 1925 to bear a label stating in prescribed terms that efficient sterilization is necessary before use. Catgut sold under the Minister's licence is free from any possible risk of infection, as its manufacture is strictly controlled and it is properly sterilized before being offered for sale. Deaths, however, have been known to occur from the use of ligatures (including catgut not sold under licence) which have not been properly sterilized, and the Minister drew special attention to this risk in a memorandum issued just a year ago to county and county borough councils and, through the British Hospitals Association, to every voluntary hospital in England and Wales (*Journal*, September 26, 1936, p. 636). The new regulations introduce a fresh safeguard by making it easy to distinguish other ligatures and sutures from properly sterilized catgut.

[The present issue being the Annual Educational Number, much current material is held over, and the "Epitome of Current Medical Literature" is not published this week.

The British Medical Association

ITS AIMS, WORK, AND CONSTITUTION

The British Medical Association, as stated in our introductory article on the Profession of Medicine, was founded in 1832 to promote the medical and allied sciences, to maintain the honour and interests of the profession, and to foster a feeling of friendship among its members. To attain these objects it holds meetings, local and central, for the discussion of medical and scientific subjects and of professional affairs ; it publishes the *British Medical Journal* and other scientific publications ; it maintains a reference and lending library ; it has instituted lectures, and scholarships and grants in aid of research. It concerns itself with every side of medical work, and much of the Association's daily work consists in aiding individual members in solving professional problems. The Association is the oldest, largest, and most powerful British organization devoted to the welfare of the medical profession. Its membership is now 36,000. It has a fine building in Tavistock Square, London, for its headquarters. These premises, designed by Sir Edwin Lutyens, R.A., were formally opened in 1925 by King George V, Patron of the Association.



British Medical Association House, London

Constitution and Administration

The Association has Branches and Divisions throughout Great Britain and Northern Ireland, and also in the Dominions, Colonies, and Dependencies. Thus there are 43 Branches and 189 Divisions in Great Britain and Northern Ireland, and 68 Branches and 64 Divisions in the British Empire over-seas. The Branches in Australia and South Africa are linked up in Federal Councils for these respective areas. The Irish Free State Medical Union (I.M.A. and B.M.A.) was formed at the beginning of last year, and is now a corporate group of Branches and Divisions within the Association. To the Association there is affiliated the Canadian Medical Association. Members of Divisions elect representatives on the Branch Councils and also a member or members of the Representative Body, which is the governing body of the Association and determines its policy.

The Council is the executive of the Association. It is elected partly by the Divisions and Branches and partly by the Representative Body, and includes representatives of the public health service, Navy, Army, Air Force, and Indian Medical Services. The Representative Body and Council elect standing committees to take charge of different subjects. Among these may be mentioned the Science, Medico-Political, Ethical, Hospitals, Public Health, and Naval and Military Committees. There are Committees also for the Dominions, Scotland, and Wales ; and for the working machinery of the Association, such as the Organization, Finance, and Journal Committees. The Insurance Acts Committee, elected partly by the Association and partly by insurance medical practitioners, is the recognized executive and mouthpiece of the insurance practitioners of Great Britain and Northern Ireland.

Privileges of Members

A member of the Association has the right—

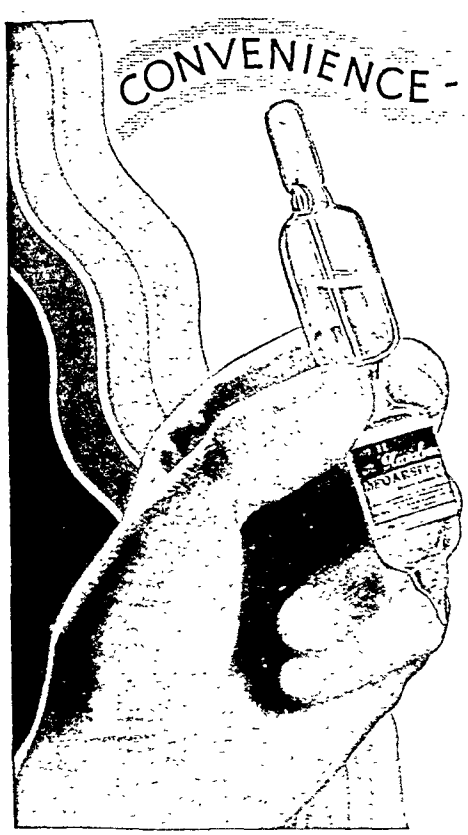
1. To attend the annual and other general meetings of the Association and the meetings of the Division and Branch to which he or she belongs.
2. To receive by post the *British Medical Journal*, published weekly, which gives a full record, with commentary, of progress in clinical and scientific medicine, and of medico-political affairs and medical economics.
3. To take part in the election of the representative of his or her Division in the Representative Body, and also in the election of members of the Council.
4. To receive the help and advice of the central office in any professional difficulty.
5. To use the Library as a reading room, and to borrow current medical or scientific books on payment of postage.

The full benefits of the Association can be secured only by the co-operation of large numbers of the medical profession, for the greater the membership and the funds the more efficient and influential the organization. A generous concession is made as regards subscription for those recently qualified, for whom the Association has done much in improving the conditions of appointments in the public services or in civil life. The Association's work for the Services is well known. It feels a special responsibility towards those members of the profession who by reason of their position are precluded from taking common action.

Subscriptions and Applications for Membership

The ordinary subscription to the British Medical Association is 3 guineas a year for members resident in Great Britain and Northern Ireland, but this is subject to exceptions. Thus, newly qualified practitioners elected within two years of registration pay half this sum up to the end of the fourth year after registration; medical officers on the active list of the R.N., R.A.F., R.A.M.C. (Regular), and I.M.S. pay 2 guineas ; concessions are made also to members (in the British Isles) of forty years' standing, to members of ten years' standing who have retired from practice, to medical married couples residing together, and to certain whole-time teachers and research workers. The ordinary subscription for members living abroad is 1½ guineas, but many over-seas Branches have special local subscriptions. After fifty years of membership no further subscription is payable. A member elected after June 30 pays half the subscription for that year.

All duly qualified British medical practitioners are eligible for election. Full particulars can be obtained from the Secretary, B.M.A. House, Tavistock Square, London, W.C.1.



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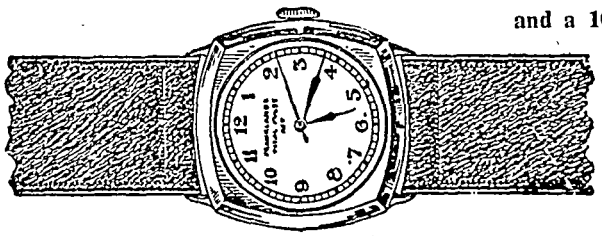
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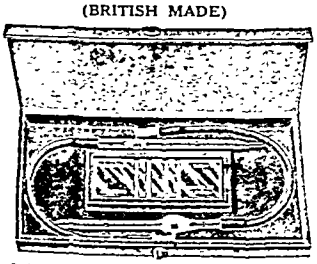
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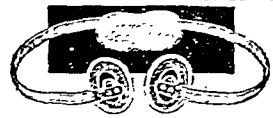
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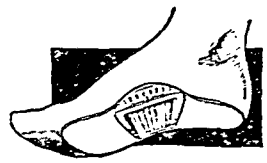
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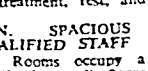
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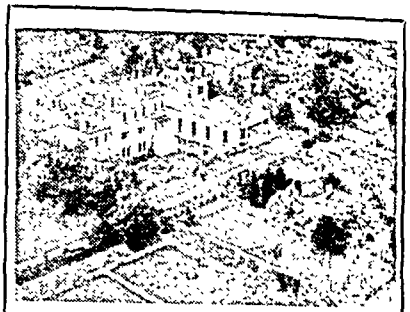
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WINTER SESSION, 1937-38

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Mondays and Thursdays, October, 1937, to March, 1938, commencing Monday, October 18th, at 5 o'clock. On the First Thursday of the month the hour is 3.30 p.m.

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Fridays at 5 p.m., October to December, commencing Friday, October 15th.

AN INTRODUCTORY LECTURE TO THE WHOLE EDUCATION COURSE will be delivered at The Hastings Hall, British Medical Association House, Tavistock Square, W.C.1, by kind permission of the British Medical Association on Friday, October 8th, 1937, at 5 p.m., by CHARLES E. WHEELER, M.D., B.S., B.Sc.Lond., entitled "A Hundred Years of a Heresy."

Medical Men and Women are invited to attend this Lecture.

TUTORIAL CLASS

A class for individual study of the Materia Medica by the Repertory and References to Patients will be conducted by DOUGLAS M. BORLAND, M.B., Ch.B.Glasg., Physician to The London Homoeopathic Hospital, on

Fridays, at 6.15 p.m., October to March, commencing October 15th.

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On Monday and Friday afternoons, at 2 o'clock throughout both the Winter and Summer Sessions, the Medical Tutor to the Hospital, WILLIAM WILSON RORKE, M.B., Ch.B.Glasg., conducts an Out-patient Clinic for the purpose of instruction in the application of Homoeopathic principles.

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on
OCTOBER 5th, 12th, 19th, 26th, NOVEMBER 2nd, 9th at 4.30 p.m.

DEPARTMENT OF SURGERY

A COURSE OF THREE LECTURES
on
ENDOSCOPIC METHODS OF EXAMINATION
will be given by
MR. V. E. NEGUS, M.S., F.R.C.S.
on
OCTOBER 1st, 8th, 15th at 2.30 p.m.

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

A COURSE OF FIFTEEN LECTURES
on
PRESENT-DAY OBSTETRICS
will be given as follows:—THURSDAY AFTERNOONS AT 3.30 p.m.

Oct.	7	Antenatal Care	Dame LOUISE McILROY, D.B.E., LL.D., M.D., F.R.C.P., F.C.O.G.
„	14	Radiology in Obstetrics and Gynaecology	Dr. R. E. ROBERTS, M.D., D.M.R.E.
„	21	Radiology in Obstetrics and Gynaecology (contd.)	Dr. R. E. ROBERTS, M.D., D.M.R.E.
„	28	Breech Cases	Prof. J. CHASSAR MOIR, M.D., F.R.C.S., F.C.O.G.
Nov	4	Puerperal Sepsis	Dr. R. M. FRY, M.R.C.S., L.R.C.P.
„	11	Obstetric Emergencies	Dr. W. H. F. OXLEY, M.R.C.S., L.R.C.P., F.C.O.G.
„	18	Abortion	
„	25	Haemorrhage of Late Pregnancy	Prof. F. J. BROWNE, M.D., D.Sc., F.R.C.S., F.C.O.G.
Dec.	2	Haemorrhage of Late Pregnancy (contd.)	Prof. F. J. BROWNE, M.D., D.Sc., F.R.C.S., F.C.O.G.
„	9	Toxaemias of Pregnancy	Mr. G. F. GIBBERD, M.S., F.R.C.S.
„	16	Toxaemias of Pregnancy (contd.)	Mr. G. F. GIBBERD, M.S., F.R.C.S.
1938			
Jan.	6	Disproportion and Difficult Labour	Mr. LESLIE WILLIAMS, M.D., M.S., F.R.C.S., F.C.O.G.
„	13	Disproportion and Difficult Labour (contd.)	Mr. LESLIE WILLIAMS, M.D., M.S., F.R.C.S., F.C.O.G.
„	20	Caesarean Section	Mr. J. BRIGHT BANISTER, M.A., M.D., F.R.C.P., F.R.C.S., F.C.O.G.
„	27	Anaesthesia and Analgesia.	Prof. J. CHASSAR MOIR, M.D., F.R.C.S., F.C.O.G.

These lectures are for regular students of the School, but a limited number of tickets are available, without fee, to medical practitioners.

Applications for tickets should be addressed to the Dean, British Postgraduate Medical School, Ducane Road, W. 12.

NEUROLOGY AND PSYCHOPATHOLOGY

CLINICAL INSTRUCTION AT THE

WEST END HOSPITAL FOR NERVOUS DISEASES

WELBECK STREET, W.1

D.P.M. (Conjoint Board). A two-months' course, approximately half-time, in Neurology, suitable for Part II of this examination will be held during October and November, 1937. The course will be chiefly in the afternoons and will include clinical demonstrations in neurology and the psychoneuroses with special demonstrations in neuropathology; neurological ophthalmology, radiology, and surgery, child guidance; the study of delinquency, etc. The course may be taken in whole or in part. Fee for the full course: £5 5s.

M.R.C.P.(Lond.). An intensive course in Neurology for this examination, with facilities for examination of cases, will be held in December, 1937.

Special Courses. These will be arranged during the year for those interested in, amongst others, the following subjects: the psychoneuroses and psychotherapy; study and treatment of delinquency; child guidance; speech training and speech records; medical ophthalmology; neurological orthopaedics and physiotherapy; neurological radiology.

Practice of the Hospital. Attendance upon this in the various departments for both in- and out-patients is open to practitioners at stated times. Fee: £2 2s. per month.

Senior Undergraduates. Facilities exist in the various departments of the hospital for the instruction of senior undergraduate students in neurology and related subjects. Fee: £1 1s. per month.

For particulars of the above apply to the Dean, T. Rowland Hill, M.D., M.R.C.P., or to the House Governor, West End Hospital for Nervous Diseases, London, W.1.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL

(The University of London) Albert Embankment, S.E.

The finest situation in London.

The WINTER SESSION begins on TUESDAY, OCTOBER 5th, 1937.

FULL CURRICULUM. Newly rebuilt and equipped Laboratories for Preliminary and Intermediate Subjects which are taught by Professors and Teachers recognized by the University of London. For Clinical work the fullest facilities are provided, including a special Maternity Ward, and liaison with St. James's Hospital, Balham, and with Lambeth Hospital.

UNIVERSITY MEN can join the School for any part of their M.B. Course, and for Clinical work can join in January, April, July, or October.

CLASSES for the PRIMARY and FINAL F.R.C.S. are held before each Examination.

A RESIDENTIAL HOSTEL and Students Club, with all amenities, is attached to the Hospital.

ENTRANCE SCHOLARSHIPS in SCIENCE and special UNIVERSITY SCHOLARSHIPS are awarded by Examination in July every year.

PROSPECTUS and full particulars may be obtained from the Secretary, The Medical School, St. Thomas's Hospital, London, S.E.1.

THE LONDON SCHOOL OF DERMATOLOGY
ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 5, LISLE STREET, LEICESTER SQUARE, W.C.2

The CHESTERFIELD LECTURES, constituting a systematic Course in Dermatology, will be given at 5 p.m. from October 5th to December 2nd, and during January and February, 1938.

SYLLABUS—WINTER SESSION

1937.	Subject.	Lecturer.
Oct. 5, Tues.	Eczema	Dr. W. GRIFFITH
„ 7, Thurs.	Animal Diseases Communicable to Man	Dr. M. SYDNEY THOMSON
„ 12, Tues.	Treatment of Some Common Skin Diseases	Dr. J. E. M. WIGLEY
„ 13, Wed.	Introduction to Histopathology of the Skin	Dr. I. MUENDE
„ 14, Thurs.	Ringworm Infections	Dr. J. M. H. MACLEOD
„ 19, Tues.	Psoriasis	Dr. H. W. BARBER
„ 20, Wed.	Histopathology of Common Skin Diseases	Dr. I. MUENDE
„ 26, Tues.	Electro-therapeutics	Dr. W. KNOWSLEY SIBLEY
„ 28, Thurs.	Dermatological Neuroses	Dr. W. J. O'DONOVAN
Nov. 2, Tues.	Skin Affections of the Hands and Feet	Dr. G. B. M. HEGGS
Nov. 4, Thurs.	Syphilis Through Four Centuries	Dr. H. CORSI
„ 9, Tues.	Malignant Growths of the Skin	Dr. H. MACCORMAC
„ 10, Wed.	Histopathology of Chronic Granulomata	Dr. I. MUENDE
„ 11, Thurs.	Seborrhoea and Seborrhoeic Dermatitis	Dr. G. B. DOWLING
„ 16, Tues.	Infantile Eczema and Papular Urticaria	Dr. W. N. GOLDSMITH
„ 17, Wed.	Histopathology of New Growths of the Skin	Dr. I. MUENDE
„ 23, Tues.	Cutaneous Affections due to Sunlight	Dr. HUGH GORDON
„ 25, Thurs.	The Sarcoids and Lupus Pernio	Dr. A. M. H. GRAY
„ 30, Tues.	Virus Diseases of the Skin	Dr. R. T. BRAIN
Dec. 2, Thurs.	Bullous Eruptions	Dr. J. L. FRANKLIN

A further Course will be held during January and February, 1938.

An Examination will be held at the end of the Course in March, and the CHESTERFIELD MEDAL will be awarded to the best candidate, provided the required standard is reached. An intensive Course will also be held during the month of May.

CLINICS.—Instruction will be given daily in the Out-Patient Department, as follows:—

Monday, 2 P.M.	Dr. GRIFFITH.	Wednesday, 2 P.M.	Dr. WIGLEY.	Friday, 2 P.M.	Dr. SIBLEY.
6 P.M.	Dr. DORE	6 P.M.	Dr. DOWLING.	6 P.M.	Dr. BRAIN.
Tuesday, 2 P.M.	Dr. FORMAN.	Thursday, 2 P.M.	Dr. CORSI.	Saturday, 2 P.M.	THE MEDICAL
6 P.M.	Dr. MUENDE.	6 P.M.	Dr. GOLDSMITH.		REGISTRAR.

LABORATORY.—Arrangements can be made for Classes, individual instruction, or for research work. For Particulars and Fees apply to the Dean.

FEES.—For Hospital Practice, including Lectures, One Guinea per month. Registered Medical Students may attend the Lectures free on signing their names and giving the name of their Hospital.

Medical Practitioners will be welcome as occasional visitors on presentation of their cards. For further particulars apply to Dean or Secretary.

LEONARD G. R. TURPIN, Secretary. J. E. M. WIGLEY, M.B., Dean.

THE HOSPITAL FOR SICK CHILDREN
GREAT ORMOND STREET, LONDON, W.C.1.
MEDICAL SCHOOL FOR POST-GRADUATES

THE HOSPITAL CONTAINS 257 BEDS. with an average admission of over 7,000 In-patients per annum, whilst in the Out-Patient Department about 30,000 new patients are seen each year.

THE MEDICAL SCHOOL is recognised by the Universities of Oxford, Cambridge and London and by the Conjoint Board of England, as a Teaching Institution where students receive instruction in the diseases of children for such period as is required by the regulations of the Conjoint Board.

POST-GRADUATE INSTRUCTION, open to all qualified medical men and women, is given daily at both morning and afternoon sessions. Morning sessions, 10 to 12 noon, include Medical and Surgical Out-patient Clinics; Ear, Nose and Throat Clinic, Wednesdays 12 to 1 p.m. Afternoon sessions include Ward Visits and Surgical operations; Eye Clinic once a week; Skin and Dental Clinics once a week; Morbid Anatomy Demonstration, Wednesday 11-12 noon. Instruction is also given in the Venereal Diseases Department, and in the use of Anaesthetics in dental and tonsillectomy operations.

There are three terms yearly, each of approximately 13 weeks, during which lectures (particulars of which are published in advance in the medical press) are given on Thursday afternoons:—Clinical, 2-3 p.m., and Clinico-pathological or Biochemical, 3 to 4 p.m.

Fees: One week, 1½ guineas; two weeks, £3 3s.; one month, £5 5s.; two months, 7½ guineas; three months, or whole term, £10 10s. Clinical Clerkships in the wards are available for 4th and 5th year undergraduates. Special Clinical Assistantships for Post-graduate students for periods of 3 months and upwards can be arranged.

SPECIAL COURSES IN PRACTICAL PATHOLOGY, consisting of six demonstrations, are also given at the Hospital. These courses demonstrate such methods as can be usefully carried out away from a laboratory and are of general application. Fee for each course £3 3s.

FULLER DETAILS may be obtained from the Secretary at the Hospital.

H. F. RUTHERFORD, Secretary. W. G. WYLLIE, Dean.

GUY'S HOSPITAL MEDICAL & DENTAL SCHOOLS.
(UNIVERSITY OF LONDON.)

THE HOSPITAL, which contains 681 Beds, is situated one minute's walk from London Bridge Railway Stations.

SPECIAL CLASSES are held in CHEMISTRY, PHYSICS, and BIOLOGY for the First M.B. Examination of the University of London and for the Pre-Medical Examination for the "Conjoint" and L.D.S. Diplomas.

THE WINTER SESSION will commence on TUESDAY, OCTOBER 5th, 1937.

ENTRANCE SCHOLARSHIPS.—MEDICAL SCHOOL.

The following Entrance Scholarships are awarded annually in the month of April.

A.—Open Junior Scholarships.—1. An ARTS SCHOLARSHIP of the value of £100. (2) A SCIENCE SCHOLARSHIP of the value of £100. 3. A WAR MEMORIAL SCHOLARSHIP of the value of £200, awarded alternately in Arts and Science. This Scholarship is open every other year; the next award will be made in 1938 in Science.

B.—Confined Scholarship in Science.—A JUNIOR SCIENCE SCHOLARSHIP of the value of £100 is offered to Candidates who have attended the Preliminary Science Classes at this School for a full academic year.

The following Entrance Scholarships are awarded annually in the month of June or July:—

C.—University Entrance (British Universities) Scholarships.—1. A WAR MEMORIAL SCHOLARSHIP the value of which shall be a free undergraduate medical education for a period of three years. 2. An EXHIBITION of the value of £60. These Scholarships are awarded on the results of an Examination which is held in common with the Medical Schools of St. Bartholomew's and St. Thomas's Hospitals. Subjects: Candidates will be examined in two of the following Subjects, at their option. (1) Human Anatomy and Embryology; (2) Physiology; (3) Organic Chemistry; (4) General Pathology, including Bacteriology.

THE DENTAL SCHOOL.

Offers Two Open Scholarships in April of each year: 1. A WAR MEMORIAL SCHOLARSHIP IN ARTS of the annual value of £40 for four years. 2. A SCIENCE SCHOLARSHIP of the value of £40 per annum for not more than four years.

Numerous Prizes, Medals, and Scholarships are open for competition during the period of Studentship.

For further particulars and for the Prospectus containing information as to the Course of Study advised, the Residential College, Fees, &c., application should be made either personally or by letter to *The Dean, Guy's Hospital Medical School, London Bridge, S.E.1.*

THE

METROPOLITAN EAR, NOSE, & THROAT HOSPITAL

(1838) (INCORPORATED),

FITZROY SQUARE, LONDON, W.1

FACILITIES FOR CLINICAL WORK are afforded to Medical Practitioners and Students. Fee for one month, 3 Guineas; for three months, 5 Guineas.

PRACTICAL DEMONSTRATIONS are given daily (Saturdays excepted) at 3 p.m., in the manipulation of instruments used in the Diagnosis and Treatment of Diseases of the Ear, Nose, and Throat.

CLINICAL ASSISTANTS are appointed as vacancies occur, and have responsible duties. Further particulars may be obtained from the Secretary. L. L. PHILLIPS.

LONDON SCHOOL of HYGIENE & TROPICAL MEDICINE

(University of London).

Incorporating the Ross Institute.

DIPLOMA IN PUBLIC HEALTH

The Course of Study for the UNIVERSITY OF LONDON DIPLOMA covers a period of nine months' whole-time work.

THE COURSE WILL COMMENCE ON SEPTEMBER 27th, 1937.

Inclusive FEE, 54 guineas, to cover lectures, demonstrations, the necessary practical work in public health departments, and instruction in infectious diseases, etc.

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE (Eng.)

THE COURSE OF STUDY IS DIVIDED INTO TWO PARTS: Part I is a three months' course and Part II a two months' course. This Course of Study is recognised by the University of London as a Course for Associate Students.

DATES OF THE COURSES, 1937-8.

PART I. *September 27th—December 17th*, 1937. *January 3rd—March 25th*, 1938. *April 4th—June 24th*, 1938.

PART II. *January 17th—March 18th*, 1938. *April 19th—June 17th*, 1938.

Fees (inclusive): Part I, £25; Part II, £15.

DIPLOMA IN BACTERIOLOGY

The Course of Study for the UNIVERSITY OF LONDON DIPLOMA commences in October, 1937. Inclusive FEE £47 15s.

EPIDEMIOLOGY AND VITAL STATISTICS

Special Three-monthly Advanced Courses. Composition FEE, 7 guineas.

INDUSTRIAL PHYSIOLOGY & PSYCHOLOGY

Two courses are provided, one lasting a year and the other two weeks. The shorter course is restricted to persons with adequate industrial experience.

For Prospectuses, Synopses of Lectures, etc., apply to the SECRETARY, LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, KEPPEL STREET (Gower Street), LONDON, W.C.1. (Museum 3041.)

NATIONAL HOSPITAL FOR DISEASES OF THE HEART

WESTMORELAND STREET, W.1.

The Clinical Practice of the Hospital in the Out-patient Department and the Wards is open to Post-Graduates. Fees: One Month, £2 2s.; Three Months, £5 5s.

Under-Graduates who have completed their fourth year are admitted to the Practice of the Hospital at specially reduced fees.

Special Courses of two weeks' duration are held in January-October only. Fee £7 7s.

Further particulars may be obtained on application to the Secretary at the Hospital.

Westminster Hospital Medical School

(UNIVERSITY OF LONDON)

The Medical School, centrally situated, is only a few minutes' walk from the Hospital. The entire teaching of the Hospital and School is devoted to the subjects of the Final Examinations. Arrangements are made for the tuition required for Preliminary and Intermediate subjects.

SESSIONS COMMENCE 1st WEEK IN JANUARY, APRIL, JULY, OCTOBER

OPENING OF NEW BUILDINGS.—The NEW MEDICAL SCHOOL, at present in course of construction in Horseferry Road, will be opened in 1938. Adjacent, on the opposite side of St. John's Gardens, the new WESTMINSTER HOSPITAL, of 400 beds, is rapidly approaching completion.

SCHOLARSHIPS.—Four Scholarships in Preliminary Subjects each to the value of £75 are offered in May of each year; Four Competitive Scholarships in Anatomy and Physiology each to the value of £75 are offered in April and September of each year

RESIDENT APPOINTMENTS.—Paid appointments as Medical, Surgical, and Obstetric Registrars, Casualty Officers, House Physicians, House Surgeons, and Anaesthetist, are available for Students upon qualification. There are excellent opportunities for research work in the endowed Carlill Laboratories. The number of students is strictly limited to ensure the maximum advantages of individual clinical teaching, and to afford the large majority of those who qualify the opportunity to secure one of these very valuable appointments.

FEES.—Annual composition fee £42, which includes membership of the Sports Union with its various branches and allied clubs—football, cricket, tennis, hockey, boxing, swimming, fencing, sailing, and Guthrie Society. The Sports ground is within 20 minutes of the Hospital.

The Dean or Sub-Dean will be pleased to arrange for intending students and parents to inspect the Hospital and Medical School at any time. Only Male Students are admitted.

A Prospectus and full particulars may be obtained on application to the Dean:—

ADOLPHE ABRAHAMS, O.B.E., M.A., M.D., F.R.C.P.,
Westminster Hospital Medical School, Caxton Street, Westminster, S.W.1
Telephone: Whitehall 3665.

Charing Cross Hospital Medical School

(University of London)

Sessions begin October and April.

Complete arrangements for Subjects of the whole Medical Curriculum, with special departments for every branch of Clinical work.

"FIRMS."—Only thirty students are admitted each year. Every medical clerk and surgical dresser is therefore assured of having not less than six beds in his personal care.

THE INSTITUTE OF PATHOLOGY, with the abundance and variety of its material and fully equipped laboratories, offers exceptional advantages in this subject.

THE STUDENTS' UNION includes Common Rooms and Restaurant on the School premises, and a Sports Ground of 8 acres within half an hour's journey of the School.

RESIDENT APPOINTMENTS.—The large number of Resident Appointments (27 annually) in proportion to the number of students make it probable that all students of average ability will be able to secure election to the House Staff.

SCHOLARSHIPS. — The following are awarded annually:—(I) Three "University" Scholarships, each of the value of £120. Examinations are held in July; Subjects (a) General Pathology; (b) Anatomy and Physiology. (II) One "Open" Scholarship of the value of £75, and (III) two "Entrance" Scholarships of £50 each. In addition numerous Exhibitions and Prizes are awarded each year.

Men Students only are admitted.

Fees 38 Guineas per annum.

For Prospectus and full information apply personally or by letter to the Dean:—

ERIC A. CROOK, M.A., M.Ch., F.R.C.S.,
Charing Cross Hospital Medical School, 62, Chandos Place, London, W.C.2.

Telephone: Temple Bar 3903 and 3904

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON).

Dean: JOHN A. DRAKE, M.D. (Lond.), F.R.C.P., D.P.H.

THE NEW MEDICAL SCHOOL (opened in July, 1933) contains Lecture Rooms, Lecture Hall, Museum, Research Rooms and Laboratories, Bio-Chemical Research Laboratory, Common Rooms, and Refectory. Two new Squash Rackets Courts adjoin the School.

FOURTEEN ENTRANCE SCHOLARSHIPS, total value £1,530, are awarded annually.

RESIDENT HOSPITAL APPOINTMENTS, numbering thirty-one, are made during each year.

ATHLETIC GROUND. The Athletic Ground of the Medical School is within ten minutes' walk of the Hospital, and has accommodation for cricket, football, hockey, and lawn tennis.

SCHOOL HOSTEL. "The Platanes," standing in large grounds, with three lawn tennis courts, provides residence for 80 students, and is within five minutes' walk of the Hospital.

The Dental School was opened in October, 1923. A full Course is given in co-operation with King's College in preparation for Dental Degrees and Diplomas.

For Particulars, Calendar of the School, and Appointments to see the School and Hospital, application should be made to the Secretary, S. C. RANNER, M.A.Cantab., King's College Hospital Medical School, Denmark Hill, London, S.E. 5.

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON)

THE WINTER SESSION BEGINS ON OCTOBER 4th.

The entire Medical Curriculum can be taken at this School. Annual value of Scholarships and Prizes £1,000. Large Research Funds.

ENTIRE CURRICULUM.—THE PROVISION WHEREBY ALL THE SUBJECTS OF THE CURRICULUM, INCLUDING CHEMISTRY, PHYSICS AND BIOLOGY, FOR THE PRE-MEDICAL EXAMINATION, ARE TAUGHT WITHIN THE PRECINCTS of the HOSPITAL and MEDICAL SCHOOL, and every effort made to encourage co-ordination, ensures that the student, instead of proceeding to the study of the various subjects as if they were isolated and having little or no relation to each other, is taught each subject by professors and lecturers who are instructing medical students only, and are in close touch with all the other departments of the School. The rebuilding of the Hospital is complete and those working in the Institution have facilities equal to, or superior to, those to be found in any other hospital in the United Kingdom. The new buildings are not confined to the wards, but include a new Out-patients' Department, the Institute of Biochemistry, and new Departments for Diseases of Children, Neurology, Dermatology, etc. In addition, there is open a new Unit devoted to Clinical Research, and it contains six small self-contained wards and a large Clinical Lecture Theatre. The newly built quarters for the Resident Officers have been enlarged and afford greatly improved facilities. The following description of the work in various departments is designed to show how co-ordination is carried out.

CHEMISTRY is taught by Professor W. B. Tuck, and the class-room and laboratories are in the immediate vicinity of those for anatomy, physiology, pharmacology, pathology, and bacteriology. This leads to a close association with these departments, and the student realises he is not learning just the chemistry which he requires for his first professional examination, but is acquiring knowledge which he will need and have to apply in later years.

THE DEPARTMENT OF PHYSICS is under the charge of Professor Sidney Russ, who is also Physicist to the Hospital and engaged in research work involving the use of X-rays, Radium, Ultra-Violet Rays, and other forms of radiation. He is therefore in close touch with the departments of physiology and pathology, and takes an active part in departments for clinical therapeutics. Under his direction the student will realise at once that he is not studying an isolated subject for the purpose of training his mind or simply to comply with regulations and pass an examination, but is in touch with a subject which will be of great and increasing importance in the proper understanding of his work in later years.

BIOLOGY.—The Lecturer on Biology is Dr. J. H. Woodger, who holds a University Readership in this subject. His teaching in biology is characterized by co-ordination with other departments, and the bearing of the subject on the later stages of the curriculum is emphasized. Not only is the subject taught as an introduction to the study of Anatomy and Physiology, but the increasing importance of a knowledge of the lower forms of vegetable life and of the protozoa in the causation of disease and the study of insect carriers of human diseases is emphasized by co-ordination with the Pathological Institute.

IN THE DEPARTMENT OF ANATOMY, under the direction of Professor John Kirk, with the general scientific study of Anatomy and its wider Biological aspects, the relation of structure to function and pathology is not lost sight of. Facts of clinical medicine and surgery, of pathology, biology, and physiology, are included in the teaching in order to emphasize the significance of anatomical points. By classes in Applied Medical and Surgical Anatomy the study of this subject is continued in the later stages of the student's career.

THE TEACHING OF PHYSIOLOGY is in the hands of Professor Samson Wright, and the department is in close touch with those for the teaching of both the preliminary and final subjects of the curriculum. It is impressed upon the student in this department that he cannot be a good clinician unless he obtains a sound knowledge of Physiology, and physiological teaching is made to overlap the later periods of tuition by lectures on applied Physiology which are given by the Professor to students during their Clinical Period. Again, while in the wards the student has continuous opportunities of applying what he has learnt in the Physiological department, and his physiological knowledge is further extended, notably in the study of PHARMACOLOGY and in the CARDIOGRAPHIC Department, where he has opportunities of studying the electrical conditions of the heart both in health and disease.

IN THE BLAND-SUTTON INSTITUTE OF PATHOLOGY all the departments of the Medical School are brought in touch. Here the student learns the SCIENCE OF DISEASE. The teaching of Pathology is in the hands of Professor J. McIntosh, and under his tuition the student is made to realise that Pathology and Medicine are one and that a clear knowledge of Pathology and Bacteriology is essential for the prevention, diagnosis, and treatment of disease. The teaching of Pathology is brought into the closest touch with clinical teaching, and the student sees the practical application of the sciences in which he has been instructed in the earlier years of the curriculum.

THE COURTAULD INSTITUTE OF BIOCHEMISTRY is a building fully equipped with laboratories for teaching and biochemical research. Professor E. C. Dodds, who is in charge of the Department, holds complete courses in Biochemistry for students, both in their early years and during their period of instruction in the wards. In addition to this the student here acquires constant practical experience of the important modern chemical investigations necessary for the detection of disease and the study of its evolution. Several valuable post-graduate appointments in this Institute become available to students showing special ability in this direction.

CLINICAL TEACHING is carried out in the general wards and out-patients' departments, and in the special departments, all of which are in close touch with the scientific departments in the School. The student has ample opportunities for carrying out the physical examination of patients, and with his training on the scientific side combines instruction in the Art of Medicine by constantly being brought in contact with patients and being made to realise the human side of his professional work.

There are ample clinical appointments for all students, and 34 Resident appointments are open annually to students of the School who have obtained their degrees or diplomas. In addition, 12 Registrars are appointed annually.

RESIDENTIAL COLLEGE. Accommodation for a limited number of students is provided in the Hospital.

THE SOCIAL AND ATHLETIC side of the student's life is also studied, and these facilities include a Medical Society, a Common Room Society, and Athletic grounds. The Clubs include Rugby Football, Association Football, Golf, Cricket, Hockey, Sailing, Swimming, etc. A Squash Racket Court is also available.

A Prospectus may be obtained from the Secretary, R. A. FOLEY, F.C.C.S., The Medical School, Middlesex Hospital, London, W.1.

H. E. A. BOLDERO, M.A., D.M., F.R.C.P., DEAN.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE

(UNIVERSITY OF LONDON)

WINTER SESSION BEGINS OCTOBER 1st, 1937.

THE HOSPITAL has **762 Beds** and the **MEDICAL COLLEGE** contains large Lecture Rooms and Laboratories, as well as a Museum and a Library.

Every Special Branch of Medicine and Surgery has a Department.

ENTRANCE SCHOLARSHIPS.

Eight Entrance Scholarships and Exhibitions are awarded annually of the aggregate **value** of **£900.**

Other Scholarships and Prizes amount to about **£1,000** annually.

PRELIMINARY SCIENCES.

Chemistry, Physics, and Biology are fully taught in the **Laboratories** allotted to these subjects.

All the pre-clinical Departments have now been transferred to the new site in Charterhouse Square, formerly occupied by the Merchant Taylors' School.

HOSPITAL APPOINTMENTS.

Over 100 Hospital Appointments (39 resident) are available each year for Students who have passed their final qualifying examination.

Five hundred and sixty Ward Clerkships and Dresserships are open annually to Students before qualification.

STUDENTS' UNION.

The Union possesses a Club Ground of seventeen acres at Chislehurst, and athletic amenities are available on the newly-purchased site in Charterhouse Square, five minutes' walk from the Hospital.

HIGHER EXAMINATIONS.

Special Classes are held for **F.R.C.S.,** etc.

For further particulars apply, personally or by letter to

THE DEAN OF THE MEDICAL COLLEGE, ST. BARTHOLOMEW'S HOSPITAL, LONDON, E.C.1.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON)

HYDE PARK CORNER, S.W.

THE HOSPITAL and MEDICAL SCHOOL occupy the finest site in London and are readily accessible from all parts of the Metropolis.

The entire teaching in the School is devoted to the subjects of the Final Examinations; in other words, **is specially adapted to the interests of men from the Universities who have passed their Examination in Anatomy and Physiology**

St. George's Students attend at King's College for tuition in the Preliminary and Intermediate subjects.

SEVEN ENTRANCE SCHOLARSHIPS IN ANATOMY AND PHYSIOLOGY, AND GENERAL PATHOLOGY, of the value of £120, £80 (3), £60 (2) and £50 respectively, are offered for competition in July to candidates who have passed the 2nd M.B. or corresponding examination. In addition, EXHIBITIONS, each of the value of £40 and up to *Four in* number, will be awarded to candidates of approved merit in the Entrance Scholarship Examination.

MANY VALUABLE PRIZES ARE AWARDED EACH YEAR, including the following: Allingham Scholarship of the value of £87, Laking-Dakin Memorial Prize of the value of £115, the *Brackenbury Prize in Medicine*, the *Brackenbury Prize in* Surgery, and the Webb Prize in Bacteriology each of the value of £33

RESIDENT HOUSE APPOINTMENTS. Eight Casualty Officers, ten House Surgeons, and eight House Physicians are appointed annually. They are provided with board and lodging in the Hospital and receive honoraria of £40 per annum. In addition, the following resident appointments are open to all qualified students of the Hospital: Resident Obstetric Assistant (two annually) and Resident Anaesthetist (two annually). They are provided with board and lodging and receive salaries of *£100 per annum. There are also five further senior appointments*, namely, one Resident Assistant Physician with a salary of £250 per annum, *two Surgical Chief Assistants, also resident*, with salaries of £200 per annum, and two Medical Registrars non-resident, with salaries of £100 per annum.

The ST. GEORGE'S HOSPITAL CLUB incorporates the RUGBY FOOTBALL, CRICKET, LAWN TENNIS, BOXING, *RIFLE* and other Clubs, and possesses an *ATHLETIC GROUND* within easy reach of the Hospital, and Smoking and Luncheon *Rooms on the School Premises.*

Entrance Fee, £10 10s. 0d. Annual Composition Fee, which covers all courses, lectures, etc., in the Hospital and School, £42. Annual Club Subscription, £3 13s. 6d.

The Winter Session will begin on October 1st, but students can enter at any time.

Further information may be obtained from the Dean of the *Medical School.*

M. F. NICHOLLS, M.Chir., F.R.C.S.
Dean

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL

540 Beds. *540 Beds.*

(UNIVERSITY OF LONDON),

UNIVERSITY STREET, GOWER STREET, W.C.1.

TELEPHONE—EUSTON 5056 (7 lines).

The WINTER SESSION will commence on Tuesday, October 5th, 1937.

THE SCHOOL IS FOR FINAL STUDIES only

STUDENTS are prepared for the degrees of the Universities of: OXFORD, CAMBRIDGE, LONDON, and DURHAM, and for the Diplomas of other qualifying Bodies.

CLINICAL UNITS in MEDICINE, SURGERY, and OBSTETRIC MEDICINE are now in operation. The whole-time Directors of the Units are concerned with the organisation of the teaching generally, but the honorary staff are responsible for the largest share of the teaching in the wards and out-patient Department of the Hospital. The new Obstetric Hospital is now finished and in full occupation.

Director of the Medical Unit—Prof. T. R. ELLIOTT. Director of the Surgical Unit—Mr. WILFRED TROTTER

Director of the Obstetric Unit—Prof. F. J. BROWNE.

FEES—Inclusive fee to cover complete Clinical Course £45 per annum for three years. Oxford and Cambridge students who have completed their course in Pathology: £40 per annum for three years. There are no extras, as these fees include (i) Courses of Instruction in Pharmacy, Vaccination, and Fevers; (ii) Life Subscription to the Medical Society or Women's Medical Club.

APPOINTMENTS—Forty-seven appointments are open during the year to students, in addition, salaried appointments to the annual value of over £2,000.

SCHOLARSHIPS, EXHIBITIONS, and PRIZES of the value of over £1,000 are awarded annually. Amongst the most important are

I. GOLDSMID ENTRANCE SCHOLARSHIPS entitling the holder to the Final Course of Medical Study, are offered for competition annually in July, and are open to students who are preparing for the Degrees of the Universities of London, Oxford, Cambridge, Durham, or other British Universities, or for the Diplomas of the Royal Colleges of Physicians and Surgeons.

II. GOLDSMID ENTRANCE EXHIBITION (value £80), entitling the holder to a reduction by £80 of the fees due for the Full Course of Final Medical Study.

III. FILLITER ENTRANCE SCHOLARSHIP IN PATHOLOGY (value £52 10s.) entitling the holder to a reduction by £52 10s. of the fees due for the Full Course of Final Medical Study.

FERRIERE SCHOLARSHIP, value £25 awarded annually in April or October.

GRAHAM SCHOLARSHIP, in Pathology, £300 per annum

LESLIE PEARCE GOULD SCHOLARSHIP, awarded every two years, about £260.

RADCLIFFE CROCKER TRAVELLING SCHOLARSHIP in Dermatology awarded every five years, about £280.

MAGRATH SCHOLARSHIP in Clinical Medicine, about £160.

ATCHISON SCHOLARSHIP, about £55 per annum; tenable for two years.

PERCIVAL ALLEYN SCHOLARSHIP, about £300, awarded every three years.

ATKINSON MORLEY SCHOLARSHIP, £45 per annum; tenable for three years.

BILTON POLLARD FELLOWSHIP, of the annual value of £650; tenable for a normal maximum of three years.

ARTHUR POLLARD LOAN FUND, of the approximate annual value of £55

BUCKNILL SCHOLARSHIP entitles the holder to the Intermediate Medical Course at University College, and for the Final Course at the Medical School.

Further information and Prospectus can be obtained from the Secretary, and the Dean can be interviewed at any time by appointment.

Dean—GWYNNE WILLIAMS, M.S., F.R.C.S *Vice-Dean*—W. J. PEARSON, D.S.O., M.C., M.D., F.R.C.P.

Sub-Dean for Dental Students—J. L. DUDLEY BUXTON, L.M.S.S.A., L.D.S., R.C.S.Eng. *Secretary*—R. V. JENKINS.

UNIVERSITY COLLEGE HOSPITAL DENTAL SCHOOL

NATIONAL DENTAL HOSPITAL, GREAT PORTLAND ST., W.1.

LECTURERS.

Dental Surgery and Pathology.—J. L. DUDLEY BUXTON, L.M.S.S.A., L.D.S.R.C.S.
Mondays and Wednesdays at 5 p.m. October to March.

Special Anatomy. — ALAN SHEFFORD, O.B.E., L.D.S.R.C.S.
Tuesdays at 5 p.m. October to March.

Orthodontics.—A. C. McLEOD, D.D.S., B.Sc.(Dent.), L.D.S.
Tuesdays at 5 p.m. May to July.

Dental Mechanics.—J. A. SNAREY WRIGHT, L.D.S.R.C.S.
Wednesdays at 5 p.m. January to March.

Dental Materia Medica.—H. DAVIS, B.Sc., A.I.C., Ph.C.
Tuesday and Fridays at 2 p.m. May to July.

Bacteriology of the Mouth.—Sir KENNETH GOADBY, K.B.E., D.P.H., L.R.C.P., M.R.C.S., L.D.S.R.C.S.
Wednesdays at 2 p.m. January to March.

General Pathology.—Vacant.
Thursdays and Fridays at 4 p.m. January to July.

Bacteriology.—Vacant.
Tuesdays at 2 p.m. January to July.

Dental Histology.—A. K. INCE-JONES, L.R.C.P., M.R.C.S., L.D.S.R.C.S.
Saturdays at 9.30 a.m. January to March.

Dental Metallurgy.—H. TERREY, B.Sc.
Tuesdays at 5 p.m. at University College. October to December.

Anaesthetics.—M. W. P. HUDSON, M.B., B.S., D.A.
Tuesdays at 5 p.m. October to December.

Radiology.—D. A. IMRIE, M.D.Laus., L.R.C.P.E., L.R.C.S.E., D.M.R.E., L.D.S.
Wednesdays at 12 noon. July.

Special Medicine Lectures.—J. C. HAWKSLEY, M.D., M.R.C.P.
Thursdays at 5 p.m. January to July.

Special Surgery Lectures.—A. J. GARDHAM, M.S., F.R.C.S.
Wednesdays at 4 p.m. January to July.

THE WINTER SESSION COMMENCES TUESDAY, OCTOBER 5th, 1937.

This Hospital and School, situated in the centre of a large population, and within a few minutes of University College Hospital, has recently been reorganised and equipped on the highest standard of modern requirements, and admirably adapted for the teaching of students in every branch of the Science and Art of Dental Surgery. The mechanical laboratory, conservation room, and X-rays departments are replete with all the latest approved appliances.

Students (men and women) enter as students of University College Hospital, and attend classes in anatomy and physiology at University College, adjacent to University College Hospital.

Each student serves as a dresser in the extraction, anaesthetic, conservation, and X-rays departments, which provides him with the opportunity of observing and actually carrying out the methods of work in all branches.

Four House Surgeons are appointed half-yearly.

The Calendar, containing full information as to lectures, fees, prizes, etc., may be had on application to the Sub-Dean of Dental Students, who attends the University College Hospital Medical School, University Street, Gower Street, W.C.1, on Wednesdays, at 9.30 a.m.

LONDON HOSPITAL MEDICAL COLLEGE & DENTAL SCHOOL

THE WINTER SESSION will Open on Friday, October 1st.

The LONDON HOSPITAL serves the East End of London, and with eight hundred and fifty beds is the largest voluntary Hospital in England The Out-patient Department, which deals with a hundred thousand new patients per annum, is extensively used for teaching.

The size of the Hospital necessitates a large number of resident medical officers Every year seventy resident house physicians and house surgeons and eighty salaried non-resident clinical assistants are appointed from among recently qualified students The opportunities which these appointments offer for obtaining clinical experience is invaluable

The MEDICAL COLLEGE is attached to the Hospital and is staffed by Professors of Anatomy, Physiology, Bacteriology, Chemical Pathology, Morbid Anatomy and Medicine of the University of London.

SPECIAL COURSES in Anatomy and Physiology for the Primary F.R.C.S. and Advanced Courses in Surgery for the Final F.R.C.S. Examination, and in Medicine for the M.D and M.R.C.P Examinations, are held twice a year

ENTRANCE SCHOLARSHIPS AND PRIZES of the total value of £950 are awarded annually Research Funds to the value of £113,000 permit of assistance being given to students and graduates engaged in medical research

The MEDICAL COLLEGE contains a modern Museum of Pathology and a Library provided with all the current medical periodicals in charge of a full-time librarian There is also an Athenaeum Club and Dining Hall, a Gymnasium, a Fives Court and two Squash Courts in the Students' Hostel. The Athletic Ground of 13 acres at Hale End is within easy distance of the Hospital.

The HOSPITAL is only 20 minutes from Charing Cross and Baker Street Stations For those who wish to live in immediate proximity to the Hospital there is accommodation for sixty students in the Students' Hostel

Further details may be obtained from the Dean, Dr. A. E. CLARK-KENNEDY, M.D., F.R.C.P., Physician to the Hospital and Fellow of Corpus Christi College Cambridge, who is always pleased to meet students wishing to see the Hospital and College, and to whom application for admission should be made, Turner Street London E.1

UNIVERSITY OF LONDON

OPHTHALMIC HOSPITAL MEDICAL SCHOOL

ROYAL LONDON OPHTHALMIC HOSPITAL

(Moorfields Eye Hospital), CITY ROAD, E.C.1.

Qualified Medical Practitioners and Registered Medical Students may enter on the Practice of the Royal London Ophthalmic Hospital (Moorfields) at any time, and are, on certain conditions, eligible for appointment as Chief Clinical Assistant, Clinical Assistant and Junior Assistant.

Courses of Instruction, extending over a period of five months, begin in OCTOBER and MARCH.

1. Practical Refraction Classes.
2. Methods of examination and use of the ophthalmoscope.
3. Lectures every afternoon on the following subjects: (*a*) Anatomy, including Embryology and Normal Histology; (*b*) Physiology; (*c*) Optics, including Physiological Optics; (*d*) Pathology and Bacteriology; (*e*) Ophthalmic Medicine and Surgery, consisting of: Medical Ophthalmology, External Diseases of the Eye, Motor Anomalies and Squint Diseases of the Retina and Optic Nerve, Diseases of the Uveal Tract.
4. Ophthalmoscopic Conditions: a practical class with demonstrations each week at 5 p.m.
5. Occasional Lectures on subjects allied to Ophthalmology.
6. Operative Surgery. In these classes the usual operations are performed by the student upon pigs' eyes.
7. Practical Pathology. A course of demonstrations on the normal and morbid histology of the eye is given by the pathologist in the laboratory.
8. Practical Bacteriology.
9. Classes in Radiography.
10. Physico-therapy (Ultra-violet Light, Diathermy, etc.)
11. Slit-lamp Microscopy.

FEES.—A composition fee of 35 guineas will admit Students once to all the lectures and classes (except the classes of Physico-Therapy, and Slit-lamp Microscopy, and the examination fee).

DIPLOMA IN OPHTHALMIC MEDICINE AND SURGERY AND OTHER DEGREES IN OPHTHALMOLOGY.

The above complete curriculum is specially designed to meet the requirements of candidates entering for these examinations.

Fees for the Practice of the Hospital:

Perpetual	£5 5 0	Two months	£2 2 0
Three to six months	£3 3 0	One month	£1 1 0

Clinica work begins at 9 a.m daily Operations are performed between 10 a.m. and 1 p.m.

For further particulars apply to the Secretary to the Medical School at the Royal London Ophthalmic Hospital, City Road, E.C.1; or to the Dean, Charles Goulden, O.B.E., M.D., M.Chir., F.R.C.S.

GOLDEN SQUARE, THROAT, NOSE AND EAR HOSPITAL

LONDON, W.1

HONORARY MEDICAL STAFF

SURGEONS: Mr. Lione. Colledge, Mr. F. Cunliffe Ormerod; Mr. A. R. Dingley; Mr. Gilbert H. Howells; Mr. J. F. Simpson; Mr. S. A. Beards; Mr. J. C. Hogg.
ASSISTANT SURGEONS: Mr. J Roydon Peacock; Mr. J. P Monkhouse; Mr. Maxwell Ellis; Mr. G. Livingstone
PHYSICIANS: Dr. C. E. Lakin; Dr. N. L. Rusby
NEUROLOGIST: Dr L. R. Yealland.
PATHOLOGIST: Dr. R. B. Hervey-Wyatt.
OPHTHALMOLOGIST: Mr. F. A. Williamson-Noble
GENERAL SURGEON: Mr. J. B. Hunter
DENTAL SURGEON: Mr. Hart.
RADIOLOGIST: Dr. Hope.
ANAESTHETISTS: Dr. G. I. Moriarty; Dr. A. W. Matthew, Dr. S. Coffin; Dr J. H. T. Challis; Dr. F. Longhurst; Dr. D. Lewis; Dr. C. Hochschild; Dr. G. Edwards; Dr Blair Gould, Dr. Broad.

The Hospital has 100 beds for In-patients and an annual Out-patient attendance of over 60,000

CLINICAL INSTRUCTION

Clinical instruction in the Diagnosis and Treatment of Diseases of the Ear, Nose, and Throat is given in the Out-patient Department from 2 to 5 p.m. daily, and on Tuesdays and Thursdays from 6 to 9 p.m. also. Major operations are performed every morning and afternoon except Saturdays, in the In-patient Operating Theatres Minor operations are performed in the Out-patient Operating Theatre on three mornings a week.

Practitioners and Medical Students are admitted to the practice of the Hospital as Post-Graduates. Clinical Assistants whose duty it is to assist the staff, are appointed as vacancies occur.

For further information apply to the Dean: *GILBERT H. HOWELLS.*

THE UNIVERSITY OF LIVERPOOL

FACULTY OF MEDICINE.

THE MEDICAL SCHOOL provides complete courses of instruction for the Examinations of the University of Liverpool, and also meets the requirements of other Universities and Examining Bodies in the United Kingdom.

Other Schools of the Faculty are:—The School of Dental Surgery, the School of Hygiene, the School of Tropical Medicine, and the School of Veterinary Science.

DEGREES AND DIPLOMAS IN THE FACULTY OF MEDICINE.

Bachelor of Medicine & Bachelor of Surgery	M.B., Ch.B.	Doctor of Veterinary Science	D.V.Sc.
Doctor of Medicine	M.D.	Doctorate in Philosophy	Ph.D.
Master of Surgery	Ch.M.	Licence in Dental Surgery	L.D.S.
Master of Orthopaedic Surgery	M.Ch.Orth.	Diploma in Public Health	D.P.H.
Bachelor of Dental Surgery	B.D.S.	Diploma in Tropical Medicine	D.T.M.
Master of Dental Surgery	M.D.S.	Diploma in Tropical Hygiene	D.T.H.
Bachelor of Veterinary Science	B.V.Sc.	Diploma in Veterinary Hygiene	D.V.H.
Master of Veterinary Science	M.V.Sc.	Diploma in Medical Radiology & Electrology	D.M.R.E.

Valuable Fellowships, Scholarships, and Prizes are offered for competition each year.

Clinical Instruction is given at (a) four General Hospitals, viz., The Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital, and the Stanley Hospital; (b) five Special Hospitals, viz., The Eye, Ear and Throat Infirmary, the Women's Hospital, Liverpool, the Royal Liverpool Children's Hospital, the Liverpool Maternity Hospital, and the St. Paul's Eye Hospital; (c) certain Municipal Hospitals, and the County Mental Hospital, Rainhill.

Prospectuses containing full information may be obtained on application to Professor W. H. Wood, Dean of the Faculty of Medicine, The University of Liverpool.

UNIVERSITY OF MANCHESTER

FACULTY OF MEDICINE

The WINTER SESSION Commences on OCTOBER 7th.

The Laboratories and Museums afford every facility to Students and Graduates for Practical Instruction, as well as for Original Research.

SCOPE OF INSTRUCTION.

Complete Courses of Instruction are offered for the Examinations of the University of Manchester, and also for the Examinations of other Examining Bodies in the United Kingdom. Post-Graduate Courses are held in preparation for the Diploma in Psychological Medicine (Manch.), and the Certificate in Venereal Diseases; Clinical Assistantships are also available at various hospitals. In the Dental Department Complete Courses are given preparing for the Degrees and Diploma in Dentistry granted by the University, as well as for the Diploma of the Royal College of Surgeons of England, and other Dental Diplomas. The Public Health Laboratories are situated at a short distance from the University. The fullest opportunities are offered to Graduates and others in preparation for the Diplomas in Bacteriology, in Public Health and in Veterinary State Medicine. Particulars may be obtained from the Dean of the Medical School.

OPPORTUNITIES FOR CLINICAL STUDY.—ROYAL INFIRMARY AND OTHER HOSPITALS.

The Clinical Instruction is given in the Royal Infirmary, opened in 1909 on a site near to the Medical School. It is provided with every modern requirement for the treatment of the sick and the investigation of disease. Instruction in Special Subjects is given in other Hospitals associated with the University. A large number of beds in the General and in the Special Hospitals are available, thus affording unrivalled opportunities for Clinical Study.

1. Manchester Royal Infirmary	586 beds	8. Hospital for Diseases of the Throat and Chest	160 beds
2. The St. Mary's Hospitals for Women and Children	290 beds	9. Hospital for Diseases of the Skin	54 beds
3. Manchester Children's Hospital	190 beds	10. Christie Cancer Hospital and Holt Radium Institute	104 beds
4. Manchester Royal Eye Hospital	166 beds	11. Ancoats Hospital	150 beds
5. Manchester Northern Hospital for Women & Children	113 beds	12. Salford Royal Hospital	263 beds
6. Fever Hospital for Infectious Diseases	600 beds	13. Dental Hospital of Manchester.	
7. Hospital for Diseases of the Ear	31 beds	14. Manchester Babies' Hospital.	

HOSPITAL APPOINTMENTS.

In consequence of the large number of Hospitals associated with, or in the vicinity of, the University, exceptional opportunities are offered to Graduates to obtain Resident Hospital Appointments.

SCHOLARSHIPS, EXHIBITIONS AND PRIZES.

Two Open Entrance Scholarships for Graduates, each of the value of 160 guineas, are offered yearly in July. In addition, the Dreschfeld Scholarship of £20 per annum, the John Russell Medical Entrance Scholarship of £45 per annum, and other Entrance Scholarships of the value of £30 to £40 a year for two or three years, are also tenable in the Medical Faculty. Fellowships, Scholarships, etc., are also offered for competition to Students of the Faculty.

RESIDENCE FOR UNDERGRADUATES.

There are Halls of Residence both for Men and for Women Students, and lodgings can be recommended. Prospectuses will be forwarded on application to the Registrar.

UNIVERSITY OF BRISTOL

FACULTY OF MEDICINE.

The SESSION commences on October 1st, 1937.

The University grants the degrees of Bachelor of Medicine and Surgery (M.B., Ch.B.), Master of Surgery (Ch.M.), Doctor of Medicine (M.D.), Bachelor of Dental Surgery (B.D.S.), and Master of Dental Surgery (M.D.S.), as well as diplomas in Public Health (D.P.H.) (at present in abeyance), and Dental Surgery (L.D.S.), and a Midwife Teacher's Certificate, and provides a Training Course for Health Visitors.

Hospital Practice and Clinical Instruction are provided in the Hospitals and Asylum of the City, associated with the University for this purpose, and students have exceptional opportunities of studying the practice of medicine from a large variety of cases.

Women are admitted to all Classes, Lectures, and Laboratory Practice, and attend them with men. The Halls of Residence for Men and for Women Students are situated near the University.

INCLUSIVE FEES—

For the M.B., Ch.B. curriculum	...	205 guineas
For the B.D.S. curriculum	... ...	215 ,,
For the L.D.S. curriculum	... ...	200 ,,

For additional particulars apply to the DEAN OF THE FACULTY OF MEDICINE.

UNIVERSITY OF DURHAM

THE MEDICAL SCHOOL,

KING'S COLLEGE, NEWCASTLE UPON TYNE

(formerly the University of Durham College of Medicine).

The degrees in Medicine, Surgery, Hygiene, and Dentistry, the Diploma in Public Health, the Diploma in Psychiatry, and the Licence in Dental Surgery of the University of Durham are open to men and women.

The WINTER SESSION, 1937-8, will be commenced on TUESDAY, OCTOBER 5th.

At the Medical School, King's College, Newcastle upon Tyne, students can complete the entire course of professional study required for the above degrees, diplomas, and licence; also for the Examinations of the Royal Colleges of Physicians and Surgeons and other Examining Bodies.

Hospital practice is carried out at the Royal Victoria Infirmary, a general hospital containing more than 700 beds, and there are facilities for the study of the various special subjects General and Special Post-graduate Courses are held.

Practical Midwifery can be studied at the Princess Mary Maternity Hospital, which contains 90 beds, with an annual indoor and outdoor attendance on 3,000 cases. Lectures are given on Psychological Medicine in the Medical School, and clinical instruction at the Mental Hospital, Newcastle. Clinical instruction in Infectious Diseases is given by the Medical Officer of Health in the City Hospital at Walkergate.

The Dental Department includes a dental hospital equipped on the most modern lines, with abundant material for clinical teaching and facilities for training in practical dental mechanics.

Particulars may be obtained from the DEAN, Medical School, Northumberland Road, Newcastle upon Tyne.

THE UNIVERSITY OF SHEFFIELD

Vice-Chancellor: A. W. PICKARD-CAMBRIDGE, D.Litt., LL.D., F.B.A.

FACULTY OF MEDICINE.

Dean: Professor G. A. CLARK, M.D.

The University grants Degrees in Medicine (M.B., Ch.B., M.D., Ch.M.), and in Dental Surgery (B.D.S., M.D.S.). It also grants a Diploma in Dental Surgery (L.D.S.). These are all open to men and women on equal terms.

The session 1937-38 begins on October 6th.

Lectures and laboratory courses are given in the University, whilst clinical instruction is provided in the general and special Hospitals in the City.

Although the teaching is primarily directed towards the requirements of the University the instruction amply covers those of other examining bodies. A number of resident hospital appointments are open to qualified male students of the school.

Halls of Residence.—For Men: Crewe Hall, Clarkehouse Road, Sheffield, 10; Stephenson Hall, Taptonville Road, Sheffield, 10.

For Women: University Hall for Women, Endcliffe Vale Road, Sheffield, 10.

Particulars of the Halls may be obtained from the Wardens.

Scholarships.—A number of Entrance Scholarships are open to students wishing to enter the Faculty of Medicine. There are also post-graduate scholarships.

A prospectus containing all necessary details of the School, and one giving particulars of scholarships, may be obtained free from—W. M. GIBBONS, Registrar.

THE UNIVERSITY OF LEEDS

SCHOOL OF DENTISTRY

The First Term begins on **October 4th, 1937.**

The degrees of B.Ch.D. and M.Ch.D., as well as a diploma, L.D.S., are conferred by the University.

The systematic Classes and Lectures are held in the School of Medicine and School of Dentistry of the University, while the clinical instruction is given in the Leeds General Infirmary and Dental School Hospital. The combined courses of study are arranged to meet the University Regulations in the first instance, but they also afford every opportunity for study to students preparing for the dental examinations of other Licensing Bodies.

Intending students can enter as pupils in the Dental School and can obtain instruction in the preliminary scientific subjects in the Department of Science of the University.

For further particulars application should be made to:—

The Warden, School of Dentistry, Leeds, 1.

THE UNIVERSITY OF LEEDS

FACULTY OF MEDICINE

SCHOOL of MEDICINE and THE GENERAL INFIRMARY at LEEDS

The First Term begins on **October 4th, 1937.**

The degrees of M.B., Ch.B., Ch.M. and M.D. are conferred, and diplomas in Public Health and Psychological Medicine are granted by the University.

The systematic Classes and Lectures are held in the School of Medicine of the University, while the Clinical instruction is given in the General Infirmary. The combined courses of study are arranged to meet the University Regulations in the first instance, but they also afford every opportunity for students preparing for the examinations of any licensing body.

The instruction in the subjects for the First Examination is given in the Department of Science of the University.

The Composition Fee for the Academic Courses and Clinical instruction is £242.

For further particulars application should be made:—

Regarding instruction given at the University to **The Academic Sub-Dean,** School of Medicine, Leeds, 2.

Regarding instruction given at the Infirmary to **The Clinical Sub-Dean,** School of Medicine, Leeds, 2.

BIRMINGHAM SCHOOL OF DENTISTRY.

UNIVERSITY of BIRMINGHAM and BIRMINGHAM DENTAL HOSPITAL.

DEAN OF THE FACULTY OF MEDICINE: STANLEY BARNES, M.D., D.Sc., F.R.C.P.
DEAN OF THE DENTAL HOSPITAL: C. H. HOWKINS, C.B.E., D.S.O., M.R.C.S., L.R.C.P., L.D.S.
PROFESSOR OF DENTAL SURGERY: H. F. HUMPHREYS, K.H.P., O.B.E., M.C., T.D., D.L., M.B., Ch.B., M.D.S., L.D.S.

The Session will commence on MONDAY, OCTOBER 4th, 1937.

DEGREES AND DIPLOMA IN DENTAL SURGERY.

The Degrees of Bachelor of Dental Surgery (B.D.S.) and Master of Dental Surgery (M.D.S.) and the Diploma in Dental Surgery (L.D.S.) are open to Students who follow the requisite courses in the University.

The School of Dentistry, in conjunction with the General and Queen's Hospitals, affords a complete curriculum for the Dental Diplomas and Dental Degrees of the University and all other Licensing Bodies.

The Dental Hospital is fully equipped for the training of students in Mechanical, Prosthetic, and Operative Dentistry.

A DENTAL SCHOLARSHIP of the value of £46 17s. 6d. is offered annually by the University. For syllabus and further information, application should be made to the Dean of the Faculty of Medicine, the University, or to the Dean of the Dental Hospital, Great Charles Street, Birmingham.

UNIVERSITY OF BIRMINGHAM. FACULTY OF MEDICINE.

(Associated with the General, Queen's and Special Hospitals for Clinical Teaching.)

THE NEXT SESSION OPENS ON OCTOBER 4th, 1937.

The University grants Degrees in Medicine, Surgery and State Medicine, and a Diploma in Public Health: also Degrees and a Diploma in Dental Surgery

The Courses of instruction are also adapted to meet the requirements of other Universities and Licensing Bodies.

HOSPITAL APPOINTMENTS.

A large number of Resident Hospital appointments in Birmingham and District are open to qualified students of the School.

SCHOLARSHIPS, EXHIBITIONS AND PRIZES.

Entrance and other Scholarships and Exhibitions and various Prizes and Medals are awarded annually in the Faculty of Medicine, full details of which are in the Faculty syllabus.

SCHOOL OF DENTISTRY.

(University of Birmingham and Birmingham Dental Hospital).

The School of Dentistry, in conjunction with the General and Queen's Hospitals, affords a complete curriculum for the Dental Diplomas and Dental Degrees of the University and all other Licensing Bodies. A Dental Scholarship of the value of £46 17 6, tenable for one year, is offered annually.

PRE-REGISTRATION MEDICAL AND DENTAL EXAMINATIONS.

The necessary courses of Instruction in Chemistry, Physics and Biology may be attended in the University

For syllabus and further information apply to the Registrar

STANLEY BARNES, M.D., D.Sc., F.R.C.P., Dean of the Faculty of Medicine

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

(INCORPORATED 1505).

Copies of Regulations for the Fellowship, Licence, Higher Dental Diploma, and Licence in Dental Surgery, containing Dates of Examinations, may be had on application to DAVID THOMSON, Clerk of the College, Surgeon's Hall, 18, Nicolson Street, Edinburgh.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

The EXAMINATIONS for the LICENCE of the College (as a single qualification) for the ensuing year will be held on the *First Wednesday* and the following days of every month (except September and October).

Candidates for the LICENCE (as a single qualification) must send their names to the Secretary one week before the date of the Examination at which they propose to appear.

The EXAMINATIONS for the MEMBERSHIP of the College are held on the *Second Tuesday* and the following days of *January, April, July,* and *October*.

Candidates for the MEMBERSHIP must submit their applications and testimonials to the Secretary one month before the date at which they wish to appear for Examination.

For the Regulations in regard to the various qualifications granted by the College, and all other information, application may be made to the Secretary.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.
ROYAL COLLEGE OF SURGEONS OF EDINBURGH.
ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

COPIES OF REGULATIONS for the TRIPLE QUALIFICATION (L.R.C.P.E., L.R.C.S.E., and L.R.F.P. and S.G.) and the DIPLOMA IN PUBLIC HEALTH, containing Dates of Professional Examinations for the year 1937-38, Curriculum, &c., may be had on application to THE REGISTRAR, Surgeons' Hall, 18, Nicolson Street, Edinburgh; or to THE REGISTRAR 242, St. Vincent Street, Glasgow

ROYAL (DICK) VETERINARY COLLEGE EDINBURGH

Principal — O. CHARNOCK BRADLEY, M.D., D.Sc., F.R.C.V.S.

115th SESSION COMMENCES OCTOBER.

COURSES OF INSTRUCTION QUALIFY FOR M.R.C.V.S. and B.Sc.(Edin.).

COLLEGE CALENDAR, with full particulars of EXAMINATIONS, BURSARIES, &c., may be obtained from A. C. DOULL, C.A. Secretary.

THE INCORPORATED EDINBURGH DENTAL HOSPITAL AND SCHOOL

The Incorporated Edinburgh Dental Hospital and School, at 30, 31, and 32, Chambers Street, offers special advantages to Dental Students.

The General Courses required for the Dental Diploma are taken in the School of Medicine of the Royal Colleges.

General Hospital Practice and Clinical Instruction in Medicine and Surgery are taken at the Royal Infirmary.

The School of Medicine and the Royal Infirmary are within three minutes' walk of the Dental Hospital.

Dental Hospital Practice, extending over two calendar years, affords the student ample opportunity for a full acquaintance with every branch of dentistry.

Fee for two years' Dental Hospital Practice £26 5s., and Hospital Outfit of Instruments £27 10s.

Women students are welcomed.

The Practice and Lectures of the Hospital are recognized by and qualify for, all the Licensing Boards.

The minimum cost of Professional Education, and the Licence in Dental Surgery of the Royal College of Surgeons of Edinburgh, amounts to approximately £160.*

Students who desire to take a Medical qualification, in addition to the Diploma in Dental Surgery, have admirable facilities for so doing. The Triple Qualification of the Royal Colleges of Physicians and Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow (L.R.C.P. & S.), is recommended. The combined courses are arranged concurrently and should be completed in a minimum time of 5½ years. The minimum cost of Professional Education, Triple Qualification, and Licence in Dental Surgery amounts to approximately £260.*

* Exclusive of premium for Mechanical Instruction (£63) and cost of Hospital Outfit of Instruments.

DEAN—A. C. W. HUTCHINSON, D.D.S., M.D.S., L.D.S., F.R.S.E.

F.R.C.S. (Edin.).

POSTAL and ORAL COURSES.

Full details of above and Private Tuition — H. C. ORPIN, F.R.C.S., Surgeon's Hall, Edinburgh

UNIVERSITY OF ABERDEEN

SESSION, 1937-1938.

FACULTY OF MEDICINE.

The WINTER SESSION commences on TUESDAY, OCTOBER 5th, 1937, and closes on FRIDAY, MARCH 18th, 1938.
The SUMMER SESSION commences on TUESDAY, APRIL 19th, 1938, and closes on FRIDAY, JUNE 24th, 1938.
The Preliminary Examinations will commence on THURSDAY, SEPTEMBER 2nd, 1937, and MONDAY, MARCH 21st, 1938.
The Faculty of Medicine embraces Twelve Chairs, besides various Lectureships, and instruction is given in all departments of Medical Science:—

PROFESSORS.

Biology.—James R. Matthews, M.A., F.L.S., F.R.S.E., and L. Hogben, M.A., D.Sc., F.R.S.
Physics.—John A. Carroll, M.A., Ph.D.
Chemistry.—Alexander Findlay, M.A., D.Sc., Ph.D.
Anatomy.—Alexander Low, M.A., M.D.
Physiology.—E. W. H. Cruickshank, M.D., D.Sc., Ph.D., M.R.C.P., F.R.S.E.
Materia Medica.—David Campbell, M.C., M.A., B.Sc., M.D., F.R.F.P.S.
Pathology.—John S. Young, M.C., M.A., B.Sc., M.D.
Bacteriology.—John Cruickshank, M.D.
Surgery.—James R. Learmonth, Ch.M., F.R.C.S.E.
Medicine.—Leybourne S. P. Davidson, B.A., M.D., M.R.C.P., F.R.C.P.E., F.R.S.E.
Midwifery.—D. Baird, B.Sc., M.D., D.P.H., F.C.O.G.

LECTURERS.

Embryology.—G. Leslie Purser, M.A.
Public Health.—Harry J. Rae, M.C., M.A., M.B., Ch.B., D.P.H.; Douglas Wales Berry, M.C., M.D., D.P.H.
Forensic Medicine.—Robert Richards, M.A., M.D., F.R.C.S.E.
Bio-Chemistry.—Edgar Beard, B.Sc.
Morbid Anatomy.—William M. Davidson, M.B., Ch.B.
Tropical Medicine.—Geo. Alex. Williamson, M.A., M.D., D.P.H., D.T.M.
Experimental Physiology.—William Burns, B.Sc., M.B., Ch.B.
Malignant Disease and Radium Officer.—W. G. Evans, M.B., B.S., M.R.C.S., L.R.C.P.
Medical Ethics.—George Williamson, M.A., M.B., C.M., F.R.C.P.E.

CLINICAL AND SPECIAL TEACHERS.

Royal Infirmary.

Clinical Medicine.—Professor Leybourne S. P. Davidson, B.A., M.D., M.R.C.P., F.R.C.P.E., F.R.S.E.; A. G. Anderson, M.A., M.D., F.R.C.P.; A. W. Hendry, O.B.E., M.D., M.R.C.P.
Clinical Surgery.—Professor J. R. Learmonth, Ch.M., F.R.C.S.E.; Fred. K. Smith, M.A., M.B., Ch.B.; W. Anderson, O.B.E., M.B., Ch.B., F.R.C.S.
Clinical Gynaecology.—D. Baird, B.Sc., M.D., D.P.H., F.C.O.G.
Clinical Midwifery.—George S. Davidson, M.A., M.B., Ch.B., F.R.C.S.E., M.C.O.G.
Ophthalmology.—W. Clark Souter, M.D., D.O.; Harold Edgar Smith, M.A., M.B., Ch.B.
Diseases of Ear, Nose, and Throat.—John H. Otty, M.A., M.B., Ch.B., F.R.C.S.E., D.L.O.
Diseases of the Skin.—Thomas E. Anderson, M.D.
Venereal Diseases.—Frederick J. T. Bowie, M.B., Ch.B., D.P.H.
Radiology and Electro-Therapeutics.—John E. Blewett, M.D., D.M.R.
Dental Surgery.—Hugh M. Crombie, M.B., Ch.B., L.D.S.
Anaesthetics.—J. Ross Mackenzie, M.D.
Clinical Chemistry.—Alexander Lyall, M.A., M.D., M.R.C.P.

Maternity Hospital.

Obstetrics and Antenatal Clinic.—D. Baird, B.Sc., M.D., D.P.H., F.C.O.G.
Maternity and Child Welfare.—James A. Stephen, M.A., M.B., Ch.B.

Ophthalmic Institution.

Ophthalmology.—A. R. Galloway, O.B.E., M.A., M.B., C.M.

Royal Mental Hospital.

Mental Diseases.—R. Dods Brown, M.D., F.R.C.P.E.

Dispensary.

Vaccination.—John Brown, M.B., Ch.B., D.P.H.

City Hospital.

Fevers.—Harry J. Rae, M.C., M.A., M.B., Ch.B., D.P.H.
Tuberculosis.—George S. Banks, M.B., Ch.B., D.P.H.

Royal Hospital for Sick Children.

Diseases of Children.—Alexander Mitchell, M.A., Ch.M.; Wm. Brown, O.B.E., M.B., Ch.B., F.R.C.P.
Anaesthetics.—J. Ross Mackenzie, M.D.

Health Service for Children of School Age.—Alexander F. MacBean, M.A., M.B., Ch.B., D.P.H.

Numerous Bursaries, Scholarships, Fellowships, and Prizes may be held by Students in this Faculty. The total cost of the curriculum for the Degrees of M.B. and Ch.B., including Class, Hospital, Matriculation, and Degree Fees, is approximately £240.

The Degrees in Medicine granted by the University are: Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.). The degree of Doctor of Philosophy (Ph.D.) is also granted in this Faculty. A Diploma in Public Health (D.P.H.) is granted after a special examination in Public Health to Graduates in Medicine of any University in the United Kingdom.

A Prospectus of the Classes, Fees, &c., may be had on application to the Secretary of the University and full details of the Courses, Degrees, Examinations, Bursaries, Prizes, Fellowships, &c., will be found in the Aberdeen University Calendar published by the Aberdeen University Press, Ltd.

The University also grants Degrees in Arts, Science (Pure, Agriculture, Forestry and Engineering), Law, Divinity, Education and Commerce, particulars of which may be had on application to—

H. J. BUTCHART, Secretary.

SCHOOL OF MEDICINE

OF

THE ROYAL COLLEGES, EDINBURGH

(Founded 1505)

WINTER SESSION, 1937-8. Opens on October 5th.

The Lectures qualify for the English and Scottish Universities and other Medical Examining Boards.

One-half of the Qualifying Classes required for graduation in the University of Edinburgh may be attended in this School.

Early application to the Dean for admission to the School is essential, by March 1st for Summer, and by August 1st for Winter Session.

Calendar, giving particulars of the Classes, Fees, Examinations, etc., sent (price 1s., post free) on application to THE DEAN OF THE SCHOOL, SURGEONS' HALL, EDINBURGH.

UNIVERSITY OF EDINBURGH

Principal—SIR THOMAS H. HOLLAND, K.C.S.I., K.C.I.E.

Prospective students are required to make application for admission on a prescribed form not later than 1st JULY of the year in which they wish to enter.

FACULTY OF MEDICINE.

Dean—Professor SYDNEY SMITH, M.D.

PROFESSORS.

Chemistry—George Barger, M.A., D.Sc., F.R.S
Zoology—J. Ritchie, M.A., D.Sc.
Botany—Sir Wm. Wright Smith, M.A., D. ès Sc.
Anatomy—J. C. Brash, *M.C.*, M.A., B.Sc., M.D
Physiology—I. de Burgh Daly, M.A., M.D.
Materia Medica—A. J. Clark, *M.C.*, M.D., F.R.S.
Pathology—A. Murray Drennan, M.D.
Bacteriology—T. J. Mackie, M.D.
Forensic Medicine—Sydney A. Smith, M.D.
Public Health—P. S. Lelean, C.B., C.M.G., F.R.C.S.
Medicine—W. T. Ritchie, O.B.E., M.D.
Surgery—Sir D. P. D. Wilkie, M.D., Ch.M.
Midwifery and Gynaecology—R. W. Johnstone, C.B.E., M.A., M.D
Clinical Surgery—Sir John Fraser, Ch.M., M.D.
Clinical Medicine—W. T. Ritchie, M.D., D. Murray Lyon, M.D., D.Sc., D. M. Dunlop, M.D.
Tuberculosis—Sir Robert W. Philip, M.A., M.D., LL.D
Therapeutics—D. M. Dunlop, M.D.
Psychiatry—D. K. Henderson, M.D.
Child Life and Health—Charles M'Neil, M.A., M.D.

LECTURERS.

Anatomy—E. B. Jamieson, M.D., R. Walmsley, M.D., R. L. Saunders, M.B
Applied Anatomy—F. E. Jardine, M.B.
Physiology—Philip Eggleton, D.Sc. Dr. Trowell, L. E. Bayliss, B.A., Ph.D., A. Ninian Bruce, M.D., D.Sc., J. D. S. Cameron, M.B
Materia Medica—C. M. Scott, M.B.
Pathology—W. G. Millar, M.B., R. F. Ogilvie, M.D
Pathology of Children—Agnes MacGregor, M.B
Bacteriology—C. P. Beattie, M.B., C. A. Green, M.B., C. G. Anderson B.Sc., Ph.D., C. E. Van Rooyen, M.D.
Physics—G. A. Carse, M.A., D.Sc., J. Paton, M.A., B.Sc.
Botany—J. L. S. Smith, M.A., A. Nelson, B.Sc., Ph.D., J. Anthony, M.A., B.Sc.
Chemistry—Edgar Stedman, B.Sc., Ph.D., C. P. Stewart, M.Sc., Ph.D Ellen Stedman, M.Sc
Zoology—C. H. O'Donoghue, D.Sc., R. A. R. Gresson, Ph.D., P. Gray, Ph.D. G. F. Friend, B.A., B.Sc., J. A. Kitching, Ph.D.
Tropical Diseases—Lt.-Col. E. D. W. Greig, C.I.E., M.D.
Entomology and Parasitology—A. E. Cameron, M.A., D.Sc., D. O. Morgan, Ph.D., J. W. McHardy, B.Sc.
Public Health—John Guy, M.D., J. du P. Langrishe, D.S.O., M.B
Medicine—J. G. McCrie, M.B.
Infectious Diseases—A. Joe, M.D
History of Medicine—J. D. Comrie, M.A., *B.Sc.*, M.D.
Neuropathology—J. H. Biggart, M.D.
Neurological Surgery—N. M. Dott, M.B.
Applied Physiology—W. C. Wilson, M.B.
Clinical Neurology—Edwin Bramwell, M.D.
Venereal Diseases—R. C. L. Batchelor, M.B.
Psychology—J. Drever, M.A., *B.Sc.*, *D.Phil.*
Radiology—R. McWhirter, M.B., D.M.R.E
Psychiatry—R. G. McInnes, M.B., J. R. Bailey, M.B., A. Ninian Bruce D.Sc., M.D., C. M. Ross, M.B.
Therapeutics—A. R. Gilchrist, M.D., W. M. Arnott, M.B.
Orthopaedics—W. A. Cochrane, M.B.
Clinical Midwifery—R. W. Johnstone, M.A., M.D., Douglas Miller, M.D., W. F. T. Haultain, O.B.E., M.C., B.A., M.B., E. C. Fahmy, M.B., John Sturrock, M.B., Clifford Kennedy, M.B., E. M. Robertson, M.B., J. B. Dewar, M.B.
Child Life and Health—L. H. F. Thatcher, M.D., *Gertrude Herzfeld*, M.B., J. M. Murray, M.B., W. C. Wilson, M.B., H. L. Wallace, M.B., D. N. Nicholson, M.B., E. F. Dott, M.B., T. Y. Finlay, M.D.
Clinical Surgery—C. F. W. Illingworth, M.D., B. M. Dick, M.B., D. Band, M.B.
Clinical Medicine—R. M. Murray Lyon, M.D., W. Melville Arnot, M.B., J. A. Bruce, M.B
Obstetrics and Gynaecology—R. T. Thin, M.B.

CLINICAL TEACHING STAFF, ROYAL INFIRMARY.

Clinical Surgery—Geo. L. Chiene, M.B., W. J. Stuart, M.B., J. W. Struthers, M.B., Sir D. P. D. Wilkie, M.D., Ch.M., Henry Wade, M.D., Sir John Fraser, M.D., Ch.M., J. M. Graham, Ch.M., A. Pirie Watson, Ch.M., F. E. Jardine, M.B., W. Q. Wood, M.D., Ch.M. J. J. M. Shaw, M.D., Walter Mercer, M.B., K. Paterson Brown, M.B., R. Leslie Stewart, M.B., T. M'W. Millar, M.B., D. S. Middleton, M.B.
Clinical Medicine—W. T. Ritchie, M.D., John Eason, M.D., D. Murray Lyon, M.D., J. D. Comrie, M.D., Alex. Goodall, M.D., A. Fergus Hewat, M.D., W. D. D. Small, M.D., W. A. Alexander, M.B., D. M. Dunlop, M.D., A. R. Gilchrist, M.D., T. R. R. Todd, M.D., J. K. Slater, M.B., J. D. S. Cameron, M.D., W. R. Russell, M.D., J. G. McCrie, M.B., R. M. Murray Lyon, M.D., W. L. Lamb, M.B
Clinical Gynaecology—R. W. Johnstone, M.D., W. F. T. Haultain, M.B., Douglas Miller, M.D., E. C. Fahmy, M.B., John Sturrock, M.B., *C. D. Kennedy*, M.B
Diseases of the Larynx, Ear and Nose—G. Ewart Martin, M.B., I. S. Hall, M.B., J. P. Stewart, M.D., A. B. Smith, M.D.
Diseases of the Skin—Robert Aitken, M.D., G. H. Percival, M.D., Ph.D., G. A. G. Peterkin, M.B.
Diseases of the Eye—H. M. Traquair, M.D., E. H. Cameron, M.B., C. W. Graham, M.B., J. R. Paterson, M.B.

Practical Instruction is afforded, under the superintendence of the Professors, in Laboratories with the necessary appliances, and in Tutorial and Practical Classes connected with the above Chairs, and opportunities are afforded to Students to extend their practical knowledge and engage in original research.

Opportunities for Hospital Practice are afforded at the Royal Infirmary, the Royal Hospital for Sick Children, Royal Maternity Hospital, the City Fever Hospital, Edinburgh Municipal Hospitals, and the Royal Edinburgh Hospital for Mental Disorders. Upwards of 3,800 beds are available for the Clinical Instruction of Students of the University.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh, viz., Bachelor of Medicine (M.B.), *Bachelor of Surgery* (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.)

The Class Fees for M.B. and Ch.B., including Hospital Fee (£12), amount to about £215, and the Matriculation and Examination Fees to £47 15s. 6d. An additional Fee of £21 is payable by those who proceed to M.D., and £21 by those who proceed to Ch.M.

POST-GRADUATE INSTRUCTION.—Courses of instruction are given for the University Diplomas in Public Health, Tropical Medicine and Hygiene, Psychiatry, and Medical Radiology. These Diplomas are open to approved registered practitioners as well as to graduates in Medicine and Surgery of the University. Courses of instruction for the Diploma in Tropical Veterinary Medicine are also given. This Diploma is open to those holding an approved Veterinary qualification registrable by the Royal College of Veterinary Surgeons. *The University also takes part in the Courses given under the auspices of* the Edinburgh Post-Graduate Courses in Medicine. In the departments of the Faculty of Medicine, provision is made for research by students of graduate standing. In the University laboratories facilities will be provided for candidates for the Degree of Ph.D. whose applications to engage in research have been *accepted by the Senatus*.

A Syllabus and further information as to Matriculation, the Curricula of Study for Degrees, etc., may be obtained from the Dean of the Faculty of Medicine; and for Degrees in the Faculties of Arts, Science, Divinity, Law, and Music, from the Deans of these Faculties, or from the Secretary; and full details are given in the University Calendar, published by James Thin, 55, South Bridge, Edinburgh. Price, by post, 5/9.

June, 1937. By authority of the Senatus, W. A. FLEMING, Secretary.

UNIVERSITY OF WALES.

THE WELSH NATIONAL SCHOOL OF MEDICINE.

The Welsh National School of Medicine comprises departments of Materia Medica and Pharmacology; Pathology and Bacteriology; Medicine; Surgery; Obstetrics and Gynaecology; Preventive Medicine and Public Health; Tuberculosis.

COURSES OF INSTRUCTION FOR MEDICAL DEGREES AND DIPLOMAS.

Courses of Instruction are given by the School in the above Departments, for the medical degrees of the University of Wales, and may be attended by students preparing for degrees and diplomas of other Examining Bodies.

The next Session opens on October 5th, 1937.

Hospital Instruction is given at the Cardiff Royal Infirmary, Llandough Hospital, City Lodge Hospital, City Mental Hospital, City Isolation Hospital, The Lord Pontypridd Hospital (Acute Rheumatism—Children), Prince of Wales' Hospital (Orthopaedic), Cefn Mably, Glan Ely and Sully Hospitals (Tuberculosis).

POSTGRADUATE STUDY.

Facilities are given in the School for approved research in all branches of Medicine and Surgery. Postgraduate Scholarships are available, *ranging in value from* £150 to £250 per annum.

Complete Postgraduate Courses of Instruction are given for the Diploma in Public Health, and for the Tuberculous Diseases Diploma of the University of Wales.

Application for admission to any of the Courses should be made, as early as possible, to the Secretary, The Welsh National School of Medicine, The Parade, Cardiff, from whom further particulars may be obtained.

30th June, 1937.

UNIVERSITY OF ST. ANDREWS

Chancellor—The Rt. Hon. The Earl BALDWIN OF BEWDLEY, K.G., P.C., LL.D.
Rector—(Vacant.)
Vice-Chancellor and Principal—SIR JAMES COLQUHOUN IRVINE, C.B.E., Sc.D., D.Sc., LL.D., D.C.L., F.R.S.

The University of St. Andrews includes the United College of St. Salvator and St. Leonard and St. Mary's College in St. Andrews and University College, the Advanced Medical School, and the Dental School in Dundee.

FACULTY OF MEDICINE

Dean and Adviser of Studies at Dundee—PROFESSOR FRANCIS JAMES CHARTERIS, M.D.
Adviser of Studies at St. Andrews—PROFESSOR D. WATERSTON, M.D.

The University confers the following Degrees and Diplomas:—M.B., Ch.B., M.D., Ch.M., Ph.D., D.P.H. (all open to men or women).

Session 1937-38 commences October 5th, 1937. The whole curriculum may be taken at Dundee, or the first two years may be taken in St. Andrews and the remaining three in Dundee.

Clinical Instruction. Ample facilities at Dundee Royal Infirmary (450 beds), Maryfield Hospital (330 beds), King's Cross Hospital (250 beds), Ashludie (120 beds), Dundee Mental Hospital (600 beds), Dundee Eye Institution, Dental Hospital, and other Medical and Surgical Institutions in Dundee.

Hospital Appointments. Numerous resident hospital appointments are available in the above institutions.

Residence Halls: For Men in St. Andrews, for Women in St. Andrews and Dundee. The William Low Residence for Medical Students at Dundee is available for students during Clinical study.

Students' Unions, Athletic Grounds and Gymnasia in St. Andrews and in Dundee.

Bursary (Scholarship) Competitions: For Dundee, entry April 9th; Examinations, May. For St. Andrews, entry May 6th; Examinations, June.

Bursaries Exclusively for Medical Students: At St. Andrews: Taylour-Thomson (for women), 1 of £40 and 1 of £30 for 5 years; Malcolm (for men and women), £40 for 5 years, vacant annually. At Dundee: Hepburn (for men or women), £25 for three years.

Bursaries for which Medical Students are Eligible: At St. Andrews: About 10 Bursaries ranging in value from £50 to £20, tenable for 3, 4 or 5 years, vacant annually, and Fourth year Bursaries of £50, £30 and £22. At Dundee: Nine Entrance Bursaries of from £50 to £40 for four years, and four bursaries of from £30 to £25 for allocation in the remaining years of the course. In addition there are four scholarships of £100 available for graduates.

Residential Entrance Scholarships for Men: At St. Andrews: Seven or eight of £100 competed for annually in June. Medical students are eligible.

Preliminary Examination: September and March. Entries, August 6th and February 6th.

Fees: For complete M.B., Ch.B. Course, exclusive of Examination Fees, Hospital Fees, etc., £182.

Provision for Post-Graduate Study and Research.

Full information may be got from the Secretary of the University, 71, North Street, St. Andrews, or the Dean of the Faculty of Medicine, Westlands, St. Andrews.

SCHOOL OF DENTISTRY

Adviser of Studies: W. GRAHAM CAMPBELL, M.B., C.M., L.D.S., D.D.S.

The University confers the Degrees of B.D.S., M.D.S., and Ph.D. and the Diplomas of L.D.S. and D.P.D.

Full facilities for instruction are available in the Scientific Departments of the University, the Advanced Medical School and Medical and Surgical Institutions.

The Dental Hospital is fully equipped for the training of Students in Mechanical, Prosthetic and Operative Dentistry.

Financial assistance is available for students.

Full information may be obtained from the Adviser of Studies, Dental Hospital, Dundee.

The University, St. Andrews, August, 1937.

QUEEN'S UNIVERSITY OF BELFAST.

FACULTY OF MEDICINE—SESSION 1937-8

Vice-Chancellor: F. W. OGILVIE, M.A.

Anatomy.—T. Walmsley, M.D., C. J. A. Woodside, M.B., F.R.C.S and R. H. Hunter, M.D.
Operative Surgery and Applied Anatomy.—H. P. Malcolm, M.Ch.
Dunville Chair of Physiology.—H. Barcroft, M.A., M.D.
Practice of Medicine.—W. W. D. Thomson, M.D., B.Sc., D.P.H.
Practice of Surgery.—P. T. Crymble, M.B., F.R.C.S.
Materia Medica and Therapeutics.—J. T. Lewis, M.D.
Midwifery and Gynaecology.—C. G. Lowry, M.D., F.R.C.S.I.
Musgrave Chair of Pathology.—J. H. Biggart, M.D., B.Sc.
Medical Jurisprudence.—J. H. Biggart, M.D., B.Sc.
Ophthalmology.—J. R. Wheeler, M.B., F.R.C.S.
Sanitary Science.—W. J. Wilson, B.A., D.Sc., M.D., D.P.H.
Physics.—K. G. Emeleus, M.A., Ph.D.
Zoology.—T. T. Flynn, D.Sc.
Botany.—James Small, D.Sc.
Chemistry.—A. W. Stewart, D.Sc.
Organic Chemistry.—H. Graham, D.Sc.
Biochemistry.—D. C. Harrison, D.Sc., Ph.D., S. Andrews, M.D
Vaccination.—S. R. Armstrong, M.D.
Pharmacology.—E. B. C. Mayrs, M.D., D.P.H.
Bacteriology.—N. C. Graham, M.B.
Psychological Medicine.—N. B. Graham, M.B.

The Lectures of the WINTER SESSION of 1937-8 will commence on Tuesday, October 12. The Summer Medical Classes will commence on April 12, 1938.

The Anatomical rooms are open during the entire day, and Students are aided in their dissections by the Professors of Anatomy and the Demonstrators.

The Examinations for Medical Scholarships at entrance are held in June.

Scholarships will be open for competition at the Professional Examinations in Spring and Summer, 1938.

The Fees for a complete Medical Course (including Hospital Fees) amount to about £230.

HOSPITALS IN BELFAST (recognized by the University of Clinical Instruction).

ROYAL VICTORIA HOSPITAL.Clinical Fees: Winter Session of six months, £7 7s.; Summer Session of three months £4 4s.; Winter and Summer, nine months, £9 9s.; Perpetual Fees, payable in two instalments, £21. Hospital Fee, half a guinea for each Winter or Summer Session.

MATER INFIRMORUM HOSPITAL.—The Clinical Fees are the same as those of the Royal Victoria Hospital.
BELFAST UNION INFIRMARY and CHILDREN'S HOSPITAL.
BELFAST FEVER HOSPITALS (CITY FEVER HOSPITAL, Purdysburn, and UNION FEVER HOSPITAL).
ROYAL MATERNITY HOSPITAL. BELFAST HOSPITAL FOR SICK CHILDREN.
ULSTER HOSPITAL FOR DISEASES OF WOMEN AND CHILDREN, and MIDWIFERY DISPENSARY.
BELFAST OPHTHALMIC HOSPITAL AND EYE AND EAR DISPENSARY.
BEN ULSTER EYE, EAR, AND THROAT HOSPITAL.
SAMARITAN HOSPITAL. FORSTER GREEN HOSPITAL FOR DISEASES OF THE CHEST.
BELFAST HOSPITAL FOR DISEASES OF SKIN. BELFAST DIST. LUNATIC ASYLUM.

The Calendar, containing full information regarding the new Regulations for Courses, Fees, Scholarships, &c., can be had application to the Bursar, Queen's University, Belfast, price 2s.

By Order of the Vice-Chancellor. ANDREW PICKEN, Registrar.

UNIVERSITY COLLEGE, DUBLIN.

MEDICAL SCHOOL.

Session 1937-38.

WINTER SESSION—Lectures commence on OCTOBER 12th.
Introductory Course on OCTOBER 5th.

Professors and Lecturers.

Anatomy.
Professor—Edward Patrick McLoughlin, B.A., M.D., B.Ch., B.A.O.
Physiology.
Professor—James M. O'Connor, B.A., M.D.
Pharmacology and Biochemistry.
Professor—Edward J. Conway, M.B., D.Sc.
Zoology.
Professor—J. Bayley Butler, M.A., M.B., B.Ch., B.A.O.
Botany.
Professor—Joseph Doyle, B.A., D.Sc
Chemistry.
Professor—Thomas J. Nolan, B.A., D.Sc.
Professor of Chemistry as applied to Medicine—Joseph Algar, B.A., D.Sc.
Lecturer—John Keane, M.Sc., Ph.D.
Physics.
Professor—John J. Nolan, M.A., D.Sc.
Professor of Technical Physics—John J. Dowling, M.A., F.Inst.P
Lecturer—Patrick J. Nolan, D.Sc., Ph.D.
Pathology and Bacteriology.
Professor—Thomas T. O'Farrell, M.D., F.R.C.S.I., D.P.H.
Public Health and Bacteriology.
Professor—William D. O'Kelly, B.A., M.D., D.P.H.
Medicine.
Professor of Medicine—Henry F. Moore, M.D., D.Sc.
Professor of Systemic Medicine—James N. Meenan, M.D., B.Ch., B.A.O., D.P.H.
Surgery.
Professor of Surgery—Henry L. Barniville, B.A., M.D., M.Ch.
Professor of Systemic Surgery—Henry S. Meade, M.Ch., F.R.C.S.I.
Midwifery and Gynaecology.
Professor—Robert P. Farnan, M.B., B.Ch., M.A.O.
Lecturer (Obstetrics)—James J. O'Kelly, B.A., M.B., B.Ch., M.A.O
Lecturer (Gynaecology)—Reginald White, F.R.C.S.I.
Materia Medica and Therapeutics.
Professor—Theobald W. T. Dillon, M.B., B.Ch., B.A.O.
Ophthalmology.
Professor—R. Dwyer Joyce, F.R.C.S.I.
Medical Jurisprudence.
Professor—J. McGrath, M.Sc., M.B.
Dental Surgery.
Professor—E. Sheridan, M.D.S., F.R.C.S.I., L.D.S.
Dental Mechanics.
Professor—J. I. Potter, M.D.S., L.D.S.
Orthodontia.
Lecturer—Laurence Flanagan, B.D.S., M.B., B.Ch.

All Scholarship Examinations in Medicine will be held on October 1st.

Introductory Course.—Particular attention is paid to beginners, for whom a special Introductory Course is delivered at the commencement of the Winter Session, beginning on October 5th; it is continued daily for a week.

Regulations for Courses of Study for Degrees and General Regulations containing information as to Scholarships, etc., may be obtained from The Registrar, University College, Dublin.

ROTUNDA HOSPITAL, DUBLIN.

THE HOSPITAL contains 135 beds. Upwards of 3,000 maternity cases and nearly 1,000 gynaecological patients are treated during the year. Besides the Hospital, there is an external Maternity Department with 2,000 cases. The routine for students consists of attendance at the Morning Lectures on Midwifery and Gynaecology, examination of patients in the Gynaecological Department, attendance at operations, and all abnormal labour in the Hospital Wards and conduction of labour cases in the intern and extern departments. Students, both qualified and unqualified, attend the Ante-Natal Clinics, the Infants' Ward and Dispensary. A Bio-Chemist has just been appointed who is carrying out the ZONDEK-ASCHHEIM test for pregnancy, and is prepared to help any Post-Graduates who are keen on doing research work on the material in the Hospital. An X-Ray Plant is used for diagnosis and treatment. Large new ante-natal dispensary has just been completed giving greatly increased facilities for ante-natal and out-patient gynaecological and infant clinics.

Qualified students are given facilities for observing and following the course of all abnormal cases in the Hospital or in the district and, where practical, are allowed to perform some minor obstetric and gynaecological operations and assist at major ones

The Hospital Courses are always going on during the year, and Students can join at any time. The Class is limited, therefore it is advisable to register in advance. Board and residence can be obtained at the Hospital; the living accommodation has been much improved lately. One grass and two hard tennis courts and one standard squash rackets court are available for students living in the residents' Mess. Extra classes in gynaecological diagnosis and operative midwifery are conducted by Assistants to the Master.

Fees, one month, £6 6s.; months other than the first, £4 4s.; three months, £12 12s.; six months, £21.

The L.M. certificate is given to fully-qualified practitioners of Medicine on examination after six months' resident attendance at the Hospital.

Full particulars from A. H. DAVIDSON, M.D., F.C.O.G., Master, Rotunda Hospital.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC.

TRINITY COLLEGE.

THE WINTER SESSION will begin on 1st October, 1937.

All information regarding Courses for the Medical and Dental Degrees, for the Diploma in Public Health, for the Diploma in Gynaecology and Obstetrics, and for the Diploma in Psychological Medicine may be obtained on application to the Registrar of the School of Physic, Trinity College, Dublin.

THE POLYTECHNIC, REGENT STREET, W.1.

DEPARTMENT OF CHEMISTRY & BIOLOGY.

Head of Department:
H. LAMBOURNE, M.A., M.Sc., F.I.C.

DAY COURSE in CHEMISTRY, PHYSICS, and BIOLOGY, and EVENING COURSE in CHEMISTRY and PHYSICS.

For the First Medical and PRE-MEDICAL EXAMINATIONS.

New Session commences:
Day - - September 21st, 1937.
Evening - - September 20th, 1937.

Fee to London Students:
Day - - £9 9s. per term.
Evening - - £2 2s. per term.

Early application should be made to the Director of Education.

THE MEDICAL AND DENTAL DEFENCE UNION OF SCOTLAND, LIMITED.

Secretaries and Registered Office: Millar, Thomson & Dunlop, C.A., 113, St. Vincent Street, Glasgow, C.2.

ANNUAL SUBSCRIPTION £1. *ENTRANCE FEE 10/-*

No entrance fee to those joining within 12 months of obtaining qualification. Benefits include defence of claims for alleged negligence in professional work, including unlimited indemnity and costs, and advice on professional difficulties.

Particulars and forms of application can be obtained from the Secretaries at the above address.

CITY OF LONDON MATERNITY HOSPITAL

(Incorporated by Royal Charter)
CITY ROAD, LONDON, E.C. 1

Midwifery Training School

PRACTITIONERS and MEDICAL STUDENTS admitted to Hospital Practice with operative Midwifery and Obstetrical complications—nearly 2,000 patients annually. Fees £16 16s. per month or £8 8s. per fortnight (inclusive of board-residence).

PUPILS trained as Midwives in accordance with C.M.B. regulations. Reduced fees under Ministry of Health Scheme. Sister-Tutor on Staff. Post-graduate Courses in Analgesia.

'Phone: Clerkenwell 5171

QUEEN CHARLOTTE'S MATERNITY HOSPITAL

MARYLEBONE ROAD, N.W.1

Medical Students and Qualified Practitioners admitted to the Practice of this Hospital. Unusual opportunities are afforded of seeing Obstetrical Complications and Operative Midwifery (about one half of the total admission being primiparous cases). Over 2,700 patients are admitted to the Wards annually, and in the Ante-natal Department there are over 20,000 attendances per annum. Clinical demonstrations are given by the Staff daily.

For rules, fees, etc., apply H. B. STOKES, Secretary-Superintendent.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.1.

THE "WANDER" SCHOLARSHIP IN DISEASES OF CHILDREN.

Applications are invited for the office of "WANDER" SCHOLAR (Clinical Pathologist and Registrar to the Children's Department). Salary £250 per annum. Duties to commence October 1st, 1937. Candidates must be registered medical practitioners who have held a resident hospital post and had some experience in pathology or in diseases of children. The office is a whole-time one and is tenable for one year.

Applications (six copies), together with six copies of three recent testimonials, should be submitted to the undersigned (from whom further details regarding the duties of the office can be obtained), not later than Friday, September 17th, 1937

By Order of the House Committee,
CHARLES M. POWER, Secretary.

THE UNIVERSITY OF SHEFFIELD.

FACULTY OF MEDICINE

The Council of the University and the Board of Management of the Royal Hospital, Sheffield, acting conjointly, are about to make an appointment to the post of ASSISTANT PATHOLOGIST to the Hospital and DEMONSTRATOR OF *PATHOLOGY* to the University. The salary offered is £500 per annum. Applications, accompanied by the names of three referees, should be sent on or before September 18th to the undersigned, from whom further details may be obtained.

W. M. GIBBONS,
Registrar.

UNIVERSITY OF BIRMINGHAM.

APPOINTMENT OF LECTURER IN DEPARTMENT OF ANATOMY.

Applications are invited for the post of LECTURER IN ANATOMY (Grade IIb).

Stipend at the rate of £400 per annum. Duties to begin October 1st, 1937.

Three copies of application, with testimonials, must be sent on or before September 14th to the undersigned from whom further particulars may be obtained

C. G BURTON,
Secretary.

The University,
Edmund Street, Birmingham, 3.
August, 1937

ROYAL BERKSHIRE HOSPITAL, READING.

The Royal Berkshire Hospital School of Orthoptics is open to RECEIVE STUDENTS for TRAINING for the DIPLOMA in ORTHOPTICS

Candidates must be of Matriculation or School-leaving certificate standard.

Course starts in September.

Applications to be sent to the undersigned

H. E. RYAN,
Secretary and House Governor.

THE OTAGO HOSPITAL BOARD.

UNIVERSITY OF OTAGO AND DUNEDIN HOSPITAL, NEW ZEALAND.

Applications are invited for the position of RESIDENT MEDICAL OFFICER (Senior)

Candidates must hold a degree in Medicine of a British University, *must* have been qualified for three years, and have held resident hospital appointments for at least one year. Preference given to unmarried applicants

The successful applicant will be required to act as Medical Tutor under the direction of the Professor of Medicine and as Superintending House Physician and Medical Registrar.

Salary to be at the rate of £500 per annum, with board and residence

Full details may be obtained on application to the Office of this *Journal*.

JOHN JACOBS,
Secretary, Otago Hospital Board,
July 15th 1937. Dunedin, New Zealand.

COUNTY OF DORSET.

Assistant County Medical Officer and Medical Officer of Health for the Wareham Borough, the Wareham and Purbeck Rural District, and the Swanage Urban District.

The Dorset County Council invite applications for the joint whole-time appointment of ASSISTANT COUNTY MEDICAL OFFICER AND MEDICAL OFFICER OF HEALTH for the Wareham Borough, Wareham and Purbeck Rural District, and Swanage Urban District (population about 25,000).

The salary for the combined appointment will be £800 per annum, together with a travelling allowance of £50 per annum and necessary out-of-pocket expenses according to the scales now in force.

Applicants must be qualified in accordance with Article 8 of the Sanitary Officers (outside London) Regulations, 1935, and hold the Diploma in Public Health or similar qualification.

The candidate appointed will, as regards his duties as Assistant County Medical Officer, act under the direction of the County Medical Officer of Health, and will be required to perform such duties as may be from time to time prescribed. As regards his duties as Medical Officer of Health, he will be subject to the control and direction of the District Councils concerned.

The post will be designated under the Local Government and Other Officers' Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination. He will also be required to reside within the area for which he is Medical Officer of Health and to take up his appointment on January 1st, 1938.

Candidates must apply in their own handwriting on the prescribed form, to be obtained, on receipt of a stamped addressed foolscap envelope, from the undersigned, by whom applications, accompanied by copies of not more than three recent testimonials, must be received not later than Monday, September 20th, 1937.

Canvassing in any form will be a disqualification.

C. P. BRUTTON,
County Offices, Clerk of the County
Dorchester. Council.
August 21st, 1937.

COUNTY BOROUGH OF IPSWICH.

ASSISTANT MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

The Council invite applications for a whole-time Assistant Medical Officer of Health and School Medical Officer. Applicants may be of either sex, but must be fully qualified medical practitioners possessing a Diploma in Public Health and be under 40 years of age.

The salary will be at the rate of £600 per annum, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £700.

The Council have adopted the Local Government and Other Officers' Superannuation Act, 1922, and the appointment will be a designated post thereunder as from April 1st next. The successful candidate will be required to pass a medical examination.

The duties will be principally those of a School Medical Officer, but the person appointed will also be required to work in other departments at the discretion of the Medical Officer of Health.

The appointment is determinable by three months' notice from either side.

Forms of application may be obtained from the Medical Officer of Health, Public Health Department, Elm Street, Ipswich, and applications with copies of not more than three recent testimonials must be delivered to the undersigned not later than September 30th, 1937, in an envelope marked "Appointment of Assistant Medical Officer of Health, etc."

Canvassing directly or indirectly will be a disqualification

Town Hall, A. MOFFAT,
Ipswich. *Town Clerk.*
August 24th, 1937.

COUNTY OF KENT.

ASSISTANT TUBERCULOSIS OFFICER (male).

Applications are invited for the above-mentioned whole-time appointment on the staff of the Public Health Department.

The duties will include attendance at dispensaries, clinical supervision of sanatorium beds, and such other work as may be assigned from time to time.

The salary is at the rate of £600 a year, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £750 a year, with subsistence and travelling allowances, according to the county scale.

The post is designated as an established one under the Local Government and Other Officers' Superannuation Act, 1922, and is terminable by three months' notice on either side. The successful candidate will be required to pass a medical examination

Applications, stating age, qualifications and clinical experience, with special reference to practical experience in the diagnosis and treatment of tuberculosis, accompanied by copies of not more than three testimonials, must be received by the County Medical Officer of Health, Sessions House, Maidstone, *not later than* Tuesday, September 7th, 1937. No official form of application will be issued.

W. L. PLATTS,
Clerk of the County Council.
Sessions House, Maidstone
August 23rd, 1937

COUNTY BOROUGH OF MIDDLESBROUGH. HEALTH DEPARTMENT.

HOLGATE MUNICIPAL HOSPITAL.

Applications are invited from Registered Male Medical Practitioners (unmarried) for the post of ASSISTANT RESIDENT MEDICAL OFFICER at the Holgate Municipal Hospital, at a salary of £270 per annum, together with board, residence, and laundry.

The appointment will be for one year. In addition to hospital duties the successful candidate will be required to undertake relief or holiday duty work of other whole-time members of the Corporation's medical staff as required.

The Municipal Hospital contains 329 beds and is a training school for nurses and affords excellent facilities for postgraduate work and experience.

Application, stating age and experience, together with copies of three testimonials, to be sent to the Medical Officer of Health, Municipal Buildings, Middlesbrough, *not later than* September 15th, 1937.

Municipal Buildings. PRESTON KITCHEN,
Middlesbrough. Town Clerk.
August 30th, 1937

ROYAL ARMY MEDICAL CORPS

Applications are invited from medical men for appointment to commissions in the Royal Army Medical Corps.

Candidates will, for the present, be selected for commissions without competitive examination, and will be required to present themselves in London for interview and physical examination on, or about, 21st October, 1937. They must be registered under the Medical Acts, and normally must not be over the age of 28 years.

Successful candidates will, in the first instance, be given short service commissions for five years. During the 4th year of this period they will be given the opportunity of applying for permanent commissions in either the Royal Army Medical Corps or the Indian Medical Service. Those not selected will retire on completion of five years' service with a gratuity of £1,000.

Candidates who are successful will, unless they are seconded to complete a hospital appointment, assemble at the Royal Army Medical College, London, on 1st November, 1937.

Particulars of the Conditions of Service in the Royal Army Medical Corps, pay and allowances, and forms of application, may be obtained on application, either in writing, or personally, to the Assistant Director General, Army Medical Services, The War Office, London, S.W. 1.

HIS MAJESTY'S COLONIAL SERVICE.

COLONIAL MEDICAL SERVICE.

A vacancy exists for an ASSISTANT MEDICAL SUPERINTENDENT at the CENTRAL MENTAL HOSPITAL, TANJONG RAMBUTAN, in the FEDERATED MALAY STATES.

Qualifications.—Candidates must be British subjects of European parentage, under 33 years of age, and must have had at least two years' experience as an Assistant Medical Officer in a County, City, or Borough Mental Hospital in Great Britain or Ireland. Possession of medical qualifications registrable in the United Kingdom and a Diploma in Psychological Medicine is essential.

Salary.—£840 a year, rising by annual increments of £35 to £1,120 a year.

Quarters.—Furnished quarters are provided at a small rental.

Passages.—Free passages will be provided both for an officer and his family on first appointment and when proceeding on or returning from leave.

Terms of Appointment.—The appointment is pensionable, subject to a probationary period of three years in the first instance.

Duties.—The officer will be required to assist the Medical Superintendent in the treatment of patients, maintenance of discipline, etc., in the Mental Hospital. He may be required to give lectures and clinical teaching on mental diseases to students of the College of Medicine, Singapore.

Further particulars and forms of application may be obtained from the *Director of Recruitment (Colonial Service), 2, Richmond Terrace, Whitehall, London, S.W.1.*

BRITISH POSTGRADUATE MEDICAL SCHOOL.

There are THREE VACANCIES for HOUSE SURGEONS in the Surgical Unit, British Postgraduate Medical School, Hammersmith Hospital, Ducane Road, W.12.

The appointments are for six months in the first instance, and the holder may apply for a further period of six months. Salary at the rate of £105 per annum, with board, lodging and laundry. Duties to commence on October 1st, 1937.

Duties are mainly in General Surgery, but one appointment is to the Department of Traumatic and Orthopaedic Surgery. It is desirable that applicants should have held a previous House appointment.

Applications, with copies of testimonials, should be sent to the Dean of the School not later than September 13th, 1937.

HERTFORDSHIRE COUNTY COUNCIL.

PUBLIC ASSISTANCE.
COUNTY INSTITUTION, OSTER HOUSE. ST. ALBANS.

HOUSE SURGEON

Applications are invited for the post of House Surgeon (either sex) at the above Institution, which comprises general medical and surgical wards, with separate Maternity and Children's Units.

Salary will be at the rate of £175 per annum, with an allowance of £3 3s. per week until such time as board and residence can be provided in the Institution. The appointment will be limited to one year, and not renewable. The House Surgeon must, until quarters in the Institution are provided, reside near the Institution at an address to be approved by the Guardians' Committee.

Candidates must be duly qualified and registered.

Applications, stating age, qualifications and experience, with copies of not more than three recent testimonials, should be sent to the Clerk of the St. Albans Guardians' Committee, Oster House, St. Albans (from whom any further details may be obtained), as soon as possible.

Hertford, ELTON LONGMORE,
Herts. Clerk of the County Council.
August 28th, 1937.

COUNTY BOROUGH OF SMETHWICK. ST. CHAD'S HOSPITAL, BIRMINGHAM.

HOUSE SURGEON.

Applications are invited from registered medical practitioners for the appointment of House Surgeon at the Council's Municipal Hospital. The appointment will be for a period of six months, with a salary at the rate of £150 per annum, with the usual emoluments. If the successful candidate is reappointed for a further period of six months, the salary will be at the rate of £200 per annum. St. Chad's Hospital contains 145 beds, and the cases treated include general medical, acute surgical, and maternity patients. It is staffed by the Honorary Consultants of the Birmingham teaching hospitals.

Form of application may be obtained from the Medical Superintendent, St. Chad's Hospital, Hagley Road, Birmingham 16, to whom applications, endorsed "House Surgeon" and accompanied by copies of three recent testimonials, must be delivered not later than first post on September 11th, 1937.

Canvassing, directly or indirectly, will disqualify.

Council House, FRANK CHAPMAN,
Smethwick. Town Clerk.
August 24th, 1937.

GENERAL POST OFFICE.

Headquarters Medical Branch.
(Female Staff.)

There will shortly be two vacancies for ASSISTANT WOMEN MEDICAL OFFICERS in the Headquarters Medical Branch. The appointments will be pensionable and will carry a salary commencing at £500 a year and rising by annual increments of £25 to £700 a year. The rates of salary are liable to review.

Each candidate must be a fully qualified medical practitioner, a natural-born British subject, and the child of a person who is or was at the time of death a British subject. Candidates must also be unmarried or widows. Preference will be given to candidates under 30 who have held one or more hospital appointments. The successful candidates will not be allowed to engage in private practice in addition to their official duties.

Applications, stating qualifications, age, etc., with copies of any recent testimonials, should be sent to the Chief Medical Officer, General Post Office, London, E.C.1, not later than September 20th, 1937.

Political influence should not be sought in support of applications; it would prejudice rather than assist the candidature.

The Female Medical Staff at Headquarters consists of a senior Woman Medical Officer and five Assistant Women Medical Officers. Information as to the duties can be obtained from the Chief Medical Officer.

Candidates may be required to attend for personal interview in London at their own expense.

BUXTON CLINIC FOR RHEUMATISM AND ALLIED DISEASES.

Applications are invited for the appointment of HOUSE PHYSICIAN. Candidates must be fully qualified and registered, and must have had previous hospital experience. The appointment is for six months, but is renewable. Applications, accompanied by three recent testimonials, should be in the Secretary's hands not later than September 18th.

The appointment is to start about October 1st, 1937.

The Clinic has full facilities for physical and hydrological treatment and has its own radiological department. Investigatory work in Biochemistry, Pathology, and Bacteriology is carried on in conjunction with the Devonshire Royal Hospital.

Salary £150-£200 per annum, with board, residence, and laundry.

H. S. Needham, Secretary, The Buxton Clinic Ltd., Buxton, Derbyshire.

INDIAN MEDICAL SERVICE

RECRUITMENT OF EUROPEAN OFFICERS

Applications are invited from Medical Men for Permanent Commissions in His Majesty's Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or of £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

British subjects of pure European descent who are under 32 years of age and who are registered under the Medical Acts in force in Great Britain and Northern Ireland are eligible to apply.

CAREERS.

The Indian Medical Service offers a permanent career with wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after one year's Indian Service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of Civil Officials and for general medical administrative purposes: to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

RATES OF PAY.

Years of Service.	Rank	Basic Pay. Rs. per mensem.	Overseas Pay. £ per month.	Total. £ per annum.
1	Lieutenant.	450	15	585
2	Captain.	500	25	750
3	"	550	25	795
4	"	550	25	795
5	"	600	25	840
6	"	600	30	900
7	"	700	30	990
8	"	700	30	990
9	"	700	35	1050
10	"	700	35	1050
11	Major.	800	35	1140
12	"	800	40	1200
13	"	800	40	1200
14	"	800	40	1200
15	"	800	40	1200
16	"	950	40	1335
17	"	950	40	1335
18	"	950	40	1335
19	"	1100	40	1470
20	"	1100	40	1470
21	Lieut.-Col.	1350	40	1695
22	"	1350	40	1695
23	"	1350	40	1695
24	"	1500	40	1830
25	"	1500	40	1830

Note.—(1) The rupee is at present stabilized at a rate equivalent to 1s. 6d.
(2) An officer promoted to the rank of Lieut.-Colonel before completion of 20 years' service will receive pay at the rate of Rs. 1200 per mensem (basic) plus £40 per month overseas pay

Extras.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION.

Candidates possessing certain higher medical qualifications or holding the Diploma in Public Health may be granted an antedate in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period. The maximum period of antedate, secondment, or antedate and secondment combined, admissible under this paragraph, is limited to 18 months.

OUTFIT ALLOWANCE.

Officers on appointment will receive an allowance of £75 towards the cost of outfit.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

LEAVE.

Leave can be taken at reasonable intervals, and adequate rates of leave pay are provided. Extra leave (known as study leave), which may not exceed 12 months in all during an officer's service, may be granted to officers desirous of pursuing special courses of study of a postgraduate nature. During such leave, study allowance, at present fixed at the rate of 12s. a day in the United Kingdom, £1 a day on the Continent of Europe, and £1 10s. a day in the United States of America and Canada is granted to an officer in addition to ordinary rates of leave pay.

PENSIONS.

The rates of pensions are as follows:—	Per annum.
After 17 years' service for pension	£372 0s.
" 18 " " "	£400 0s.
" 19 " " "	£428 0s.
" 20 " " "	£465 0s.
" 21 " " "	£502 0s.
" 22 " " "	£539 10s
" 23 " " "	£576 10s.
" 24 " " "	£614 0s.
" 25 " " "	£651 0s.
" 26 " " "	£697 10s
" 27 " " "	£744 0s.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with free passage to India. The families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges. Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately three months, prior to their embarkation for India on first appointment. Information as to the rates of pay admissible during this period and subsequently up to arrival in India is contained in the memorandum referred to below.

A memorandum giving full details regarding these appointments and forms of application may be obtained from the UNDER-SECRETARY OF STATE FOR INDIA, MILITARY DEPARTMENT, INDIA OFFICE, LONDON, S.W.1. The Selection Committee will meet at the India Office early in October next, and the selected candidates will be required to join a course of instruction commencing about 1st November, prior to sailing for India in February, 1938. Applications should reach the India Office as soon as possible and in no case later than October 2nd.

INDIA OFFICE, SEPTEMBER, 1937.

CITY OF BIRMINGHAM PUBLIC ASSISTANCE COMMITTEE.

ERDINGTON HOUSE.

ASSISTANT RESIDENT MEDICAL OFFICER

The Public Assistance Committee invite applications from fully qualified medical practitioners for appointment as Assistant Resident Medical Officer at Erdington House.

The Institution, which is approved for the purposes of the D P M. has accommodation for upwards of 1,800 inmates and is set apart for the reception of all classes of mental and nervous disorder. The admission rate is 1,500 per annum Parts of the Institution are certified under the provisions of the Mental Deficiency Acts, 1913/1927. There are facilities for research on the pathological and biological side, and the appointment gives opportunities for postgraduate study.

The Officer appointed will be required to assist in the general medical work of the Institution under the supervision of the Senior Medical Officers

Four weeks' leave of absence will be granted to the successful candidate during the term of office.

The appointment will be for a period of twelve months, and the salary attached to the appointment will be at the rate of £300 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance).

The appointment will be subject to one month's notice on either side.

Any further particulars as to the Institution and/or duties may be obtained upon application to the Medical Officer of the Institution, Dr. H. T. Kirkland, to whom applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, should be forwarded so as to reach him not later than 10 a.m. on Wednesday, September 16th, 1937.

Canvassing in any form, oral or written, direct or indirect, will be regarded as a disqualification.

F. H. C. WILTSHIRE,
Town Clerk.

Council House,
Birmingham, 1.
August 26th, 1937.

CHESHIRE COUNTY COUNCIL CLATTERBRIDGE (COUNTY) GENERAL HOSPITAL NEAR BIRKENHEAD

MEDICAL SUPERINTENDENT

Applications are invited from duly qualified male medical practitioners, with experience in the administrative control of a public general hospital, for the post of Medical Superintendent of Clatterbridge (County) General Hospital, which Hospital has been appropriated under the Public Health Acts.

The salary will be £1,000 per annum, plus emoluments valued at £150.

Candidates must not be more than 45 years of age. Applicants must hold one of the higher Medical qualifications.

The Medical Superintendent will be required to reside within easy reach of the hospital. He will be an Assistant Medical Officer on the Staff of the County Medical Officer of Health, and will be responsible to the County Medical Officer of Health, and through him to the Management Committee, for the control of the hospital, and for the supervision of the work of the Medical, Surgical, Nursing and other personnel.

The Hospital, which has accommodation for 291 patients and is to be enlarged to accommodate 400, provides treatment for medical, surgical and maternity cases, and has a staff of one deputy medical superintendent, two resident assistant medical officers, and ten visiting specialists, with a nursing staff of 78

The appointment will be made subject to the Local Government and Other Officers' Superannuation Act, 1922, and is determinable by three calendar months' notice on either side

Canvassing, directly or indirectly, will disqualify the applicant.

Form of application and further particulars relating to this appointment can be obtained from the undersigned, and must be returned to him not later than September 15th, 1937.

IAN MACKAY,
County Medical Officer of Health.

Public Health Department,
24, Nicholas Street.
Chester.

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

NEWCASTLE GENERAL HOSPITAL.
(800 Beds.)

ONE SURGICAL REGISTRAR (PART-TIME).

Applications are invited from duly qualified and registered Medical Practitioners for the above post The salary in respect of the appointment is £250 per annum.

Further particulars may be obtained from the Medical Officer of Health, Health Department, Town Hall, Newcastle-upon-Tyne, 1, to whom applications, accompanied by not more than three recent testimonials, should be delivered on or before September 18th, 1937.

August 27th, 1937.

CITY OF BIRMINGHAM.

PUBLIC HEALTH DEPARTMENT— TUBERCULOSIS SECTION.

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from single registered male Medical Practitioners for the post of ASSISTANT RESIDENT MEDICAL OFFICER in the Tuberculosis Section of the Public Health Department. The successful candidate will be employed both in a Sanatorium and in a Dispensary.

Candidates should have held a resident General Hospital appointment and an appointment in some Institution set apart for the treatment of those suffering from tuberculosis. Experience in the diagnosis and treatment of non-pulmonary forms of tuberculosis is desirable.

The commencing salary will be at the rate of £400 per annum, rising by £25 to £450 per annum, with emoluments valued at £150 per annum.

The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

The appointment will be subject to the Birmingham Corporation Superannuation Scheme, to the candidate passing a medical examination, to the Birmingham Municipal Officers' Widows' and Orphans' Pensions Scheme (if applicable), and to one month's notice on either side.

Forms of application and a summary of duties may be obtained from, and should be returned with three recent testimonials to, the Chief Clinical Tuberculosis Officer, 151, Gt. Charles Street, Birmingham, 3, not later than September 16th, 1937.

F. H. C. WILTSHIRE,
Town Clerk.

Council House,
Birmingham, 1.

SURREY COUNTY COUNCIL.

ASSISTANT MEDICAL OFFICER

Applications are invited for the appointment of two Assistant Medical Officers (either sex) Applicants must possess a qualification in Public Health, and have had experience in the Medical Inspection of School Children, in Maternity and Child Welfare, and in the examination and certification of mentally defective children The officers appointed will be required to undertake such other Public Health duties as may be allocated to them. They will be on the staff of the County Medical Officer of Health, must reside in the County of Surrey, and devote their whole time to the work. Salary £600 per annum, rising by annual increments of £20 to £700 per annum. Travelling expenses in accordance with the Council's scale will be allowed.

The appointments will be subject to the approval of the Ministry of Health and of the Board of Education to the successful candidates passing a medical examination, to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and to the Staffing Regulations of the Council, which provide, *inter alia*, that appointments may be determined at any time by three months' notice

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should be made on the prescribed form and sent to the County Medical Officer of Health, County Hall, Kingston-upon-Thames, from whom copies of the application form may be obtained, and to whom any inquiries relating to the appointment should be addressed.

Last day for receipt of applications, Wednesday, September 8th, 1937.

Canvassing, directly or indirectly, will disqualify.

DUDLEY AUKLAND,
Clerk of the County Council.

County Hall,
Kingston-upon-Thames.
August 21st, 1937.

LEIGH JOINT HOSPITAL BOARD

Applications are invited from Medical Men (under 45 years of age) for appointment as MEDICAL SUPERINTENDENT of the BOARD'S INFECTIOUS DISEASES HOSPITAL, situate at Astley.

The salary assigned to the office is at the rate of £800 per annum, together with the usual residential allowances.

He will be required to reside in the residence provided (unfurnished) by the Board.

The post is designated under the Local Government and Other Officers' Superannuation Act, 1922, and the emoluments for the purpose of the Act are valued at £150.

Preference will be given to applicants who have held resident medical appointments, since qualification, at an Infectious Diseases Hospital and are experienced bacteriologists

The appointment will be terminable by one month's notice on either side.

Forms of application may be obtained from, and must be returned when duly completed to, the undersigned by noon on Thursday, September 16th, next.

Canvassing, either directly or indirectly, will disqualify.

ERNEST WILLIAMS.
Clerk to the Board.

The Sanatorium,
Astley, Nr. Manchester.
August 22nd, 1937.

WORCESTERSHIRE COUNTY COUNCIL.

ASSISTANT TUBERCULOSIS OFFICER (MALE).

The above-mentioned Council are about to appoint a whole-time Assistant Tuberculosis Officer and applications are now invited for this post.

Applicants must be registered Medical Practitioners between the ages of 25 and 45 years. Special experience and qualifications in Tuberculosis will be necessary, as work under the County Tuberculosis Scheme will form the chief part of the Officer's duties. He should have (1) at least three years' experience in the practice of his profession, (2) spent in general clinical work a period of not less than eighteen months, of which not less than six months have been spent in a Hospital as Resident Officer in charge of beds occupied by general medical or surgical cases, and (3) received special training, for a period of not less than six months, in the diagnosis and treatment of Tuberculosis and in Artificial Pneumothorax treatment. A Diploma in Public Health is desirable. The officer who is appointed will work under the supervision of the Chief Tuberculosis Officer.

The person appointed will be required to reside in the southern half of the County.

The salary will be £600, rising by £25 per annum to £700, with an allowance of £140 per annum for use of his own motor car The engagement will be subject to three months' notice on either side. The post is designated under the Local Government and Other Officers' Superannuation Act, 1922, and a medical examination will have to be passed by the successful candidate.

Applications (on forms to be obtained from the County Medical Officer, County Buildings, Worcester), accompanied by not more than three recent testimonials, must be received by 15th day of September, 1937, addressed to the County Medical Officer, County Buildings, Worcester.

Canvassing disqualifies, and neither the names of the members of the County Council nor of the Committee will be supplied

(*Signed*) C. H. BIRD,
Clerk of the County Council.

Shirehall, Worcester.
August 21st, 1937. (J. 133.)

COUNTY BOROUGH OF BLACKBURN

PUBLIC ASSISTANCE DEPARTMENT

Applications are invited from Medical Practitioners (male) for the appointment of a RESIDENT JUNIOR ASSISTANT MEDICAL OFFICER at QUEEN'S PARK HOSPITAL and INSTITUTION.

The Staff consists of a Resident Medical Officer, a Resident Assistant Medical Officer, a Consulting Surgeon, a Laboratory Assistant, and an X-Ray Attendant.

There is a separate Infirmary, a separate Mental Block, and a separate Sanatorium for Children, and there is opportunity for experience in all departments, including Medical, Surgical, and Midwifery cases. An X-Ray apparatus is installed.

The person appointed will be required to devote his whole time to the duties and also to act as may be directed by the Resident Medical Officer.

The appointment will be limited to a term not exceeding one year

Salary for the first six months at the rate of £150 per annum, and thereafter at the rate of £200 per annum, together with board, apartments, and attendance.

Applications, stating age, qualifications, and experience, accompanied by COPIES of not more than three recent testimonials, must be sent so as to reach the Public Assistance Officer, Public Assistance Offices, Cardwell Place, Blackburn, not later than 10 a.m. on September 8th, 1937.

CHAS S. ROBINSON,
Town Clerk

Town Hall, Blackburn,
August 20th, 1937.

THE ROYAL EASTERN COUNTIES INSTITUTION

for the Mentally Defective, Colchester.

ASSISTANT MEDICAL OFFICER (Male)

Applications are invited for the above post, from unmarried male Medical Practitioners not over 36 years of age Total beds over 1,700.

The medical man appointed will be stationed at the new Extension, Turner Village, and will be required gradually to assume responsibility for administrative work connected with that extension, which has at present over 400 beds. For that reason the commencing salary has been fixed at £400 per annum, together with furnished apartments, board laundry, and attendance. No deductions Previous specialisation in Mental Deficiency is not essential

A Research Department, with a Medical Director and other Staff, working under the Medical Research Council and the Rockefeller Foundation, is attached to the Institution. New Laboratories costing nearly £5,000 will be ready for occupation in October and there is every facility for research work.

Apply before September 8th, giving age, nationality, full details of qualifications, and copies of testimonials, to the Medical Superintendent, Royal Institution, Colchester.

LONDON COUNTY COUNCIL.

PUBLIC HEALTH DEPARTMENT.

Applications are invited for two vacant positions of PART-TIME OBSTETRICIAN AND GYNAECOLOGIST. *Appointments will be to the hospital service of the Council*, but in the first instance one of the appointed officers will be allocated to DULWICH and ST. GILES' (Camberwell) Hospitals and the *other to* ST. MARY, ISLINGTON, ARCHWAY (Highgate) and HIGHGATE Hospitals. Remuneration £600 a year and £600 a year respectively. Each officer will be responsible, *subject to the general administrative supervision* and control of the *medical superintendents*, for the whole of the obstetric and gynaecological work at the hospitals *to which he is attached* (there are no maternity beds at Archway and Highgate Hospitals). Each officer will be required to live within a reasonable distance of these hospitals and to visit them daily and as required (weekly and as *required* in the case of Archway and Highgate Hospitals).

Application forms containing further particulars (stamped addressed envelope *necessary*) from the Medical Officer of Health (S.D.6), County Hall, Westminster Bridge, S.E.1. Forms returnable by September 24th. Canvassing disqualifies.

LONDON COUNTY COUNCIL.

Applications invited from Medical Practitioners with appropriate qualifications for the appointment of ASSISTANT PATHOLOGIST in the Council's pathological service. Salary £650–£25–£800.

For appointments in the Group Laboratories candidates should have special experience in one or more branches of *pathology* in relation to the *diagnosis* and *treatment of disease*.

For the appointment at the Central Histological Laboratory advanced experience *in morbid histology* and *post-mortem* work is *essential*.

Forms of application and further particulars (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 2), County Hall, Westminster Bridge, S.E.1, returnable by September 24th, 1937.

Canvassing disqualifies.

LONDON COUNTY COUNCIL. INFECTIOUS HOSPITALS.

Applications invited from medical practitioners for appointment as ASSISTANT MEDICAL OFFICERS (Grades I and II) at various *hospitals* for infectious diseases. Salaries are:—Grade I, £350–£25–£425 a year; Grade II, £250 a year, both inclusive of board, lodging *and* washing. Candidates for Grade I positions should have had experience *in* a resident appointment in a general hospital, and must have had fever experience. Appointment as assistant medical officers, Grade II, are for one year *only* in first instance (renewable *for* a second year under certain conditions), but officers are eligible for *promotion* to Grade I after a minimum period of six months' service.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 2), County Hall, S.E.1, returnable by September 15th. Canvassing disqualifies.

THE KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION.

Applications are *invited from duly* registered medical practitioners for the posts of ASSISTANT RESIDENT MEDICAL OFFICER (male, single—*one year appointment*) at the following institutions:

(a) North Wales Sanatorium (247 beds for female pulmonary and male, female, and children non-pulmonary cases), Denbigh, North Wales.

(b) Glan Ely Hospital (196 beds for pulmonary and surgical tuberculosis in men, women, and children), Fairwater, near Cardiff.

Salary £200 per annum, *plus* maintenance.

Applications stating age, qualifications, experience, etc., together with copies of three recent testimonials, should reach the undersigned not later than Wednesday, September 15th, 1937.

D. A. POWELL,
Memorial Offices, Principal Medical Officer.
Westgate Street, Cardiff.
August 30th, 1937.

VICTORIA HOSPITAL, BURNLEY. (150 Beds.)

HOUSE SURGEON (male).

Applications are invited for the above post, which will become vacant on September 30th next. The appointment is for six months in the first instance, at a salary of £150 per annum, together with board, residence and laundry. At the end of this period, reappointment may be arranged for, and, if confirmed, the salary for the second six months will be at the rate of £200 per annum. Applications, with full details of qualifications and experience, and stating nationality, together with copies of recent testimonials, should be addressed to the undersigned forthwith.

J. L. WHEATCROFT,
Secretary.

CHESHIRE COUNTY COUNCIL.

CLATTERBRIDGE (COUNTY) GENERAL HOSPITAL, NEAR BIRKENHEAD. (300 Beds.)

JUNIOR RESIDENT ASSISTANT MEDICAL OFFICER.

Applications (male or female) are invited for the above appointment, *which falls* vacant on October 1st.

The appointment is for a period of six months at a salary of £200 per annum, together with the usual residential allowances.

The appointment may be renewed for a further period of six months.

There is a Non-Resident Medical Superintendent, a Resident Deputy Medical Superintendent, and a *Consulting Staff from Teaching Hospitals*.

Applications to be made on forms obtainable from the undersigned, and returned not later than September 15th, 1937.

24, Nicholas Street, IAN MACKAY,
Chester. County Medical Officer of Health.

CITY OF BIRMINGHAM.

Public Health Department.
Little Bromwich Hospital for Infectious Diseases.

JUNIOR RESIDENT MEDICAL OFFICERS.

Two Junior Resident Medical Officers (one male and one female) required. Candidates must be unmarried and must have held *previous* resident posts in General or Children's Hospitals.

Salary at the rate of £300 per annum, together with board, etc., valued at £150 per annum. These appointments are limited to twelve months.

The officers appointed will be required to pay to the Council all fees, allowances, and emoluments (other than the foregoing) received by them.

It is not feasible to attend classes for the D.P.H. in *conjunction* with these appointments.

Forms of application may be obtained from the Medical Superintendent, Dr. J. McGarrity, Little Bromwich Hospital, Birmingham, 9, and should be returned to him *on or* before September 15th.

The Council House, F. H. C. WILTSHIRE,
Birmingham. Town Clerk.

KENT COUNTY COUNCIL.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Resident Assistant Medical Officer at the Chatham Public Assistance Hospital (675 beds).

The salary is at the rate of £250 a year, with residential emoluments valued at £120 a year. A superannuation scheme will be *applicable* to the appointment and the successful candidate will be required to pass a medical examination.

The appointment is a whole-time one, and will be for a period of one year only, and not renewable.

Forms of application can be obtained from the Public Assistance Officer, Tonbridge Road, Maidstone, to whom applications must be sent by 10 a.m. on Monday, September 13th, 1937.

Sessions House, W. L. PLATTS,
Maidstone. Clerk of the County Council.
August 28th, 1937.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, WIGAN. (150 Beds.)

Wanted for twelve *months*, commencing October 1st, 1937, *RESIDENT MEDICAL and SURGICAL OFFICER and REGISTRAR*. Candidates must have *held* previous Resident appointments at a Hospital. Preference will be given to those possessing the F.R.C.S. *or* M.S. Degree. The salary is at the rate of £250 per annum, with board, residence and laundry. Applications, giving proof of registration and not more than three testimonials, to be sent to the undersigned as soon as possible.

A. STANLEY BRUNT,
General Superintendent and Secretary.
August 12th, 1937.

AYR COUNTY HOSPITAL. (Voluntary General Hospital.)

The Directors invite applications for the position of HOUSE SURGEON (male, one required). Salary £125 per annum, with board and residence.

Appointment to be for six months from Monday, September 13th.

Applications to be lodged with the subscriber not later than Wednesday, September 8th, 1937, along with copy testimonials.

Ayr County Hospital. JOHN J. GOUDIE,
August 30th, 1937. Secretary and Treasurer.

WESTMORLAND COUNTY HOSPITAL, KENDAL. (82 Beds.)

HOUSE SURGEON (male or female) required, October 1st. Appointment is for six months, renewable for a further six months. Salary £200 per annum, with board, residence and laundry. Applications, stating age, sex, nationality, and qualifications, with copies of three recent testimonials, to be addressed to the Hon. Sec., J. M. Somervell, not later than September 11th.

BURY INFIRMARY (LANCS). (127 Beds.)

APPOINTMENT OF HOUSE SURGEON.

A vacancy as above arises on the Resident Medical Staff and applications are invited for the post.

The Resident Staff consists of an R.S.O. and three other Resident Officers.

The appointment is for six months at a salary at the rate of £150 per annum, with board, residence and laundry, and the successful candidate will be expected to commence duties about September 20th.

Applications, stating age, qualifications, and nationality, together with copies of three recent testimonials, are to be forwarded to the undersigned as soon as possible, endorsed "House Surgeon."

Full particulars of duties may be had on application.

H. WILKINSON,
Superintendent.

WALSALL GENERAL HOSPITAL.

The Committee invite applications from Men or Women for the post of HOUSE SURGEON. Must have had previous experience in the administration of Anaesthetics. Candidates, who must be registered under the Medical Acts, must produce three recent testimonials. The appointment will be for six months. Salary at the rate of £150 per annum. The Hospital contains 145 beds and is equipped in all special departments.

Applications to be sent at once to the undersigned.

WALTER FRANCOMBE,
August 19th, 1937. House Governor.

ROYAL ISLE OF WIGHT COUNTY HOSPITAL, RYDE.

A vacancy having occurred in the office of HONORARY SURGEON to the Ear, Nose, and Throat Department, the Election Committee of the Governors will proceed to fill the appointment. Candidates must not be engaged in General Practice. Further details may be obtained from the Secretary, to whom applications must be addressed, and should be received not later than September 11th, 1937. Canvassing members of the Election Committee will be a disqualification.

A. S. GORDON,
Secretary.

WREXHAM AND EAST DENBIGHSHIRE WAR MEMORIAL HOSPITAL. (124 Beds.)

RESIDENT HOUSE SURGEON (male or female) required for Special Departments (Aural, Ophthalmic, and Casualty), to commence duty on October 1st. Appointment is for six months. Salary £150 per annum, with board and lodging.

Applications, stating age, nationality, experience, and qualifications, to be sent to the undersigned, together with copies of three recent testimonials, immediately.

LESLIE SPENCER,
August 30th, 1937. Secretary.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL. (260 Beds.)

Applications are invited for the post of RESIDENT ANAESTHETIST AND HOUSE SURGEON to the Ear, Nose and Throat Department, commencing immediately until December 31st, 1937, at a salary of £150 per annum, with board, lodging, and laundry. Candidates must be male and unmarried. Applications, accompanied by not more than three recent testimonials, should be sent to the undersigned at once.

A. H. DAFT,
Acting Secretary.

HARROGATE AND DISTRICT GENERAL HOSPITAL. (132 Beds.)

Applications are invited for the post of ONE HOUSE SURGEON and ONE HOUSE PHYSICIAN, to take up duties on October 1st for six months.

Salary to be at the rate of £150 per annum.

Candidates (male) must be of British nationality, unmarried, and possess registered qualifications.

Applications should be made as soon as possible on forms obtainable from the undersigned.

FRANK A. THROWER,
Secretary.

CHESHIRE JOINT SANATORIUM. (240 Beds.)

Applications are invited for the above post of THIRD ASSISTANT MEDICAL OFFICER (male). The salary will be at the rate of £250 per annum, with board, residence and laundry. Appointment for a period of twelve months.

Forms of application may be obtained from the Medical Superintendent, Cheshire Joint Sanatorium, Market Drayton, Salop.

WOOLWICH AND DISTRICT WAR MEMORIAL HOSPITAL,
Shooters Hill, London, S.E.18.

General Hospital—112 Beds.

RESIDENT SURGICAL OFFICER.

The Board of Management invites applications from suitably qualified male candidates for appointment as RESIDENT SURGICAL OFFICER. Applicants must have special knowledge of surgery. This appointment (which is recognized by the Royal College of Surgeons of England for the six months' training required of candidates before admission to the Final Examination for the Fellowship) will be for twelve months, with effect from October 1st, 1937, at a salary of £175 per annum plus board, residence, and laundry, and subject to extension for a further twelve months at £200 per annum if approved by the Board of Management.

The closing date for the receipt of applications, which should be made on the prescribed form (obtainable from the undersigned), is September 18th, 1937, and short-listed candidates will be required to meet the Appointments Committee on Thursday, September 23rd, 1937, at 4.45 p.m.

R. S. G. HUTCHINGS,
Secretary.

WEST LONDON HOSPITAL,
Hammersmith, W.6. (239 Beds.)

Required one HOUSE PHYSICIAN, one HOUSE SURGEON, and one HOUSE SURGEON (with Throat, Nose, and Ear duties). The duties of the House Physician include some work in the Children's Department, one House Surgeon will have some work in the Genito-Urinary Department, and the House Surgeon (with T., N., and E. duties) will also act as Resident Casualty Officer. These three appointments (males) are tenable for six months from October 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodgings, and laundry allowance. Candidates must be registered under the Medical Act.

Applications (which must be made on the printed forms obtained from me) must reach me not later than the first post on Thursday, September 16th. Selected candidates will be required to call upon such members of the medical staff as directed, to be in attendance at the Medical Council Meeting on Friday, September 24th, at 4.30 p.m., and the House Committee Meeting, at 5 p.m., the same day, when the appointments will be made.

H. A. MADGE,
Secretary.

WEST LONDON HOSPITAL,
Hammersmith Road, W.6 (239 Beds.)

Required, one RESIDENT ANAESTHETIST (male). The appointment is tenable until March 31st, 1938, subject to one month's notice on either side. Salary at the rate of £100 a year, with board, lodging, and laundry allowance.

Candidates must be registered under the Medical Act. Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Thursday, September 16th. Selected candidates will be required to call upon such members of the Medical Staff as directed; to be in attendance at the Medical Council Meeting on Friday, September 24th, at 4.30 p.m., and the House Committee Meeting, at 5 p.m., the same day, when the appointment will be made.

H. A. MADGE,
Secretary.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL,
Gray's Inn Road, W.C.1.

RESIDENT HOUSE SURGEON (MALE).

There will be a vacancy for a THIRD RESIDENT HOUSE SURGEON to enter on duty on October 1st, 1937. The appointment will be for a period of nine months: three months as Third House Surgeon, three months as Second House Surgeon, and three months as First House Surgeon. Remuneration at the rate of £75 per annum.

Applications, accompanied by copies of not more than three testimonials, should be sent to the undersigned as soon as possible.

JOHN H. YOUNG,
Secretary-Superintendent.

ELIZABETH GARRETT ANDERSON HOSPITAL, EUSTON ROAD, N.W.1.

Applications are invited from qualified women for the resident post of THIRD HOUSE SURGEON.

The appointment is for four months, with a possible extension for a further six months. Duties to begin October 1st, 1937. Salary at the rate of £50 per annum, with board, residence, and laundry. Further particulars can be obtained from the undersigned, to whom applications with copies of three testimonials should be sent on or before September 17th.

JEAN R. MURRAY,
Secretary.

THE HOSPITAL FOR SICK CHILDREN,
Great Ormond Street, London, W.C.1.

Applications are invited for the post of RESIDENT SURGICAL OFFICER, which becomes vacant on November 1st, 1937. Salary £200 per annum.

The appointment is tenable in the first instance for one year, but may be held for a period of two years, subject to annual re-election.

Candidates must be unmarried, possess a legal qualification to practise, and must have held a responsible hospital appointment at a general hospital.

Applications must be received by noon on Monday, September 27th, 1937, and candidates must be prepared to attend for interview at the hospital on Wednesday, October 6th, 1937, at 4.45 p.m.

Full details of the appointment and forms of application are obtainable from the undersigned.

HERBERT F. RUTHERFORD,
August, 1937 Secretary.

THE HOSPITAL FOR SICK CHILDREN,
Great Ormond Street, London, W.C.1.

A RESIDENT HOUSE PHYSICIAN (male) and a RESIDENT HOUSE SURGEON (male) are required. *Duties to commence on October 18th, 1937.*

The appointments are tenable for six months. Salaries at the rate of £100 per annum.

Candidates must be unmarried, possess a legal qualification to practise, and have held a responsible appointment at a general hospital.

Applications must be received by noon on Monday, September 27th, 1937, and candidates must be prepared to attend for interview by the Joint Committee, at 4.45 p.m. on Wednesday, October 6th, 1937.

Further particulars and forms of application are obtainable from the undersigned.

HERBERT F. RUTHERFORD,
August, 1937. Secretary.

THE PRINCESS BEATRICE HOSPITAL,
EARL'S COURT, LONDON, S.W.5.
(General Hospital, 81 Beds.)

HOUSE PHYSICIAN AND CASUALTY OFFICER (male or female) required for a period of six months as from October 1st, 1937; also CASUALTY OFFICER AND OBSTETRIC HOUSE SURGEON (male or female) required for a period of six months as from October 1st, 1937.

The following details apply to both posts. Salary at the rate of £110 per annum, with board, residence, and laundry (together with £10 to cover all duties during the six months relating to private patients). Previous residence experience desirable but not essential. Full particulars may be obtained from the Secretary-Manager, by whom applications, with copies of three recent testimonials, should be received not later than 9 a.m., September 14th, 1937.

THE PRINCESS BEATRICE HOSPITAL,
EARL'S COURT, LONDON, S.W.5.
(General Hospital, 81 Beds.)

RESIDENT SURGICAL OFFICER (male) required for a period of six months in the first place from October 1st, 1937, eligible for re-election. Salary at the rate of £200 per annum, with board, residence, and laundry (together with £25 to cover all duties during the six months relating to Private Patients). Previous resident experience and F.R.C.S. essential.

Full particulars may be obtained from the Secretary-Manager, by whom applications, with copies of three recent testimonials, should be received not later than 9 a.m., September 14th, 1937.

THE PRINCESS BEATRICE HOSPITAL,
EARL'S COURT, LONDON, S.W.5.
(General Hospital, 81 Beds.)

Applications are invited for the post of HONORARY ASSISTANT OBSTETRIC PHYSICIAN AND GYNAECOLOGIST to the above hospital. Applicants must be Fellows of the Royal College of Surgeons of England. Full particulars may be obtained from the Secretary-Manager, by whom applications, with copies of three recent testimonials, should be received not later than 9 a.m., September 14th, 1937.

THE WILLESDEN GENERAL HOSPITAL,
Harlesden Road, N.W.10.

Applications are invited from fully qualified and registered candidates (unmarried) for the appointment of a Resident Officer, to hold the appointment of CASUALTY OFFICER for a period of three months from October 1st, 1937, followed by a six months' appointment as HOUSE PHYSICIAN (total nine months).

Salary at the rate of £100 per annum.

Applications to be received by the Secretary not later than first post on Tuesday, September 14th, 1937.

August 25th, 1937.

ST. PETER'S HOSPITAL FOR STONE, ETC.,
Henrietta Street, Covent Garden, W.C.2.

The Office of HOUSE SURGEON will fall vacant on October 1st, 1937, and applications are invited from male candidates with previous experience in a similar office at a General Hospital. The salary offered is at the rate of £75 per annum, with board, lodging, and laundry.

At the expiration of six months' term of office, and subject to the recommendation of the Medical Committee, the House Surgeon is appointed Resident Surgical Officer for a further similar period. Candidates should therefore be prepared, if successful, to remain at the Hospital for twelve months in all.

Applications, accompanied by copies of testimonials, should be forwarded to reach the undersigned not later than the first post on Tuesday, September 7th, 1937.

BOLINGBROKE HOSPITAL, WANDSWORTH COMMON, S.W.11.
(135 Beds.)

Applications are invited for the post of RESIDENT SURGICAL OFFICER (male, unmarried).

The post is that of Senior Resident Officer, and the work being chiefly surgical preference will be given to candidates holding the F.R.C.S. qualification.

The appointment is for twelve months commencing on October 1st, 1937.

Salary £200 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before September 8th, 1937.

W. S. RANDOLPH BISS,
Secretary-Superintendent

THE ROYAL CANCER HOSPITAL (FREE)
(Incorporated under Royal Charter),
Fulham Road, London, S.W.3.

Applications are invited for the post of ASSISTANT RADIUM THERAPIST (full-time).

Applicants must be registered medical practitioners, who hold a Diploma in Radiology.

The appointment will be for one year (subject to renewal) commencing October 1st, 1937, at a salary at the rate of £500 per annum.

Applications, to be made on a form which will be supplied by the Secretary, together with copies only of three recent testimonials, should be sent to the Secretary not later than the first post Monday, September 13th, 1937.

CLEMENT COBBOLD, Secretary.

CENTRAL LONDON OPHTHALMIC HOSPITAL.
Judd Street, St. Pancras, W.C.1.

There is a vacancy for a PATHOLOGIST. Candidates must be duly registered Medical Practitioners and must be willing to attend the Hospital on three afternoons each week. The appointment is for one year (subject to re-election) and carries with it an Honorarium of £105 per annum.

Applications, with copies of not more than four testimonials, must reach the Secretary of the Hospital not later than September 11th.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd Street, St. Pancras, W.C.1.

Applications are invited for the post of ASSISTANT SURGEON. Candidates must be Fellows of the Royal College of Surgeons (England) or hold the degree of M.S. (London) in Ophthalmology, and must have held a post as Clinical Assistant for two years at least at a recognized Ophthalmic Hospital.

Applications, with copies of not more than four testimonials, must reach the Secretary of the Hospital not later than September 11th.

THE SALVATION ARMY.
The Mothers' Hospital, Lower Clapton Road, Clapton, E.5.

Applications are invited [illegible] an HONORARY [illegible] MOTHERS' HOSPITAL, members of the Royal College of Physicians and engaged in Consulting Practice.

Details of the appointment may be obtained from the Secretary-Superintendent, to whom 12 copies of the application, with three recent testimonials, should be sent by September 30th, 1937.

EDGAR DIBDEN,
Secretary-Superintendent

CITY OF LONDON MATERNITY HOSPITAL, CITY ROAD, E.C.1.

Applications are invited for the post of MALE ASSISTANT RESIDENT OFFICER for three months from October 1st. At the end of the period the candidate will, if satisfactory, be appointed Senior for three months at £100 p.a.

Forms of application, returnable not later than September 11th, may be obtained from the Secretary.

NORTHAMPTON GENERAL HOSPITAL.
(293 Beds.)

There will be vacancies on October 1st for the following eight appointments:

SENIOR RESIDENT MEDICAL OFFICER. The appointment will be in the first instance for a period of twelve months at a salary of £250 per annum. The successful candidate will be expected to combine certain supervisory duties with the clinical work of one of the posts advertised below, and applicants should state which of these posts is desired. Candidates must have held a responsible resident post, but administrative capacity is more important than outstanding clinical ability.

1. HOUSE PHYSICIAN.
2, 3, and 4. HOUSE SURGEONS (three appointments).
5. HOUSE SURGEON to the Maternity and Gynaecological Department.
6. HOUSE SURGEON to the Ear, Nose and Throat Department.
7 and 8. CASUALTY OFFICERS. First and Second.

Salaries (with the exception of the Senior Resident Medical Officer) will be at the rate of £150 per annum, with board, residence and laundry. Candidates, who must be duly qualified and registered, must be males and of British nationality.

The successful candidates (with the exception of the Senior Resident Medical Officer) will be elected for a period of six months and will be eligible for re-election for a further period of six months.

Applications, stating age, qualifications, etc., with copies of three testimonials, must reach the undersigned not later than the first post on Wednesday, September 8th, 1937.

S. C. W. DISNEY,
August 23rd, 1937. Secretary-Superintendent.

ROYAL DEVON AND EXETER HOSPITAL, EXETER. (260 Beds.)

HOUSE SURGEON (Male).

Applications are invited for this post, which becomes vacant on October 1st.

The appointment is for six months, but candidates are eligible for re-election.

Salary at the rate of £150 per annum, with board, lodging and washing.

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned on or before Tuesday, September 7th.

S. S. COLE,
Secretary and Manager.
August 20th, 1937.

ANCOATS HOSPITAL, MANCHESTER, 4.

This Hospital is recognized by the Royal College of Surgeons for its Surgical Practice.

HOUSE SURGEONS (General) required. To commence duty on October 1st. Two vacancies. Appointment for six months. Salary £100 per annum, with board, residence, laundry, etc.

Applications, stating age, qualifications, previous experience and full particulars, to be forwarded to the undersigned on or before September 8th, together with copies of three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. and Secretary.

ANCOATS HOSPITAL, MANCHESTER

ASSISTANT PATHOLOGIST, lady or gentleman, whole-time appointment—no private work allowed. Salary £300 to £350 per annum, according to experience; live out. The appointment is for twelve months in the first instance. Luncheon and tea provided.

Applications, stating age, experience, and full particulars together with three recent testimonials, to be forwarded to the undersigned not later than September 8th.

By order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. and Secretary.

THE LADY CHICHESTER HOSPITAL, HOVE, FOR FUNCTIONAL NERVOUS DISEASES
(60 Beds.)

SENIOR HOUSE PHYSICIAN required. Six months' appointment at £160 per annum all found. Also JUNIOR at £50 per annum. Valuable experience for Diploma in Psychological Medicine.

Duties to commence immediately. Applications, with testimonials, to be sent to the Secretary, Mr. P. F. Spooner, 33, West Street, Brighton.

August 21st, 1937.

COSSHAM MEMORIAL HOSPITAL, Kingswood, Bristol.

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER. Salary £100 per annum, with board and laundry—to remain for six months in the first instance. Applicants (male) should be of British nationality, fully qualified, and registered.

Applications, with copies of recent testimonials, to be sent to the Secretary.

BURY INFIRMARY (LANCS).
(127 Beds.)

RESIDENT SURGICAL OFFICER (MALE).

Applications are invited for the above post from those holding the Fellowship of one of the Royal Colleges of Surgeons.

The appointment is for a term of one year, with provision for an extension of a further twelve months, and the successful candidate will be expected to commence duties immediately.

Salary will be paid during the first twelve months at the rate of £200 per annum, and will be increased to £350 per annum during the second twelve months in the event of an extension of the appointment being agreed upon. In addition to this salary the post includes the provision of board, residence, and laundry.

Applications, stating age, qualifications, and nationality, together with copies of three recent testimonials, are to be addressed to the undersigned, and should be forwarded as soon as possible, endorsed "R.S.O."

H. WILKINSON,
Superintendent.

NORTH STAFFORDSHIRE ROYAL INFIRMARY, STOKE-ON-TRENT.
(390 Beds.)

HOUSE SURGEON (GENERAL).

The Committee invite applications for the above post.

Salary at the rate of £150 per annum, with board, residence, and laundry.

The appointment will be made for six months, renewable.

Previous hospital surgical experience essential.

Applications, stating age and experience, with copies of two recent testimonials, to be sent to the undersigned immediately.

By Order,
W. STEVENSON,
Secretary and House Governor.
August 30th, 1937.

NORTH STAFFORDSHIRE ROYAL INFIRMARY, STOKE-ON-TRENT.
(390 Beds.)

HOUSE SURGEON (ORTHOPAEDIC).

The Committee invite applications for the above post.

Salary at the rate of £150 per annum, with board, residence, and laundry.

The appointment will be made for six months, renewable.

Previous hospital surgical experience essential and Orthopaedic experience desirable.

Applications, stating age and experience, with copies of two recent testimonials, to be sent to the undersigned immediately.

By Order,
W. STEVENSON,
Secretary and House Governor.
August 30th, 1937.

NORTH STAFFORDSHIRE ROYAL INFIRMARY, STOKE-ON-TRENT.
(390 Beds.)

HOUSE SURGEON (CASUALTY).

The Committee invite applications for the above post—half duties in Casualty. Over 6,000 casualties per annum. Salary at the rate of £150 per annum, with board, residence, and laundry.

The appointment will be made for six months, renewable.

Eligible for the other resident posts as vacancies arise.

Applications stating age and experience, with copies of two recent testimonials, to be sent to the undersigned immediately.

By Order,
W. STEVENSON,
Secretary and House Governor.
August 30th, 1937.

HEREFORDSHIRE GENERAL HOSPITAL, HEREFORD. (150 Beds.)

Immediate applications are invited for the post of HOUSE SURGEON (male) in charge of Casualty and Ear, Nose and Throat Departments.

Salary at the rate of £160 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned.

T. W. UPTON,
Secretary.

BRADFORD CHILDREN'S HOSPITAL.

HOUSE PHYSICIAN (lady) required October 1st. Fully qualified. Salary £150, with board, residence, and laundry.

Applications, with recent testimonials and stating age, not later than September 15th to

J. W. LONGLEY, Secretary-Supt.

WARRINGTON INFIRMARY AND DISPENSARY.

The post of THIRD RESIDENT will fall vacant on October 1st, 1937, and applications are invited from male candidates, who must be duly qualified Medical Practitioners and unmarried. Salary at the rate of £150 per annum, with board, lodging, and laundry.

At the expiration of six months' term of office and subject to the recommendation of the Medical Board the Third Resident is appointed Second Resident (salary £175 per annum) and then Senior Resident (salary £250 per annum) for similar periods. Candidates should therefore be prepared, if successful, to remain at the hospital for eighteen months in all.

Applications, stating age and qualifications, accompanied by copies of three recent testimonials, should be sent in not later than first post on Tuesday, September 14th. Chosen candidates will be interviewed on Friday, September 17th.

By Order,
HENRY L. EOOT,
Superintendent and Secretary.
September 1st, 1937.

PEMBROKE COUNTY WAR MEMORIAL HOSPITAL,
Haverfordwest, Pembrokeshire.
(64 Beds, to be increased to 100 Beds.)

RESIDENT HOUSE SURGEON.

Applications are invited for the post of Resident House Surgeon (male, unmarried) from duly qualified registered Medical Practitioners with previous resident experience, to commence on October 1st, 1937. Salary £200 per annum, with residence (private bungalow), board, and laundry.

Applications, stating age and accompanied by copies of not more than three recent testimonials, to be sent to the undersigned at the above address not later than first post Monday, September 13th, 1937.

F. W. BARNETT,
House Governor and Secretary.

ROYAL BERKSHIRE HOSPITAL, READING.

The following Resident appointment will become vacant on October 1st, 1937.

RESIDENT MEDICAL OFFICER (male) at the Blagrave Branch Hospital and Assistant to Pathologist (combined appointment). To reside at and have charge of 64 beds at Branch Hospital and to work as Assistant in the Pathological Department of the main Hospital. (Previous experience in Pathology not essential.) The appointment is for six months, and candidates must be fully qualified and registered.

Remuneration at the rate of £150 per annum, with board, residence, and laundry.

Applications, stating age and experience, with copies of testimonials, to be sent to the undersigned on or before Saturday, September 11th, 1937.

H. E. RYAN,
Secretary and House Governor.

KENT AND SUSSEX HOSPITAL, TUNBRIDGE WELLS. (210 Beds.)

EAR, NOSE, AND THROAT DEPARTMENT.

Applications are invited for the appointment of HOUSE SURGEON (male) to the above Department; duties to commence September 6th. Previous experience desirable, but not essential. Duties to include those of Resident Anaesthetist. Salary £150 per annum, board, residence, and laundry in the hospital.

Applications, stating qualifications, together with certificate of registration and copies of not more than three recent testimonials, should be sent to the undersigned as soon as possible.

TOM B. HARRISON,
Superintendent-Secretary.

THE CHESTER ROYAL INFIRMARY.
(225 Beds.)

Applications are invited for the post of HOUSE SURGEON (male), to take up duty October 1st, 1937. Salary £150 per annum, with board, lodging, and laundry. The appointment is approved in connexion with the M.S. (London University) and F.R.C.S. (Eng.) Examinations. Application list closes September 15th, 1937. Application forms may be obtained from:

W. H. GRACE, M.D., M.R.C.P.,
Hon. Sec. Medical Committee.

TAUNTON AND SOMERSET HOSPITAL, TAUNTON.

TWO HONORARY ASSISTANT SURGEONS (resident sufficiently near the hospital to enable them to discharge their duties) will be elected by the Committee on October 4th.

Applications (endorsed "Assistant Surgeon") to be sent on or before the 25th instant to F. J. J. STACEY, Secretary.

Personal canvassing will disqualify.
September 4th, 1937.

THE ROYAL CRIPPLES HOSPITAL, BIRMINGHAM.

Applications are invited for the post of RESIDENT HOUSE SURGEON (male), vacant September 1st, 1937. Salary £200 per annum. The appointment, which is for a period of six months, is renewable on the discretion of the Medical Board, and is terminable by one month's notice on either side.

Candidates must be unmarried, and preference will be given to those with previous experience in General and Orthopaedic Hospitals.

Applications, with copies of three recent testimonials, to be sent not later than September 4th to the General Secretary, Royal Cripples Hospital, 80, Broad Street, Birmingham.

THE ROYAL HOSPITAL, WOLVERHAMPTON.
(Incorporated under Charter.)

HOUSE PHYSICIAN required for mid-September. The Hospital contains 300 beds, the usual special departments and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months, with a salary at the rate of £125 per annum, board, furnished rooms, and laundry provided.

Applications, with copies of testimonials, to the undersigned.

Wolverhampton. W. H. HARPER,
August 16th, 1937. House Governor.

PRESTON AND COUNTY OF LANCASTER ROYAL INFIRMARY.
(General Hospital, 405 Beds.)

Applications are invited for the post of HOUSE SURGEON (male or female) to the EYE, EAR, NOSE AND THROAT DEPARTMENT (Special Wards and Clinics).

Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, together with copies of recent testimonials, to be forwarded as soon as possible to Mr. John Gibson, Superintendent and Secretary, Royal Infirmary, Preston.

August 26th, 1937.

GREAT YARMOUTH GENERAL HOSPITAL.
(72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two appointments). Duties to commence at once.

Applicant must be male and unmarried. Salary at the rate of £140 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FREDK. L. GATFIELD,
Secretary.

THE ROYAL LIVERPOOL CHILDREN'S HOSPITAL.

There will be vacancies on October 1st next for ONE RESIDENT MEDICAL OFFICER and ONE RESIDENT SURGICAL OFFICER at the HESWALL BRANCH of the Institution (240 beds). The appointments will be for a period of six months. Salary in each case at the rate of £120 per annum. Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital Myrtle Street, Liverpool, 7, on or before Saturday, September 11th, 1937

HOVE GENERAL HOSPITAL, HOVE
(50 Beds.)

Applications are invited for the appointment of JUNIOR RESIDENT MEDICAL OFFICER (male). Salary £120 p.a., with board, apartments, and laundry. The successful candidate will be eligible to apply for the senior post when the latter becomes vacant. Applications, stating age, qualifications, and experience, together with three recent testimonials, to be forwarded to the undersigned immediately.

KENNETH C. BOOKER,
Secretary-Superintendent.

SWANSEA GENERAL AND EYE HOSPITAL

Applications are invited for the post of LOCUM HOUSE SURGEON to the E.N.T. and Ophthalmic Departments for a period of six to eight weeks, commencing September 14th. Salary £5 5s. per week, with board, residence, and laundry.

Applications, stating age, qualifications, experience, and nationality to be forwarded to the Secretary-Superintendent.

WHITEHAVEN AND WEST CUMBERLAND HOSPITAL.

HOUSE SURGEON required for October 1st. Six months' appointment. Salary at the rate of £150 per annum, with board, residence and laundry. Applications, with copies of three recent testimonials, to be sent to the Secretary.

GRAVESEND AND NORTH KENT HOSPITAL, GRAVESEND, KENT.
(120 Beds.)

JUNIOR HOUSE SURGEON AND CASUALTY HOUSE SURGEON.

The Committee of Management invite applications from fully qualified men for the above posts. Salary at the rate of £120 and £130 respectively, plus board, lodging, washing, and certain fees as perquisites.

The Junior House Surgeon is required to commence duties at once, also the Casualty House Surgeon. Applications, with one copy of three recent testimonials, to be sent to the undersigned immediately.

C. E. CHAPMAN,
Secretary.

ARGYLL AND BUTE DISTRICT MENTAL HOSPITAL, LOCHGILPHEAD.

Applications are invited for the post of RESIDENT ASSISTANT MEDICAL OFFICER (male). Commencing salary £300 to £350 per annum, according to previous experience and special qualifications. An additional £50 per annum will be paid if in possession of the D.P.M. Furnished apartments will be provided, with board and laundry.

The appointment will be subject to the provisions of the Asylum Officers Superannuation Act, 1909.

Applications, stating age and experience, accompanied by seven copies of testimonials, to be addressed to the Clerk of the Joint Board of Management, County Offices, Lochgilphead, not later than September 11th.

NEW KENT AND CANTERBURY HOSPITAL.
(181 Beds—4 Resident Appointments.)

Applications are invited for the post of HOUSE SURGEON (male) to the Special Departments (Ear, Nose and Throat, Ophthalmic and Genito-Urinary). Appointment is for six months, and duties will commence as soon as possible after September 6th.

Salary £125 per annum, with board, residence, and laundry.

Applications, together with copies of recent testimonials should be forwarded immediately to the undersigned.

S. T. WARD,
Secretary.

NEW SUSSEX HOSPITAL FOR WOMEN, WINDLESHAM ROAD, BRIGHTON.
(60 Beds.)

Applications are invited from medical women for the post of HONORARY SURGEON to the New Sussex Hospital. The Senior Assistant Surgeon is an applicant for the post, and in the event of her election an Assistant Surgeon will be required. Candidates should possess the F.R.C.S. or equivalent qualification.

Copies of three recent testimonials to be sent to the Secretary on or before September 18th.

Board Room, P. F. SPOONER,
Windlesham Road, Brighton. Secretary.

SOUTHEND-ON-SEA GENERAL HOSPITAL.
(235 Beds—7 Residents—Hon. Specialist Staff of 19 Members.)

Applications are invited for the post of HOUSE PHYSICIAN; duties to commence on October 1st, 1937. The appointment is for six months. Salary at the rate of £100 p.a., with board, etc., provided. Candidates must be registered (male) practitioners.

Applications, together with copies of two recent testimonials, should be sent to the undersigned not later than September 16th.

P. H. CONSTABLE,
Secretary.

HASLEMERE AND DISTRICT HOSPITAL,
Haslemere, Surrey. (62 Beds.)

RESIDENT MEDICAL OFFICER (British) required October 1st. Appointment six months, renewable. Salary at rate of £150 per annum, with board, residence, and laundry.

Applicants must be fully qualified, registered, and have had experience of Anaesthetics.

Applications, stating age and Medical School, to be sent not later than September 8th to C. O. Trew, Secretary.

HARTLEPOOLS HOSPITAL, HARTLEPOOL.
(96 Beds.)

Applications are invited for the post of HOUSE SURGEON (male). Salary £175 p.a., with board, residence, and laundry.

The appointment is for six months (subject to renewal). Duties to commence September 1st.

Applications, stating nationality, age, and qualifications, should be addressed to the undersigned.

NORMAN O. DEANS,
Secretary

YORK DISPENSARY.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (female), to commence duties as soon as possible.

The resident staff consists of two medical officers, whose duties are to visit and attend the sick poor in their own homes and to assist the honorary staff. Candidates must be duly qualified, registered, and unmarried. Some experience of the administration of anaesthetics is essential. Salary £175 per annum, with board, lodging, and attendance, and allowance for laundry.

Applications, with testimonials, to be sent on or before September 11th to:

JOHN C. PETERS,
4, New Street, York. Secretary.

KING GEORGE'S SANATORIUM FOR SAILORS, LIPHOOK, HANTS.

(Seamen's Hospital Society) For the Treatment of Pulmonary and Non-Pulmonary Tuberculosis.

ASSISTANT MEDICAL OFFICER (single, male or female) required as from October 15th for six months. Salary at the rate of £200 per annum in the first instance. Applications, with copies of not less than three testimonials, to be sent in on or before September 24th to the undersigned.

F. A. LYON,
Greenwich. Secretary, Seamen's Hospital
August 27th, 1937. Society, Greenwich, S.E.10.

NOTTINGHAM GENERAL HOSPITAL
(386 Beds.)

A HOUSE PHYSICIAN (male) is required at the above Institution. The appointment is for six months, with salary at the rate of £150 a year; with board, residence, and laundry. Applications, stating age, qualifications, and experience, together with copies of testimonials to be sent to the undersigned. Duties to commence on or about October 24th.

PETER M. MACCOLL,
House Governor and Secretary.

ROYAL SURREY COUNTY HOSPITAL, Guildford. (216 Beds.)

Wanted, October 1st, 1937, HOUSE SURGEON (male).

Six months appointment; recognized for F.R.C.S. Duties: General, Surgery, and Ophthalmic. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age and essential particulars, with copies of not more than three testimonials, to reach the Secretary-Superintendent not later than September 13th, 1937.

ST. MARY'S HOSPITALS, MANCHESTER.

Two HOUSE SURGEONS for the Whitworth St. West Hospital (Maternity) and one for the Whitworth Park Hospital (Gynaecological Dept.), each for a period of six months from November 1st next. Salaries at the rate of £50 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned on or before the 16th instant.

R. RATCLIFFE,
Secretary.

THE ROYAL INFIRMARY, SHEFFIELD.
(500 Beds.)

The Board of Management invite applications for the post of SENIOR CASUALTY OFFICER.

The salary attached to the post is £150 per annum, with board and residence. The appointment will be tenable for the residue of the period of six months from July 1st, 1937. This post is next in seniority to that of Resident Surgical Officer.

Applications, with copies of testimonials, to be sent to the General Superintendent and Secretary

August 20th, 1937.

PRINCESS ELIZABETH ORTHOPAEDIC HOSPITAL, EXETER.

Applications are invited for the post of RESIDENT HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. The appointment is for six months, commencing October 1st, with the option of extension for a period not exceeding a further six months.

Applications, stating age and experience, with copies of three recent testimonials, to be sent to:

P. MELHUISH,
Secretary.

VICTORIA HOSPITAL, BLACKPOOL.
(182 Beds.)

HOUSE SURGEON (male) required immediately. Appointment is for six months; salary at the rate of £200 per annum, with board, residence and laundry.

Applications, with copies of three recent testimonials, should be sent to the General Superintendent.

APPOINTMENTS—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE	CONTRACT PRACTICE—*(contd.)*	CONTRACT PRACTICE—*(contd.)*
ABERTYSSWG MEDICAL AID SOCIETY. *(Medical Officer.)*	LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL. *(Medical Officer.)*	MID-RHONDDA MEDICAL AID SOCIETY. *(Assistant Medical Officer.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
GILFACH GOCH, GLAMORGAN *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES *(All Friendly Society Appointments)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney N.S.W.	**VICTORIA** *(All Institute or Medical Dispensaries.)*	The Honorary Secretary, Victorian Branch British Medical Association, Medical Society Hall, Albert St., East Melbourne, Victoria.	**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association "Shell House," 205, St. George's Terrace, Perth, Western Australia.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec. Queensland Branch, British Medical Association, B.M.A. House, 225, Wickham Terrace Brisbane, B.17.				

September 1, 1937 By Order of the Council. G. C. ANDERSON, *Secretary.*

DERBYSHIRE ROYAL INFIRMARY, DERBY.
(General Hospital—362 Beds.)
Recognized under F.R.C.S. Regulations

Applications are invited (from single men) for the post of HOUSE PHYSICIAN.

Candidates must be qualified and registered under the Medical Acts.

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned.

Duties to commence September 20th, 1937.

ARTHUR TAYLOR,
Superintendent and Secretary.

August 23rd, 1937.

DURHAM COUNTY HOSPITAL.
(100 Beds.)

MALE HOUSE SURGEON required. Duties to commence October 1st, 1937.

Salary at the rate of £150 per annum, with board, residence, and laundry.

Appointment for six months, subject to renewal for similar period.

Applications, stating age, experience, and nationality, accompanied by three recent testimonials, should be addressed to the undersigned immediately.

NORMAN BROWN,
August 23rd 1937 Secretary.

EAR AND THROAT HOSPITAL, BIRMINGHAM, 3.

THIRD HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Salary at the rate of £150 per annum, with lunch on six week-days, and an allowance of £50 per annum in lieu of board and lodging.

Appointment for six months to commence as soon as possible.

Candidates are eligible for election to Senior posts. Facilities for training for D.L.O.

Applications and testimonials to be forwarded to the undersigned immediately.

W. H. LOMAS,
Secretary.

MANCHESTER ROYAL INFIRMARY.

RESIDENT CASUALTY OFFICER (Male).

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment.

Applicants must hold a Medical and Surgical qualification and be registered.

The appointment is for twelve months subject to the provisions of the bye-laws as to notice.

Salary is at the rate of £150 per annum, with allowance for laundry.

Applicants must state age and send twelve copies of their application and testimonials to the undersigned not later than 9 a.m. Thursday, September 9th, 1937.

By Order,
W. R. TINDALE,
General Supt. and Secretary.

August 23rd, 1937.

STOCKTON AND THORNABY HOSPITAL, STOCKTON-ON-TEES.
(140 Beds.)

SENIOR HOUSE SURGEON (male) required for a period of at least six months. Duties to commence on or about October 1st, 1937. Salary £175 per annum, with board, residence and laundry. Candidates must be duly qualified and unmarried. Applications, stating age, nationality, and experience, together with copies of three testimonials, to be sent to the undersigned.

J. WILKINSON,
Secretary.

PRESTWICH MENTAL HOSPITAL, MANCHESTER.

Required immediately LOCUM TENENT MALE MEDICAL OFFICER. The Hospital is a training school. Salary £7 7s. per week and all found.

Candidates must be unmarried and registered under the Medical Act. Appointment terminable by one week's notice on either side. Apply, stating age, hospital and other experience, qualifications, and full particulars to the Medical Superintendent as above.

CORNELIA AND EAST DORSET HOSPITAL, POOLE, DORSET.
(117 Beds.)

HOUSE PHYSICIAN.

Applications are invited (from single men) for the post of House Physician.

Period six months. Salary at the rate of £150 p.a., with usual emoluments. Re-appointment may be applied for, and if granted the salary is at the rate of £175 per annum.

Duties to commence October 1st, 1937.

The Hospital is recognised by the Royal College of Surgeons of England in connection with the Final Examination for the Fellowship.

Applications, stating age, nationality, experience and qualifications, together with copies of three recent testimonials (which will not be returned), should reach the undersigned at the Hospital immediately.

Preference will be given to applicants who have already held a Resident appointment in a Hospital.

E. S. FOLEY,
Secretary.

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(Advertisements continued on p. 80)

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Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. Roberts, 8, Moorgate Street, Rotherham

ROYAL HOSPITAL, RICHMOND, SURREY.

Applications are invited for the following posts which fall vacant on October 1st, 1937:

RESIDENT MEDICAL OFFICER (male)—£200 per annum.

SENIOR HOUSE SURGEON (male)—£150 per annum.

JUNIOR HOUSE SURGEON (male)—£100 per annum, with board, furnished apartments, and laundry. Candidates must be fully qualified, registered, and single. Form of application can be obtained from the Secretary-Superintendent.

WEST HERTS HOSPITAL, HEMEL HEMPSTEAD.
(114 Beds. 24 miles from Euston.)

SENIOR RESIDENT MEDICAL OFFICER required, to commence duties about August 1st Male unmarried preferred. Salary £150, with rooms, board and laundry.

Applications, stating essential particulars and enclosing copies of three recent testimonials, to be sent at once to:

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

KING EDWARD MEMORIAL HOSPITAL, EALING. (131 Beds.)

Applications are invited for the posts of:
RESIDENT MEDICAL OFFICER (male). Six months' appointment with possibility of re-election for a further period. Salary £275 per annum, with usual residential emoluments. Applicants must have had good experience (at least two years) in House appointments.
CASUALTY HOUSE SURGEON (male) (with which is combined the duty of deputising for the House Physician). Six months' appointment with possibility of re-election for a further period. Salary £150 per annum, with usual residential emoluments.
Applications, stating age, experience, and qualifications, and accompanied by copies of two recent testimonials, to be sent to the undersigned immediately.

R. A. MICKELWRIGHT,
House Governor.

HOUNSLOW HOSPITAL, STAINES ROAD, HOUNSLOW, MIDDLESEX.

APPOINTMENT OF RESIDENT PHYSICIAN AND CASUALTY OFFICER.

Applications are invited from registered medical practitioners (male) for:
Junior House Physician and Casualty Officer, salary £100 per annum with full board, etc., and extras
Applications, stating age, nationality, qualifications and previous experience, together with copies of three recent testimonials, should be forwarded to the Secretary, endorsed "Appointment."

MANSFIELD AND DISTRICT GENERAL HOSPITAL. (140 Beds.)

HOUSE SURGEON (Male) required. Duties to commence as soon as possible. Salary at the rate of £150 p.a., with residence, board and laundry. The appointment is for six months and is renewable. The staff consists of a Resident Surgical Officer and two House Surgeons. Applications, stating age, qualifications and nationality, accompanied by not more than three recent testimonials to be sent to the undersigned as soon as possible

C. J. ADAMS,
Secretary.

THE NATIONAL TEMPERANCE HOSPITAL, Hampstead Road, N.W.1.

Applications are invited for the following post—CASUALTY OFFICER (male). Salary £120 per annum, board, residence, and laundry allowance being provided.
The appointment is for a period of six months, as from October 1st. Preference will be given to those who have held resident posts. Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Wednesday, September 15th, addressed to the Secretary.

PRINCESS LOUISE KENSINGTON HOSPITAL FOR CHILDREN,
St. Quintin Avenue, W.10. (61 Beds.)

HOUSE PHYSICIAN (either sex) required for six months from October 1st, 1937. Salary at the rate of £120 p.a. for the first three months and £150 p.a. for the second three months, with board, residence, and laundry. Applications, with copies of three recent testimonials, must be submitted on a form to be obtained from the undersigned, and must reach him not later than Saturday, September 18th, 1937.

H. J. ELEY,
Secretary.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, PLAISTOW, E.13.

HONORARY DERMATOLOGIST.

The Committee will shortly proceed to the appointment of an Honorary Physician in charge of the Skin Department. Attendance on one afternoon only each week. Applicants should be graduates of a University and Fellows or Members of the Royal College of Physicians, London.
Applications should be addressed before September 13th in the first place to the undersigned.

A. ERNEST WILKES,
August 23rd, 1937. Secretary.

ROYAL LANCASTER INFIRMARY. (140 Beds.)

ONE SENIOR, salary £175 per annum, and two JUNIOR HOUSE SURGEONS (male, British, single). Salary £130 per annum, with board, residence and laundry, required for October 1st, 1937.
The appointment is for six months. Applications, with copies of testimonials, should be addressed to the Hon. Secretary, Royal Lancaster Infirmary, Lancaster.

DREADNOUGHT HOSPITAL, GREENWICH, S.E.10 (Seamen's Hospital Society).

Applications are invited for the non-resident post of RECEIVING ROOM OFFICER (male), for six months from October 18th. Salary £200 per annum, with lunch and tea. Hours of attendance week-days 9 a.m. to 5 p.m., Saturdays 9 a.m. to 12 noon. Applications, stating age, nationality, and experience of previous house appointments, accompanied by copies of testimonials, to be sent in immediately to the undersigned.

F. A. LYON,
August 26th, 1937. Secretary.

NATIONAL TEMPERANCE HOSPITAL, Hampstead Road, N.W.1.

Applications are invited for the post of HONORARY DERMATOLOGIST. Applicants should have the degree of Member of the Royal College of Physicians, or be graduates of a university. Twenty copies of applications, giving full particulars, with copies of three recent testimonials, should be sent to the Secretary by Wednesday, September 15th.

ROYAL FREE HOSPITAL, GRAY'S INN ROAD, W.C.1.

Applications are invited from duly qualified and registered *medical women for the following post*:
RESIDENT CASUALTY OFFICER
Duties to commence October 1st, 1937, for six months. Salary £150 per annum. Candidates must have held previous resident Hospital appointments. *Application forms may be had from the undersigned, and should be duly filled in and returned on or before September 13th, 1937.*

RICHARD T. BARTLEY,
Secretary.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL.

Applications are invited for the posts of HOUSE SURGEONS (2, male, unmarried) for a period of six months commencing October 1st, renewable for a further period of six months on the recommendation of the Medical Board. £150 per annum, with full board, quarters, and laundry. Applicants should be registered Medical Practitioners.
Applications, with copies of testimonials, should be sent to the House Governor, 234, Great Portland Street, W.1., not later than September 14th.

ROYAL NORTHERN HOSPITAL, Holloway, N.7.

Applications are invited for the following appointment:
HOUSE SURGEON, vacant on October 15th. The appointment is for nine months, six months as House Surgeon and three months as Casualty Officer. Salary at the rate of £70 p.a., with board, residence, and laundry. Applications, with copies of testimonials, to be sent by September 10th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER,
Secretary.

THE HOSPITAL FOR WOMEN, SOHO SQUARE, LONDON, W.1.

Applications are invited for the post of HONORARY CONSULTING PHYSICIAN to the In-Patient Department. Candidates must be Fellows or Members of one of the Royal Colleges of Physicians of the United Kingdom and engaged in Consulting practice only.
Applications should reach the undersigned, from whom further information can be obtained, not later than September 27th.

J. P. HEMING,
Secretary.

THE MANOR HOUSE HOSPITAL, GOLDERS GREEN, LONDON, N.W.11.

Applications are invited for the post of JUNIOR MEDICAL OFFICER. Salary at the rate of £200 per annum, with board residence. Candidates, male and unmarried, must be fully qualified and registered. Applications, stating full particulars and accompanied by copies of not more than three recent testimonials, should be addressed to reach the undersigned as soon as possible.

JAMES W. LINKHORN, F.C.C.S.,
Secretary.

THE SHEFFIELD ROYAL HOSPITAL. (350 Beds.)

Applications are invited for the post of SENIOR CASUALTY OFFICER. Salary £150 per annum, with board and residence. The post is next in seniority to the Resident Surgical Officer, and candidates (male) must have had some experience.
Applications, with copies of testimonials, to the Superintendent and Secretary.

COUNTY BOROUGH OF MERTHYR TYDFIL.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited from medical women (unmarried or widowed), under the age of 40, for the above post. The person appointed must be a registered Medical Practitioner, and registered in the *Medical Register* as the holder of a Diploma in Sanitary Science, Public Health, or State Medicine. Preference will be given to a candidate who:
1. has had at least three years' experience in the practice of her profession;
2. has held the appointment of Resident Medical Officer in a Maternity Department for a period of not less than six months;
3. has had not less than one year's continuous *experience in some branch of obstetric work.*
The duties will include School Medical Inspection; *Supervision of Midwives; attendance at Ante-Natal and Infant Welfare Centres;* and other Public Health duties as may from time to time be prescribed. The duties of the respective offices will be carried out under the general direction of the *Medical Officer of Health.*
The commencing salary will be at the rate of £500 per annum, rising by annual increments of £25 to a maximum of £600 per annum.
Applications, together with copies of three recent testimonials, must reach the undersigned on or before September 16th, 1937.

T. H. STEPHENS,
Town Hall, Merthyr Tydfil. Medical Officer of Health.
August 30th, 1937.

ST. BARTHOLOMEW'S HOSPITAL,

OFFICE OF OPHTHALMIC SURGEON.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, October 19th, 1937, at 4 o'clock in the afternoon, to elect an OPHTHALMIC SURGEON to the *hospital.*
Candidates, who must be Fellows of the Royal College of Surgeons of England, are required to lodge fifty copies of their applications and testimonials with the undersigned on or before Saturday, September 25th, 1937.

THOMAS HAYES,
August 21st, 1937. Clerk to the Governors.

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2. WEST COUNTRY.—DEATH VACANCY.—Old-established industrial PRACTICE Receipts av. £1,506 p.a. Panel about 1,000. Good accommodation.
3. MIDLANDS.—Well-established Panel and good middle-class country PRACTICE. Receipts av. £1,644 p.a. Panel 561. Excellent house.
4. LANCS.—TWO PRACTICES. Receipts av. £1,900 p.a. and £1,800 p.a. Panels, 1,000 and 540, respectively. May be sold together or separately, plenty of scope to increase
5. SOUTH MIDLANDS.—Country PRACTICE Receipts av. £870 p.a. Panel about 220, with good scope to increase. Good house.
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3. LANCS.—LARGE SEAPORT TOWN. Old-established PRACTICE. Receipts average £800 p.a., panel 650. Very fine house, garden, etc. Rent £75 p.a. Premium £800.
4. NEAR KENNINGTON, S.E.—Well-established PRACTICE. Receipts average about £500 p.a., including panel 500. House could be had or lock-up surgery arranged. Population dense. Premium one year's purchase.
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LANCS. — TOWN, OLD-ESTAB. Average £1,300 p.a. Select panel of 807. Scope for Surgery and X-Ray. Premium 1½ years' purchase. Nice house on rental, £70 p.a.—8.

LONDON, S.W.—AVERAGE £1,600 p.a. Panel 700. Old-estd. Premium £2,600 Good house in main road position.—9.

LONDON, S.E.—RESIDL. AVERAGE £700 p.a. Panel 600. Old-estd. Fees 3/6 to 10/6 Premium 1½ years' purchase. Corner house, 5 bed., etc., £1,200, or offer.—10.

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SUFFOLK.—Old-established Country PRACTICE, practically unopposed. Cash receipts last year £1,081. Panel 835 (yields £582 p.a.). Scope. Good house, 2 reception, 3 bedrooms, garage and nice garden. Rent £40 p.a. Premium—best offer.—No. 993.

NORTH WALES.—PARTNERSHIP (after short Assistantship) in old-established middle-class [illegible] Cash receipts last year £6,717 [illegible] Hospital. Income [illegible] to live in flat. Premium—1 5th share—1¼ years' purchase.—No. 952.

NEAR MANCHESTER.—Sound middle and working class PRACTICE. Average cash receipts £2,692 p.a. Panel over 2,500. Scope Detached corner house, 2 reception, 4 bedrooms, 3 Professional rooms, garage and garden. Premium—1¼ years' purchase.—No. 952.

MONMOUTHSHIRE.—Old-established Panel Contract, and Private PRACTICE in prosperous district. Cash receipts last year £1,400. Panel 1,200, plus Contract work, yields £1,230 p.a. Good house, 2 reception, 5 bedrooms. *Professional* rooms (separate entrance) and garage. Rent £40 p.a. Expenses low.—Premium—£2,000.—No. 970.

CHESHIRE/DERBYSHIRE BORDER.—Old-established PRACTICE in Country district. Cash receipts last year £700 (increasing). *Panel* 862. Great scope. Excellent house, 2 reception, 4 bedrooms, 3 Professional rooms (separate entrance), garage and good garden. Premium—£1,000.—No. 959.

LANCS TOWN.—Mixed-class PRACTICE. Cash receipts £1,010. Panel 1,050. Good house. *Premium*—1¼ years' purchase.—No. 951.

DERBYSHIRE.—Old-established mixed-class PRACTICE, near beautiful country and within easy reach of large town. Average cash receipts £1,100 p.a. Panel 970 and transferable appointments £200 p.a. Scope. Nice detached house, 2 *reception*, 6,7 bedrooms, garage and large garden. Freehold. Premium—1¼ years' purchase.—No. 991.

NORTH-WEST COAST.—Well-established PRACTICE in Seaside town. Cash receipts £500-£550 p.a. Panel 450. Modern flat to rent at £80 p.a. inclusive of rates. Premium—1¼ years' purchase.—No. 1,005.

NEAR MANCHESTER.—Very old-established mixed-class PRACTICE capable of much increase owing to building developments. Cash receipts last year £1,006. Panel 470. Nice detached house, 2 reception, 5 bedrooms, garage and large garden. Separate entrance to surgery. Price £650. Premium—Practice—1 year's purchase. Vendor retiring.—No. 875.

ASSISTANTS WANTED.—OUTDOOR.—MIDLANDS, LANCS AND YORKS TOWNS.—£400-500 p.a., with House and Car allowance. INDOOR. —LANCS, YORKS, MIDLANDS AND N.E. COAST.—£300-350 p.a., all found. Many vacancies. Details on request.

All communications to be addressed to the Branch Manager, BRITISH MEDICAL BUREAU, 33, CROSS STREET, MANCHESTER.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

TAVISTOCK HOUSE SOUTH
TAVISTOCK SQUARE, W.C.1

Telé. Address: Triform, Westcent—London.
Telephone: Euston {1644 / 1645

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful agency for the transaction of every description of Medical, Scholastic, and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult The Manager in all transactions requiring the services of a Medical Agent.
Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

REDUCTION IN FEES

In cases where the Bureau are sole Agents the commission in respect of any sale of goodwill, book debts, furniture, drugs, fittings and other effects (excluding sales of any freehold or leasehold property, or of practices, effects, etc., outside Great Britain) is limited to a maximum fee of Fifty Pounds.

FULL TERMS ON APPLICATION

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 EASTERN COUNTIES.—PARTNERSHIP in good middle-class Practice, £2,450 p.a., in county town. Panel 1,200. Good house (5 bedrooms), in perfect condition, to rent. Premium one-half share two years' purchase.

2 S. MIDLANDS.—PARTNERSHIP in Practice nearly £6,000 p.a., in residential country district. Panel about 3,000. Visits 3/6 to £1 1s. House, with garage and garden, to rent. Share worth £800—£1,000 p.a. at two and a-quarter years' purchase. Short preliminary Assistantship.

3 S. OF ENGLAND.—PARTNERSHIP in old-established Practice, about £3,500 p.a., in small country town under 100 miles from London. Panel over 2,000. Pleasantly situated house (5-6 bedrooms), garage and nice garden. Premium two-sevenths share two years' purchase.

4 MIDLANDS.—PARTNERSHIP in increasing Practice in pleasantly situated country town. Good appointments and panel. Visits 3/6 to £1 11s. 6d., medicine extra. Suitable house obtainable. Incoming partner must be good surgeon—English or Scottish—aged 30-35. Small well-equipped hospital. Share worth about £1,500 p.a. at two years' purchase.

5 NORTHERN IRELAND.—Middle and working-class PRACTICE, over £900 p.a., in suburb of important seaport. Panel nearly 1,200. Visits 2/6 to 10/-, without medicine. Well-situated house (5 bedrooms), garage, etc., to rent. Scope for increase. Premium £1,400.

6 S. MIDLANDS.—PARTNERSHIP in steadily increasing Practice, £2,500 p.a., in good town. Panel 1,846. Good house (3 bed and dressing rooms), to rent. Partner should be aged about 35, experienced in gynaecology, and preferably hold the F.R.C.S. or M.C.O.G. Premium one-third share two years' purchase.

7 N.E. COAST.—Old-established and easily worked middle-class PRACTICE, over £1,150 p.a., in seaport town. No panel. Residence facing sea, for sale. Premium (to include furnishings and fittings of consulting rooms, small X-ray plant, etc.), £1,000.

8 LONDON, N.W.—Increasing PRACTICE in growing district, 30 minutes from Piccadilly. Receipts last year, £764 (new appointment value £40 p.a. not included). Panel 560. No midwifery. Semi-detached double-fronted freehold corner residence (4 bedrooms), garage and garden, for sale. Scope. Premium £1,450.

9 KENT AND SUSSEX BORDER.—Old-established and steadily increasing PRACTICE in beautiful country district. Cash receipts, 1936, £628. Panel over 500. House (4 bedrooms, etc.), garage and good garden, main drainage, etc., to rent. Scope. Premium two years' purchase.

10 ISLE OF WIGHT.—PARTNERSHIP in well-established middle-class Practice of nearly £2,650 p.a. Panel 1,200. Visits 3/6 to £1 1s., medicine extra. House with 4 bedrooms, etc., garage and garden. Good society and sport of all kinds. Premium one-half share two years' purchase.

11 HOME COUNTIES.—Well-established and increasing PRACTICE in favourite town within 20 miles of London. Cash receipts last year £1,284. Chiefly run from main surgery. There is a Branch on rapidly developing new estate. Plenty of scope. Good introduction. Premium £2,000. Hospital.

12 N.E. COAST.—PARTNERSHIP (after preliminary Assistantship) in mixed Practice, about £3,300 p.a., in seaport town. Panel 2,600. A suitable house could be obtained. One-third share at first to suitable man at two years' purchase (or near offer), with option to increase to two-fifths in three years and to four-ninths later.

13 LONDON, W.1.—DEATH VACANCY.—SPECIAL PRACTICE in SKIN DISEASES. Cash receipts year ended 31st March, 1937, £1,815. Consultations two and three guineas. Accommodation for professional and residential purposes, if required, to rent.

14 HOME COUNTY.—PARTNERSHIP in practice averaging over £2,350 p.a. in attractive country district near the coast. Panel 1,400. Good house (5 bedrooms, etc., etc.) in excellent state of repair, with garage and large garden, to rent at £85 p.a. Premium one-half share £2,500.

15 S.W. OF ENGLAND.—PARTNERSHIP in practice averaging over £2,050 p.a. in beautiful country district. Panel 920. Charming old two-storied house (7 bedrooms) with garage and good garden, in all about two acres, to rent at £52 p.a. Premium one-half share two and a-quarter years' purchase to include share of book debts, drugs, surgery fittings, etc., etc.

16 S. COAST.—Well-established good middle-class non-dispensing PRACTICE in residential town and health resort. Receipts 1936, £940. No panel or midwifery. Fees mostly 10/6 and 7/6. Nice house (4 bedrooms) with garage and garden, for sale. Scope. Premium £1,500.

17 S.E. COAST.—PARTNERSHIP in old-established Practice, averaging £4,100 p.a. in growing resort. Panel 3,000. Modern corner house (3 bedrooms, etc.) for sale or to rent. Premium for one-fourth share, two years' purchase.

18 W. OF ENGLAND.—Non-panel PRACTICE in an inland watering place. Cash receipts average £830 p.a. House or flat could be obtained Premium one and a-half years' purchase.

19 ISLE OF WIGHT.—Well-established PRACTICE averaging nearly £1,200 p.a. in seaside resort. Panel over 725. Good corner house (5 bedrooms) with central heating. Garage and small garden for sale. Good scope Premium two years' purchase.

20 SUFFOLK.—Old-established country PRACTICE about £1,100 p.a. Panel 832, returning for 1936, £582. Good house (3 bedrooms), garden and garage. Rent £40 p.a. Premium one and three-quarter years' purchase or near offer.

21 LONDON, E.—Old-established PRACTICE of £1,793 p.a. in populous district. Panel 2,500. House (6 bedrooms, etc.), to rent. Premium two years' purchase.

22 S. OF ENGLAND.—PHYSIO-THERAPY PRACTICE of £1,000 p.a. in an important town. Fees, 10/6 to £1 1s. Premium £1,250 (including certain equipment)

23 N. WALES WATERING PLACE.—PARTNERSHIP in old-established Practice of £6,000 p.a. Panel 2,600. Nice flat with garage. Welsh must be spoken. Premium for one-fifth share one and a-half years' purchase.

24 E. ANGLIA.—PARTNERSHIP in an old-established Practice in country district. Cash receipts year ended 30th June, 1937, £3,321. Panel 1,400. House to rent at £30 p.a. One-third or two-fifths share at first.

25 E. ANGLIA.—PARTNERSHIP in an old-established Practice of £2,800/£2,900 p.a. in prosperous country district. Panel 1,530. Double-fronted house (6 bedrooms), garage and garden. Freehold for sale or to rent. Premium for one-third share one and three-quarter years' purchase.

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Practices and Partnerships for Disposal (continued).

26 S. MIDLANDS.—PARTNERSHIP in old-established Practice, averaging £1,369 p.a., in good town. Panel about 900. Excellent large self-contained flat (4 bedrooms, etc.), to rent. Premium for one-half share £1,400, with succession to whole practice in three years.

27 LONDON, W.C.—Old-established mixed PRACTICE, £2,360 p.a., in desirable part. Panel over 3,000. No midwifery. Well-situated residence to rent on lease. Great scope. Premium, to include lease, goodwill, some furniture and fittings, etc., £5,000.

28 LONDON, E.—Middle-class PRACTICE of over £2,400 p.a., in outlying district. Panel 2,870. House in good repair. Garage and garden. Freehold for sale. Premium two and one-quarter years.

29 W. OF ENGLAND.—PARTNERSHIP in old-established Practice of £6,600 p.a. in a beautiful country district. Panel 4,500 and appointments worth £1,325 p.a. Centrally situated house (5 bedrooms), for sale. Premium for one-fifth share, £2,750.

30 MIDDLESEX.—PARTNERSHIP (with preliminary Assistantship) in a steadily increasing Practice in a very good residential district on the Thames. Cash receipts, 1935, £4,844; 1936, £5,465; 1937, £6,264. Panel 2,700 and appointments £727 p.a. Premium for one-fifth share two and a half years' purchase.

31 N.E. COAST.—Old-established and easily worked middle and better working-class PRACTICE, averaging over £1,150 p.a., in seaport town. No panel—a few contracting out-patients. Visits 5/- to 15/-. Rent of consulting rooms, £26 p.a. A suitable residence could be obtained. Good scope, much building going on. Premium £1,200 (contents of consulting rooms, including X-ray plant and electrical apparatus, about £130).

32 LONDON, S.E.—PRACTICE of about £500 p.a. Panel 533. House with surgery accommodation to rent. Premium one year's purchase, or offer.

33 W. OF ENGLAND.—Country PRACTICE doing about £1,400 p.a., in picturesquely situated village. Panel over 600. Good stone-built slate roof house (4 bedrooms, dressing-room, etc.), garage and charming garden, about ¾ acre, for sale. Hunting, fishing, shooting. Premium £2,800.

34 LONDON, W.2.—Old-established PRACTICE in residential district. Receipts last year, £1,440. Panel 1,000, about. Good house to rent at £130 p.a. Premium two years' purchase.

35 MID-DEVON.—Increasing Country PRACTICE, about £800 a year, in delightful part. Appointments and panel return over £350 p.a. Excellent house (6 bedrooms, dressing-room, etc.), in 1¼ acres of grounds. Separate surgery accommodation. Electric light and main water. Garage and stabling. Freehold for sale. Scope. Premium £1,200.

36 DEATH VACANCY.—SOUTH WALES.—Panel and Contract PRACTICE returning about £1,550 p.a. Large compact residence (6 bedrooms), in excellent condition, with two garages and pleasure and kitchen gardens, to rent.

37 COUNTY TOWN, within 65 miles of London.—PARTNERSHIP in Practice averaging between £2,300 and £2,400 p.a. Panel about 2,000. House containing 6 bedrooms, for sale or rent. One-third share (after preliminary Assistantship) at one and three-quarter years' purchase, or near offer.

38 LONDON, E.15.—Old-established PRACTICE averaging £1,670 p.a., in populous suburban district. Panel 1,990. Small house in excellent repair. Rent £50 p.a. Good scope. Premium two and a quarter years' purchase.

39 S. MIDLANDS.—PARTNERSHIP (short preliminary Assistantship) in Practice, over £5,000 p.a., in first-rate town. Panel nearly 5,000. House with 4 bedrooms, garage and garden, to rent. One-fifth share at first at two years' purchase.

40 LONDON, S.E.—Old-established and increasing PRACTICE of £2,500 p.a. in suburban district. Panel 2,000. Detached double-fronted house (5 bedrooms, etc.), garage and garden. Freehold for sale. Premium two years' purchase.

41 S. MIDLANDS.—Old-established PRACTICE of over £1,000 p.a. in beautiful country district on Bucks and Northants borders. Panel 536. Attractive house (6 bedrooms, etc.), Freehold for sale, or rent. Premium two years' purchase.

42 S. OF ENGLAND.—PRACTICE of about £300 p.a. carried on by a medical woman in a cathedral town. Panel 100. House (2 bedrooms, etc.), to rent. Premium £500.

43 AUSTRALIA.—Old-established PRACTICE of £1,400 p.a., in agricultural township. Good house (3 bedrooms, etc.), for sale. Premium £1,600 and £250 for X-ray plant.

44 MIDLANDS.—Old-established PRACTICE in beautiful country district. Cash Receipts last year £1,280, including appointments worth about £60, and a panel between 650 and 700. Visits 2/6 to £1 1s. without medicine. Nicely situated house (4 bedrooms, dressing-room, etc.), with nice garden and two garages. Rent about £80 p.a. Premium two years' purchase.

45 N. WALES BORDER.—PARTNERSHIP (with early succession) in old-established County Practice, about £2,500 p.a., in important town. No panel. Surgery premises could be purchased or rented. The private residence is available if required. A share up to one-half would be sold at first with early succession. Premium two years' purchase.

46 DEATH VACANCY.—ESSEX SUBURB.—Receipts average nearly £850 p.a. Panel 423. Semi-detached house (4 bedrooms). Price £800 freehold. Reasonable offer accepted.

47 LONDON, S.W.1.—SPECIAL PRACTICE for catarrhal conditions, nasal catarrh, hay fever, asthma, etc., etc., about £1,000 p.a., in commanding position in Grosvenor Place. Consultations 1-3 guineas. Special terms for series of [illegible] accommodation to rent at £100 p.a., [illegible]. Scope. Premium one and a-half years' purchase.

48 SEASIDE TOWN WITHIN AN HOUR OF LONDON.—Very old-established PRACTICE. Receipts average £625 p.a. Panel about 300. Nice detached house (5 bedrooms), with garage and garden, for sale or rent. Good scope. Premium £1,000.

Purchasers can raise additional capital for the purchase of approved practices or shares.
Particulars will be forwarded on application.

RELIABLE LOCUMS AND ASSISTANTS ARE URGENTLY REQUIRED.

All communications to be addressed to The Manager.

SCOTTISH BRANCH, 21, Alva Street, Edinburgh, 2

Manager: W. M. SCOTT
Telephone: Edinburgh 23959.

FOR DISPOSAL

A. MIDLANDS.—PARTNERSHIP in industrial town. Preliminary Assistantship. Receipts approximately £3,500. Panel 3,500. One-fourth to one-third share at first at two years' purchase. Suitable house may be rented.

B. EDINBURGH.—Receipts £800. Panel 1,000. Suitable house for sale. Premium—Practice and house, £2,300.

C. LONDON, N.—CONSULTING ROOMS with SMALL NUCLEUS in large residence along with, if required, part of the house. Excellent opportunity for Doctor to build up practice. Moderate rent.

For further details apply The Manager, 21, Alva Street, Edinburgh.

LOCUMS AND ASSISTANTS REQUIRED IMMEDIATELY.

Terms on which the business of the Branch is transacted will be submitted on application to the Branch Manager, to whom all communications should be addressed.

BOVRIL MEDICAL AGENCY, LTD.

ALDINE HOUSE,
10-13, BEDFORD STREET, STRAND, LONDON, W.C.2.
Telegrams: BOVMEDICAL, LESQUARE, LONDON. Telephone: TEMPLE BAR 1616 (3 Lines).
Chairman and Managing Director, Dr. J. FIELD HALL.

The maximum commission payable on the sale of any Practice or Partnership in Great Britain placed exclusively in the hands of this Agency is £50 (fifty pounds), which sum covers goodwill, drugs, surgery fittings, fixtures and furniture, instruments and book debts, but not house property. Schedule of Terms will be forwarded on application.

Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.
No charge is made to Principals for the introduction of Locum Tenens or Assistants.

1. SURGICAL OPENING.—MIDLANDS COUNTRY TOWN.—A share representing about £1,500 p.a., is offered in an exceptionally sound PRACTICE, owing to the retirement of one of five partners. Total receipts about £9,000 p.a. Panel over 3,500 patients. Fees from 3/- upwards. The ingoing partner, who can choose his own residence, must be able to undertake major surgery. Premium 2 years' purchase.
2. LONDON.—Outlying Northern Suburb.—PARTNERSHIP—A one-third share is available in a rapidly expanding Practice. Receipts for past three years are approximately £1,924-£2,900 and £3,550. Panel of 2,354 patients. Fees 2/6 and 3/6—visits 3/6 upwards. Midwifery about 40/50 cases per annum, minimum 4½ guineas. Considerable scope for further increase. Ingoing partner must be well experienced and have held Hospital appointments, be interested in medicine and children, and, in addition, be a good anaesthetist. Short preliminary assistantship.
3. LANCS.—High-class Seaside and Residential Town.—Easily worked old-established PRACTICE for sale. Gross cash receipts about £1,100 p.a., including a panel of about 325 patients. Fees 3/6 to 10/6. Visits 5/- to 21/-. Midwifery about 12 cases p.a. Minimum 5 guineas rising to 15 guineas. Mostly non-dispensing. Low expenses. Suitable house available with consulting and waiting rooms, 2 reception, 3 bedrooms and a maid's room and box room. Large garden and garage. Leasehold for sale or would be rented. Premium 1¾ years' purchase. There is stated to be good scope for increase for an energetic man.
4. CENTRAL LONDON.—Better-class PRACTICE averaging about £500 p.a., for past 3 years, starting from practically nil 4 years ago. Panel 280, increasing. Ground-floor flat of 7 rooms and 2 bathrooms on rental. Unavoidably neglected. Scope for increase. Premium £550.
5. SUSSEX.—ATTRACTIVE COUNTRY DISTRICT NEAR SEA.—PARTNERSHIP.—A one-fourth share is offered (after a preliminary assistantship) in an old-established and expanding Practice. Gross cash receipts for 1936 were about £3,300 and for the past 8¾ months approximately £2,700. Panel of 1,300 patients. Appointments worth over £300 p.a. Maisonette available or Senior partner might build new house. Premium 2 years' purchase.
6. ESSEX.—PARTNERSHIP offering surgical prospects after short preliminary assistantship.—ONE FOURTH SHARE to commence in well established practice averaging about £5,000 p.a. Panel of 2,300 patients. Suitable house, with 5 bedrooms, etc., can be rented at £60 p.a. Premium 1¼ years' purchase.
7. OPHTHALMIC PRACTICE for sale in a capital Australian City.—Gross cash receipts approximately £2,000 (Australian). Good consulting rooms can be rented at £180 p.a. Further details on application.
8. PHYSIO-THERAPEUTIC PRACTICE with scope for *X*-ray work in large town. ONE HALF SHARE available. Receipts over £2,000 p.a.
9. WEST END PRACTICE.—Death Vacancy—Skins—Genito-Urinary—V.D., Electro-Therapy, etc. Gross cash receipts for past 12 months about £1,815. Fees 2 and 3 guineas. Suitable accommodation available. Premium by arrangement.
10. NORTH-WEST COAST.—Well-established PRACTICE, with seaside town and country work, producing £1,299, including panel and appointments worth about £400 p.a. Suitable house with 3 bedrooms, etc., garden, garage. Rent £50 p.a. Sport of all kinds. Premium only £1,250 for quick sale.
11. NORTH-EAST COAST.—Well-established non-panel PRACTICE, averaging about £800 p.a., but capable of extension as considerable building is in progress. Very good house, with 6 bedrooms, etc. Price £1,500. Premium 1¼ years' purchase.
12. SOUTH COAST.—PARTNERSHIP.—A ONE-HALF SHARE in good middle and upper-class practice producing about £2,550 p.a. Panel of 1,300. Fees 3/6 to 21/-. Suitable house can be rented at £65 p.a. Easily worked, and scope for increase. Premium 2 years' purchase.
13. NORFOLK AND SUFFOLK BORDERS.—A TWO-FIFTHS SHARE, with increase to one-half, is offered in an old-established practice with considerable scope for increase. Receipts approximately £3,300, with panel of about 1,400. Low expenses. Good house available.
14. DEVON COUNTRY.—Old-established PRACTICE producing about £800 p.a. including about £310 from panel of 428 patients. Freehold house for disposal containing 2 reception rooms, lounge hall, 6 bedrooms, waiting room, consulting room, etc., 1¼ acres of garden, garage for 2 cars and stabling. Freehold £2,600. Premium £1,200.
15. LANCS.—Suburb of large town. PRACTICE producing about £800 p.a. with panel of 467 patients. Suitable house on rental at £90 p.a. inclusive, Stated to be scope for increase. Premium £1,100.
16. LONDON, S.E. 11.—Old-established working class PRACTICE producing approximately £500 p.a.. Panel of about 500 patients. Can be worked as lock-up. Premium 1 year's purchase or any reasonable offer accepted.
17. YORKS.—LARGE TOWN.—Well-established better working-class PRACTICE. Receipts for last 12 months about £1,176 with Panel of 1,150 patients approximately. Fees, minimum 2/6 with visits from 3/6 to 7/6. Freehold house for disposal at £900 containing 3 bedrooms, 2 living rooms, surgery, waiting room, etc. Vendor wishes to specialise.
18. SURREY.—PLEASANT TOWN.—PRACTICE produced for past 12 months about £1,280 with a Panel of 800 patients. Fees 3/6 upwards, with visits from 5/- upwards. Midwifery 3 to 10 gns., about 15 cases per annum. Vendor has to give up owing to ill-health. Premium £2,000.
19. EASTERN COUNTY AND MARKET TOWN.—HALF-SHARE PARTNERSHIP in Practice established some 100 years owing to retiral of junior partner. Average cash receipts over £2,400 p.a., of which over £700 comes from Panel and P.A.C. Suitable house available on rental. Ingoing partner should not be more than 30, preferably have a degree and some hospital experience.
20. ASSISTANTSHIP—with a view to a PARTNERSHIP SHARE to produce about £1,100 p.a., in a well-established Practice. Ingoing man must be young, have had considerable hospital experience, and preferably held an Ophthalmic H.S. He should be married or engaged, and a Protestant. Will applicants please give full details of experience, etc.
21. DEVON, SOUTH COAST—A well-established good-class entirely private PRACTICE producing for the past 12 months about £1,000. Panel could be had if desired. Fees 2/6, 3/6, 5/- and 7/6, with a few visits up to 21/-. Non-dispensing. Suitable house containing consulting room, 2 reception rooms, 6 bedrooms, for sale. Freehold £1,400. Partnership introduction. Would be suitable for ex-I.M.S. or similar.
22. DEVELOPING NORTHERN SUBURB.—A 3/8TH SHARE is offered in a well-established and growing Practice. Receipts for 12 months to 1/4/37 amounted to about £5,200, including about £80 from appointments and a Panel of some 5,300 patients. There is a choice of houses available.
23. LANCS.—SUBURB OF LARGE TOWN.—PRACTICE established for 10 years—gross cash receipts for year ended 31/3/37 amounted to about £800, with an increasing Panel of some 470 patients. Fees 2/6 and 3/6, with visits 3/6 and 5/-. Suitable house with good accommodation and separate surgery available on lease at £60 p.a. Premium £1,100, plus good debts, drugs and surgery equipment at valuation. Vendor giving up owing to ill-health.
24. WEST COAST.—Well-established PRACTICE producing about £1,900 p.a., including Panel of 1,450 patients which gives £820 p.a. and one or two small appointments. Visits 3/6 to 12/6. Consultations 3/6, medicine extra. There is a Cottage Hospital, purchaser would get on the staff. There is stated to be scope for surgery. Suitable house on rental at £50 p.a., with rates of £26 p.a. Accommodation is ample, and consists of waiting and consulting room, dispensary with separate entrance, 2 reception, 7 bedrooms and billiard room, half-acre of garden and garage for 2 cars. Premium 1¼ years' purchase.
25. LONDON, E.2.—Lock-up PRACTICE established 80 years for disposal. Income about £800-£900 p.a., with Panel of about 1,150 patients. Fees 2/6 and 3/6. Visits from 3/6. Suitable accommodation available consisting of consulting room, dispensary, waiting room, the remainder being sub-let for £280 p.a. Rent and rates £230 p.a. Premium 2 years' purchase to include about £150 fittings, fixtures, drugs, etc.
26. CITY PRACTICE.—Lock-up, hours 10-1 and 5.30-6.30, producing about £1,000 p.a., including £200 from Panel and appointments. Suitable accommodation available.
27. BAYSWATER.—PRACTICE, established some 65 years for disposal. Gross receipts about £1,440 p.a., with 1,000 Panel patients. Suitable house on lease at £130 p.a. Premium 2 years' purchase.
28. SURGICAL OPENING.—WITHIN 50 MILES OF LONDON.—A £1,000 share is offered to a FIFTH PARTNER in an old-established Practice. The patients comprise all classes and there is little visiting done under 10/6. Ingoing partner would do all surgery, but must be prepared to do ordinary G.P. as well. Choice of houses. Applicants must be 28-40, preferably hold a degree and must have their English Fellowship. Premium 2 years' purchase.
29. LONDON, S.W.—Old-established PRACTICE producing £1,500 p.a., with panel of 1,266 patients for disposal. Appointment and small club bring in about £85 p.a. House available contains Professional accommodation, reception room and 3 bedrooms and maids' room, bathroom. For sale or might be rented. Premium £3,000.
30. NORTH-WEST COAST.—SEASIDE TOWN.—CONSULTING PRACTICE FOR A PHYSICIAN.—Established by vendor (who now wishes to come to London) 4 years ago. Receipts for last year stated to be £1,320 Minimum fee 2 gns. Suitable rooms available at inclusive rental of £64 p.a. Purchaser can choose his own residence and should hold the M.D. or M.R.C.P. Premium 1¼ years' purchase on actual receipts for first year.
31. HAMPSHIRE.—COUNTRY PRACTICE.—Old-established PRACTICE held by vendor for past 7 years. Gross cash receipts stated to average £740 p.a. Panel of 472. Appointments worth about £130 p.a. Fees 3/6 upwards. Pleasant house containing 2 reception, 5 bedrooms, etc., Professional accommodation. Good garden and garage. Rent £55 p.a. Prem. £1,250.
32. LONDON, SOUTH-EAST.—Middle-class PRACTICE held by vendor nearly 30 years, averaging over £700 p.a. Panel of 576 and one appointment worth £25 p.a. Roomy house with good garden and garage. Leasehold for sale.
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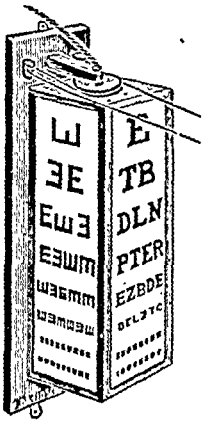
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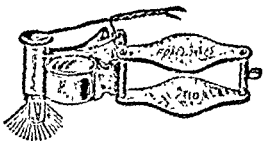
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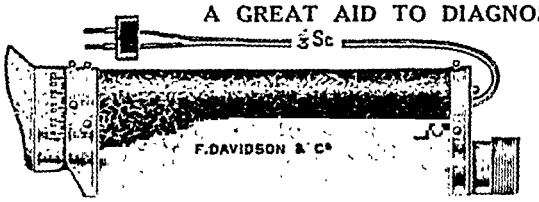
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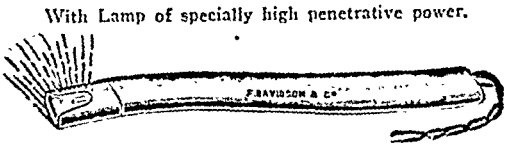


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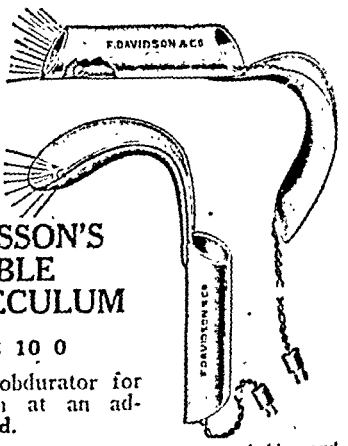


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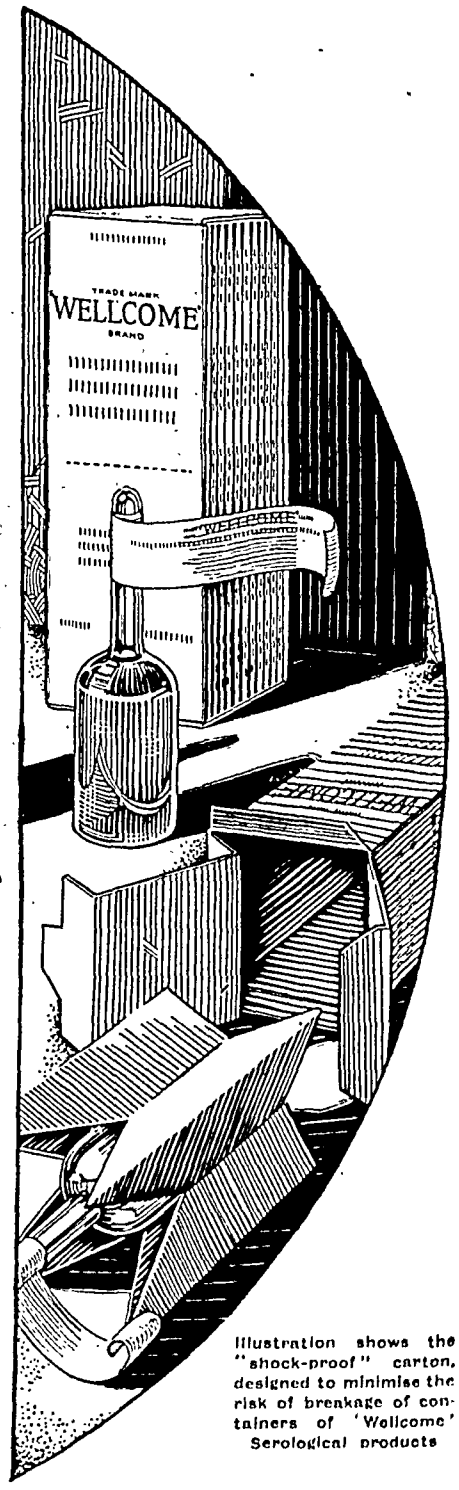


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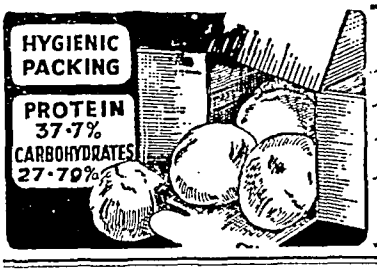
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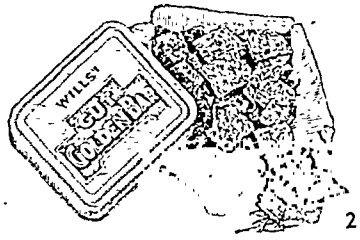
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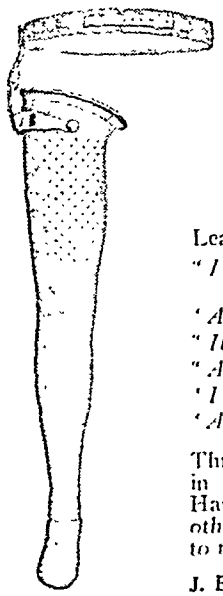
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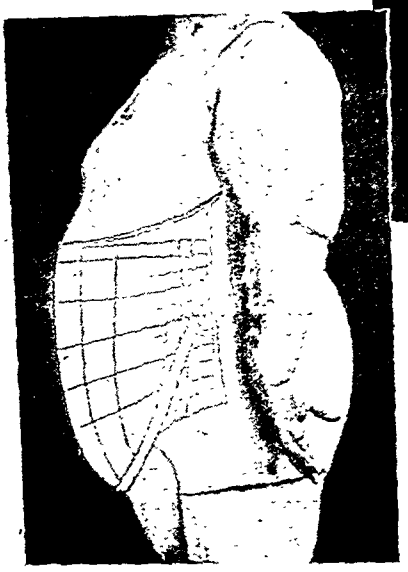
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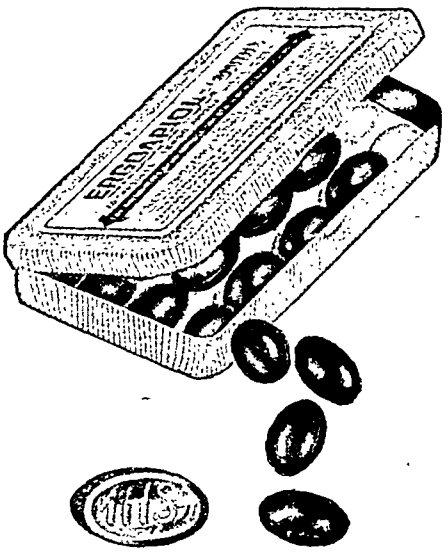
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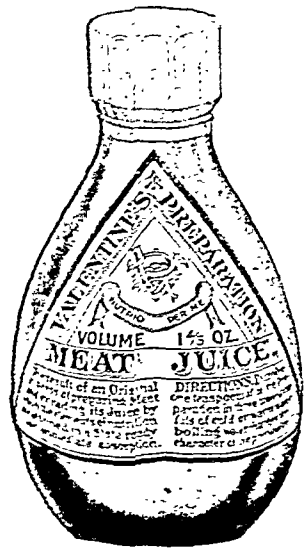
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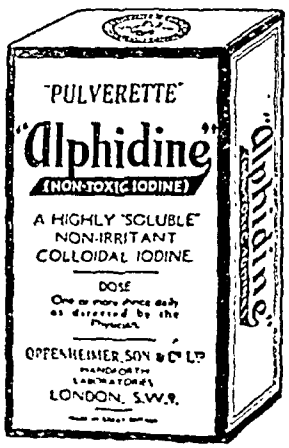
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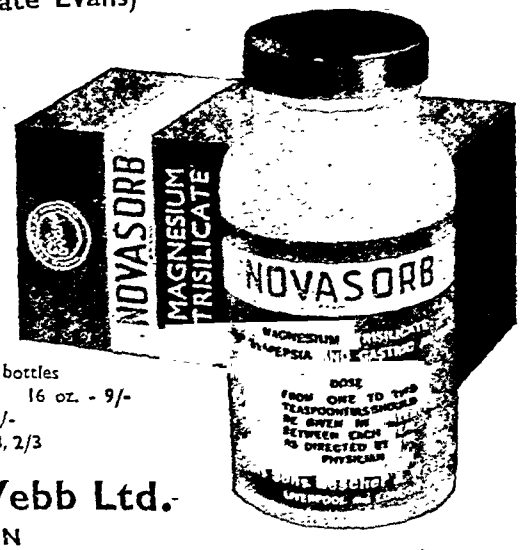
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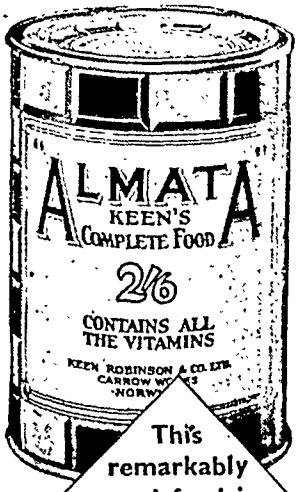
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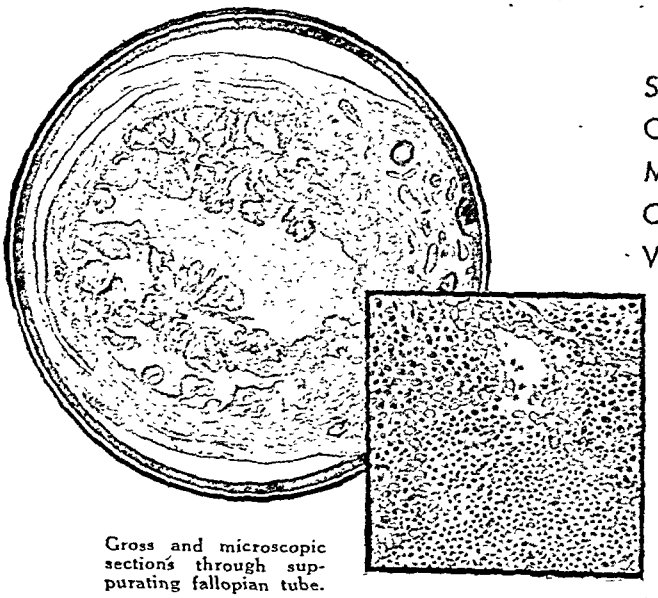
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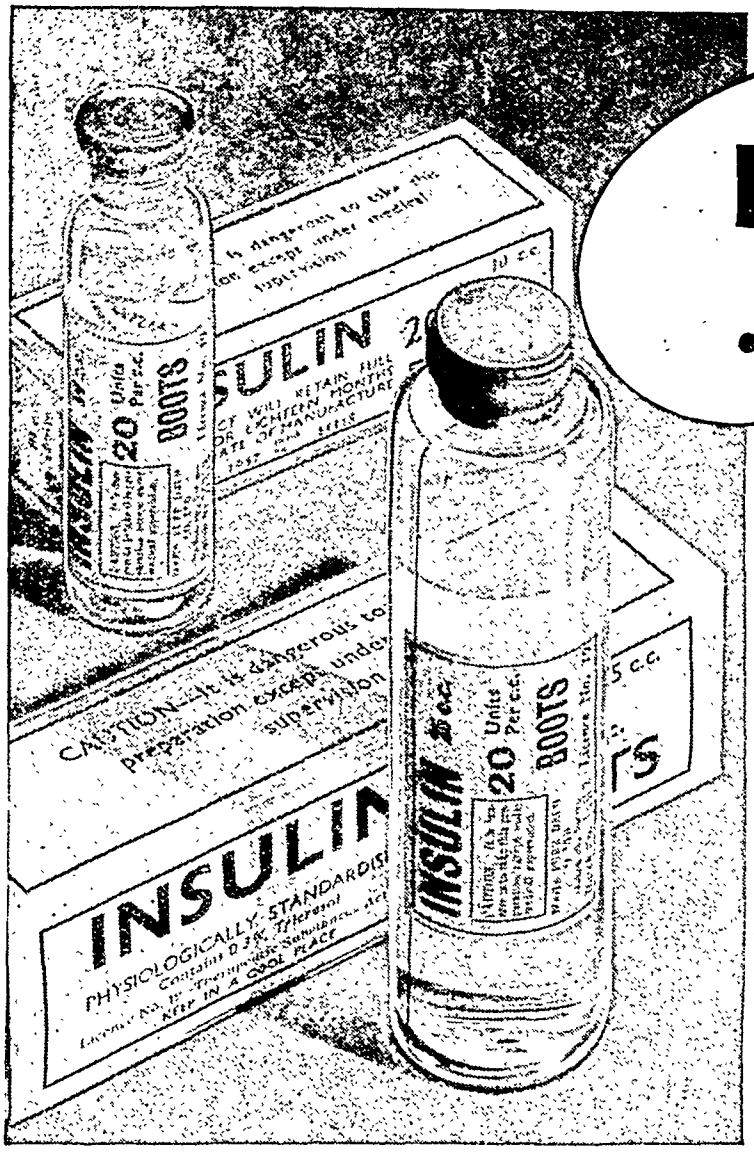
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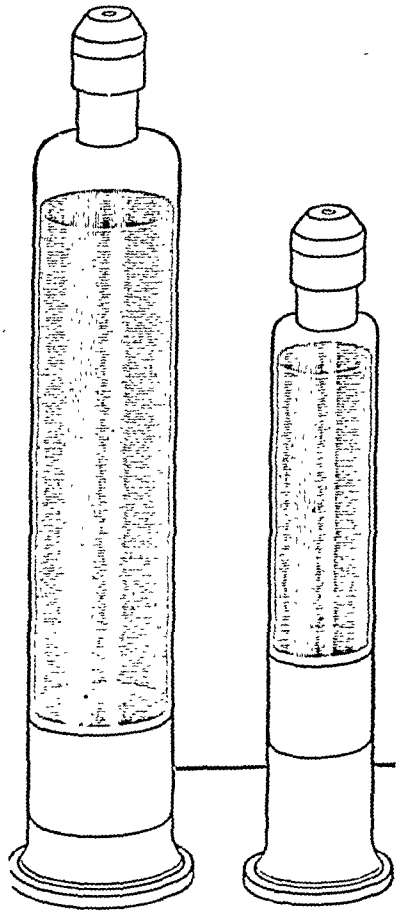
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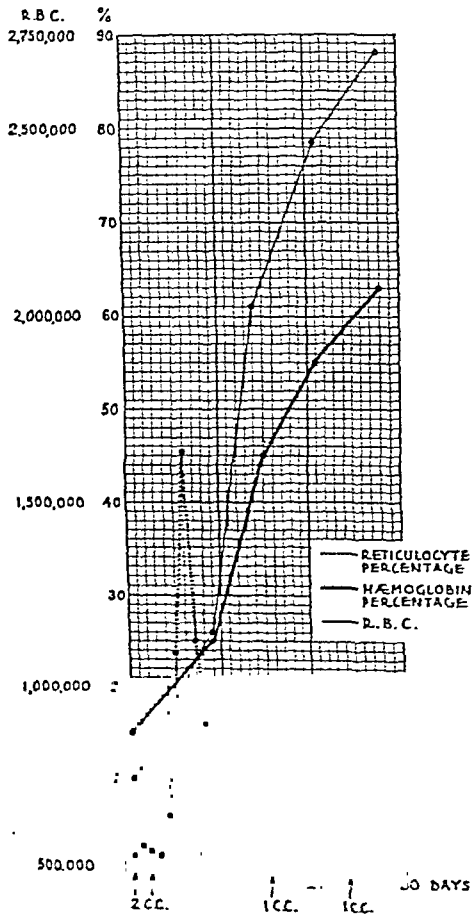
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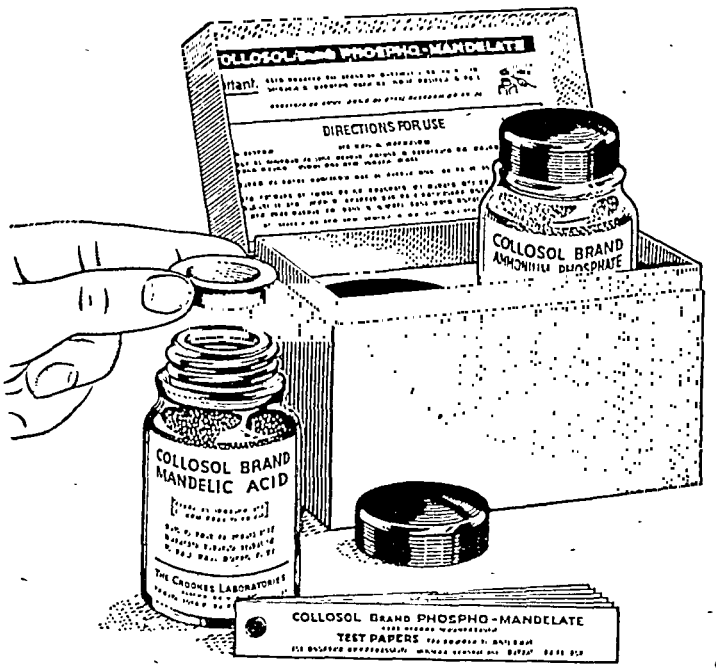
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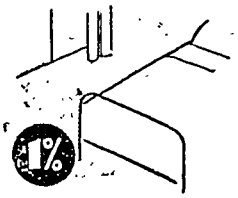
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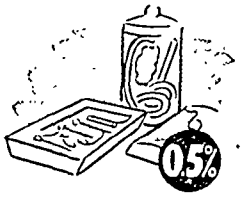
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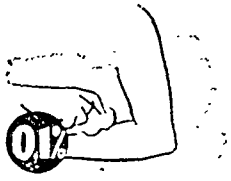
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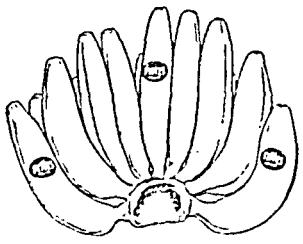
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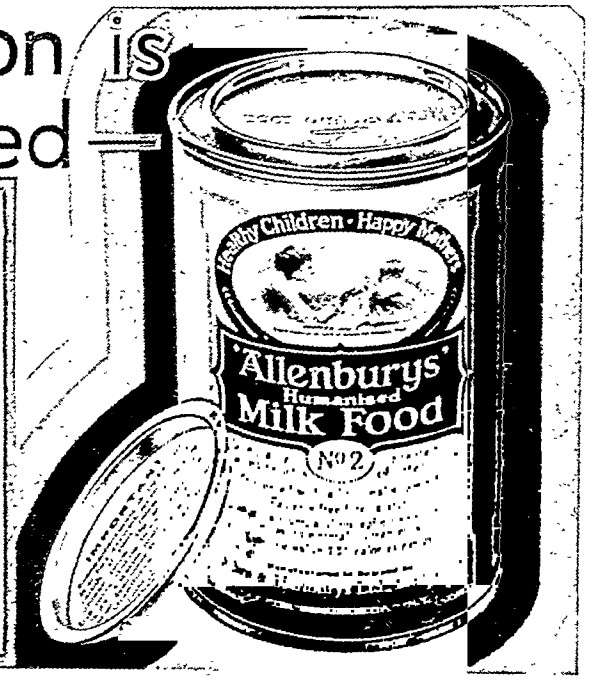
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BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 11 1937

INFLUENZA: FOUR YEARS' PROGRESS*

BY

C. H. ANDREWES, M.D., F.R.C.P.

(From the National Institute for Medical Research, Hampstead, London, N.W.3)

Influenza is a disease with which we are all familiar, either as doctors or as patients. Yet it is a disease concerning which exact knowledge has been lacking, whether from the clinical, the epidemiological, or the pathological point of view. The reason is this: the term "influenza" has been used to designate a scrap-heap of upper respiratory tract infections, and one can never be sure in reading any two descriptions in the literature that the writers are referring to the same disease.

In the absence of any exact method of clinical or pathological diagnosis the only attempts to define the disease have been on an epidemiological basis; and this is not very satisfactory for ordinary mortals, whatever it may be to epidemiologists. I propose to-day to try to convince you that it has recently become possible to separate off from the influenza scrap-heap a definite disease, one, moreover, which is probably responsible for the more important outbreaks labelled "influenza." The basis of separation is in the first place aetiological: one can recover from garglings in the early stages a virus which will infect ferrets and mice. My colleague Dr. Stuart-Harris will describe later in the discussion attempts made to recognize the disease from a clinical standpoint. The results I shall now describe are based chiefly on experimental work, some of it unpublished, carried out jointly by my colleagues Dr. Wilson Smith, Sir Patrick Laidlaw, and Dr. Stuart-Harris, and myself.

The Disease in Ferrets

To recover virus from a patient unfiltered garglings are dropped from a pipette on to a ferret's nose. When virus is present in the inoculated material the ferret shows fever and nasal symptoms after about forty-eight hours. It goes off its food, lies about apathetically, and develops nasal discharge, sneezing, and, later, pronounced nasal obstruction. The temperature chart often shows two spikes forty-eight hours apart. Influenza in the ferret is infectious by contact, and to guard against cross-infections we isolate each animal in a separate cubicle.

When we appear to have infected a ferret with material from a patient we usually kill the animal at the height of its disease on the third or fourth day. We then find that the mucous membrane over its turbinate bones is engorged and that the nasal cavities are full of muco-pus. We remove the turbinates and grind them up with sand; an emulsion is obtained which can be filtered and studied in other ways to prove that it really is influenza virus which has produced the symptoms.

As a rule influenza virus will only infect ferrets when introduced directly into the respiratory tract. If passages are made without the use of an anaesthetic no pneumonia will be produced, but by serial passages in anaesthetized ferrets one can obtain a modified virus which will produce extensive, often fatal, lung lesions (Shope, 1934). These lung lesions are commonly bacteriologically sterile. The affected lungs are firm and purplish red, and much moisture can be squeezed from their cut surfaces. Histologically bronchitis and bronchiolitis are prominent features. There is patchy atelectasis and exudation of fluid in the alveoli with peribronchial infiltration of cells, chiefly mononuclears. But polymorphonuclear infiltration is not a feature, nor are the alveoli packed with cells. It is of much interest to know that a biologically modified strain of virus can be obtained having such a predilection for the lungs; also that lung lesions of this type can be produced by the virus *alone*, without, so far as we can see, any assistance from secondarily invading bacteria.

Adaptation of the Virus to Mice

Virus adapted to ferret lungs will infect mice without any difficulty, but we have had varying success in our attempts to adapt recently isolated human influenza strains to mice. All but one of a number of strains isolated in 1935 infected mice readily after only two or three passages in ferrets (Andrewes, Laidlaw, and Smith, 1935). This year we have found such adaptation more difficult: several strains of virus have refused to infect mice even after a number of ferret passages. Hoyle and Fairbrother (1937) appear to have had the same experience. Lately we have discovered that the failure of some strains to infect mice is only apparent; there is actually merely a failure to produce macroscopic lesions. If inoculated mice are killed on the third day after infection, and more mice are infected with an emulsion of their lungs, and so on, one will ultimately succeed in obtaining visible lesions in the lungs of the mice perhaps after three, perhaps only after six, passages. Quite recently Francis and Magill (1937a), using such a passage-by-faith technique, have reported success in obtaining direct man-to-mouse isolation of influenza virus without the use of ferrets at all. The importance of this to workers in laboratories where ferrets are unobtainable is obvious.

The Disease in Mice

In mice the virus produces lesions of the lungs only; the nasal passages are not affected. Perhaps in relation to this fact influenza in mice is entirely non-contagious; *normal* mice kept in the same cage as infected ones neither contract the disease nor become immune. This makes work with mice much easier, but, on the other hand, we lose the opportunity of what would be a really exciting study in experimental epidemiology. When first adapted to mice influenza is a relatively non-fatal disease; but after

* Read in opening a discussion in the Section of Pathology, Bacteriology, and Immunology at the Annual Meeting of the British Medical Association, Belfast, 1937.

many passages it becomes more lethal, and infections can be produced with one ten-millionth of a cubic centimetre of filtrate. Filtrates are readily neutralized by immune sera, and a neutralization test that has yielded much interesting knowledge is thus made available.

Evidence that the Virus is the Cause of Influenza in Man

I will now summarize the evidence which convinces us that the virus we are studying is the primary cause of epidemics of influenza in man.

1. First, we have recovered the virus from garglings of fifty-three patients with the symptoms of influenza obtained at times of rather widespread prevalence of the disease. During the recent epidemic virus was isolated from thirty-one out of forty-one uncomplicated cases tested. Virus has only been obtained during the first few days of infection and not during convalescence. We have failed to recover the virus from normal people, and we have usually failed also with garglings from sporadic cases or patients in localized outbreaks diagnosed as influenza but occurring in the absence of a widespread epidemic.

2. The virus has been recovered as described above from influenza garglings taken during outbreaks not only in London (Smith, Andrewes, and Laidlaw, 1933), but from all over the world—in the West Indies, United States, and Alaska (Francis, 1934), in Australia (Burnet, 1935), in Russia (Smorodintseff, *et al.*, 1936a), in Holland, and, during the recent outbreak, in Manchester, France, Germany, Hungary, and again in the United States.

3. The serum of patients taken during the acute stages of infection is found to have little or no power to neutralize the influenza virus. But as early as the eighth day of the disease it will have acquired very definite neutralizing powers. No such neutralizing powers appear in the sera of patients suffering from respiratory diseases other than influenza. We now have some evidence that sera from the population at large, including people who have not recently suffered from influenza, contain better neutralizing antibodies just after an epidemic than just before one.

4. In 1933 we made two attempts to infect volunteers with virus which had been passed serially through ferrets; these were unsuccessful, but at the time we failed to obtain any volunteers who had not good antibodies in their sera, and such antibodies may have protected the two victims of this experiment. Last year an accident completed our chain of evidence for us. A ferret infected with a virus which had been passed in series through 196 ferrets sneezed upon Dr. Stuart-Harris and produced in him a typical attack of the disease. There was no influenza prevalent at the time, and the virus recovered was distinguishable by its biological effects from ordinary strains of human origin. There is therefore almost no room for doubt that Stuart-Harris's infection actually came from the ferret (Smith and Stuart-Harris, 1936). Smorodintseff and his co-workers (1936a) have recently recorded their success in infecting five human volunteers with the virus.

5. The irregularity with which Pfeiffer's bacillus has been recovered from influenza epidemics is notorious and cannot be explained away by blaming differences in technique. Smorodintseff *et al.* (1936) have lately carried out extensive attempts to infect volunteers with cultures of Pfeiffer's bacilli, but produced nothing comparable with influenza. Experimental "swine 'flu" has been demonstrated by Shope (1931) to be due to the combined action of a virus and a bacillus related to Pfeiffer's bacillus. On the other hand, experimental influenza in ferrets and mice is a pure virus disease in which bacteria ordinarily play no part. The evidence at present suggests that ordinary influenza in man resembles the disease in ferrets and mice in being purely a virus infection; further, it seems likely by analogy that the virus alone may cause pulmonary complications; but it is all too familiar to us that streptococci, pneumococci, staphylococci, and Pfeiffer's bacilli may on occasion play a very serious part as secondary invaders of the lung.

Immunological Aspects

Naturally we are all interested in possible practical applications of recent work on influenza, particularly in the possibility of prophylactic vaccination. In order to make the matter clearer I must first relate something about immunity in ferrets and mice.

IMMUNITY IN FERRETS

Ferrets which have recovered from an attack of influenza develop potent neutralizing antibodies in their sera and are completely resistant to reinfection for about three months. But after six months their immunity has definitely waned; antibodies, though still recognizable in their sera, are less than before, and the animals will develop some fever and nasal symptoms when a heavy dose of virus is given intranasally.

As already mentioned, influenza virus given subcutaneously or by routes other than into the respiratory tract does not infect—or only very exceptionally. It will, however, produce some immunity, especially when several doses are given. The immunity produced by vaccination is shown by: (i) the production of antibodies; (ii) the milder nature of the fever and symptoms; (iii) complete protection against the development of lung lesions; (iv) protection against the less severe test of exposure to contact with an infected ferret; (v) restoration of waned immunity to the complete state. By this is meant that ferrets whose immunity has fallen off six months after an infection are rendered once more completely immune by one dose of subcutaneous vaccine (Smith, Andrewes, and Laidlaw, 1935).

It would be more satisfactory if normal ferrets could be completely immunized by vaccination, but the results as they stand are not discouraging. It must be remembered: first, that human beings in an epidemic are exposed only to contact infection, against which vaccination does protect ferrets, not to massive intranasal instillations of virus; secondly, that almost all adult human beings have been exposed to influenza in the past and thus have some basic immunity which merely requires reinforcement. They are thus comparable rather to the ferrets with waned immunity than to fresh untreated ones.

IMMUNITY IN MICE

In mice influenza is a disease of the lungs; and just as vaccination is very effective in protecting ferrets against lung lesions, so it is in mice. Two subcutaneous or intraperitoneal injections give a substantial immunity; in many experiments all the mice of a vaccinated group have survived a dose of virus which has killed all, or almost all, controls. Further, when the vaccinated mice have been killed at the close of the experiment the lungs of most have appeared normal. After two doses of vaccine the immunity of mice appears to last for ten but not for sixteen weeks; this is as long as the immunity of mice which have actually recovered from an infection. Protection experiments in mice have lent themselves to the quantitative study of a number of problems, particularly those designed to find a suitable vaccine for use in man.

A most important result of such studies is the finding that virus inactivated by 1 in 5,000 formaldehyde is almost

if not quite as effective an antigen as is living virus. It is still the fashion, particularly in America, to make the statement that a "killed" virus cannot immunize. Influenza virus inactivated by formaldehyde appears by all the tests we can apply to be as dead as a doornail, and I feel that it is rather up to anyone who maintains that it is still alive to produce some supporting evidence.

It is satisfactory to be able to use a safely inactivated virus; it would be better still if we could use one freed from unwanted proteins. Virus filtrates have accordingly been washed on a collodion membrane with pores of such a size that the virus is all held back while the mouse proteins are washed through the membrane. Thus is obtained a water-clear fluid as effective in immunizing mice as the untreated filtrate. Most unfortunately it is found that while formolized virus is almost as effective an antigen as living virus, and purified virus is as effective as unpurified, yet virus which has been both formolized and purified fails to act as a good vaccine—we do not know why (Andrewes and Smith, 1937).

This is particularly unfortunate, since it appears that the presence of foreign protein interferes with the antigenic response to a virus. Thus we found that vaccine made from infected mouse tissues was very effective for immunizing mice, while vaccine made from infected ferret tissues was not. Shope (1936) has observed the same thing. Lately we have discovered that if mouse vaccine is mixed with an extract of normal ferret tissues the immunizing effect of the vaccine for mice is badly interfered with.

Vaccination of Man

Though we have not yet succeeded in eliminating the mouse protein from the vaccine available without spoiling it, we have made preliminary attempts at vaccinating human beings. Francis and Magill (1937) have made similar attempts, using living virus grown, as many viruses can be grown, on tissue cultures of chick embryo. They have succeeded with such a vaccine in inducing a rise in antibodies in the vaccinated subjects. Stokes *et al.* (1937) have also used a living vaccine made from mouse tissues, and claim that there was a lower incidence of influenza among the vaccinated members of the community they studied than in the control group; there is, however, no certainty that the respiratory disease which afflicted that community really was epidemic influenza. We have chosen to err on the side of caution by using only formalin-inactivated virus, and we too have followed the neutralizing antibodies in the people we have vaccinated. One dose of 2 c.cm. of vaccine subcutaneously has produced only a trifling local tenderness and has engendered a very satisfactory rise in antibodies. Among thirty volunteers, all soldiers at Woolwich, we obtained an average increase in antibodies of twenty-five-fold when we compared bleedings taken a fortnight after vaccination with those obtained beforehand. A few results of ours confirm those of Francis and Magill that not much rise occurs until after a week from the time of injection. A satisfactory feature was that one dose of vaccine produced as good an antibody rise as did two spaced a fortnight apart.

Encouraged by these results we began last December to make enough vaccine to inoculate larger numbers of people and to test whether an actual resistance to natural infection would be produced. It was arranged through the kind co-operation of the Army authorities to vaccinate five groups, each of about 100 men, in different units and to designate similar numbers as comparable controls. But scarcely had we begun when the epidemic burst upon us. We did not expect from the serological results that any active immunity would be produced until at least a week after injection, and it happened that in most of the vaccinated and control groups influenza appeared within a day or two of the vaccination. In two groups no influenza occurred amongst either the vaccinated or the unvaccinated controls. We thus have no certain evidence as to the efficacy of the vaccine. There is, however, suggestive evidence that the vaccine is not as good as we should like it to be. Four persons, vaccinated at least a fortnight beforehand, nevertheless developed clinical influenza, and from them we obtained the virus; so we at least know that the method is not 100 per cent. perfect.

And now there has arisen a new complicating factor. We no longer feel sure that all strains of human influenza virus are serologically identical. Magill and Francis (1936) reported lately that two strains of human influenza virus isolated by them in 1934 could be sharply distinguished from each other serologically by means of anti-sera made in rabbits by a particular method. We have been repeating this work, and have reason to suspect that the two strains which they have separated, both of them carried for many generations in tissue culture, have become antigenically changed in the course of this propagation. This might lead us to doubt the importance of the differences found. On the other hand, we have observed that some strains of virus isolated in England in 1937 are not identical with the W.S. strain with which we have worked since 1933 and which we used to prepare our vaccines. The difference is revealed by titrations of ferret sera as well as of rabbit sera, and also in cross-immunity experiments. There is a considerable antigenic overlap, and the strains are more closely related to each other than to the swine-influenza virus; but there are distinct differences. The importance of differences between strains to prophylaxis and to epidemiological studies one can at present only guess at. The tangle is not going to be an easy one to unravel.

Conclusion

I will conclude by re-emphasizing three main points:

First, epidemic influenza in man is caused by a virus which is transmissible to ferrets and mice.

Secondly, progress in our knowledge of influenza may largely depend on our recognition that this specific disease has hitherto been mixed up with other respiratory infections.

Thirdly, there are grounds for hope that an effective prophylactic against influenza may be found, though there are still many obstacles to overcome.

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EPIDEMIC INFLUENZA

A CLINICAL POINT OF VIEW*

BY

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Although the filterable virus of epidemic influenza was first isolated in 1933, no work has been carried out until recently which has combined a clinical and a pathological study of the virus disease. During 1936 we investigated clinically and attempted to isolate virus from four localized epidemics which had been diagnosed as influenza. We did not recover virus, and we obtained serological evidence that the virus was not concerned. Then in December, 1936, the widespread influenza epidemic afforded us an opportunity of correlating the clinical events in man with the isolation of the virus from individual patients. Most of the clinical work in these combined investigations was for several reasons carried out upon patients in the Services. Chief among these were the facts that the men were all healthy before the illness, so that the picture of the disease was clean; and, secondly, that the patients were admitted to hospital early in the course of the disease, which enabled the whole illness to be studied and facilitated the recovery of the virus.

The principal question throughout the work has been whether influenza virus infection in man constitutes a clinical entity or not. Experience in a further epidemic and in the civil population will have to be gained before our tentative conclusion that it does constitute an entity can be proved. The evidence for believing that we were dealing with an entity during the recent epidemic was threefold. First, the disease presented a remarkably uniform clinical picture, case after case exhibiting similar features. It is true that the severity of the disease varied somewhat in the different areas, but the general picture was everywhere the same. Secondly, this characteristic clinical picture was correlated with the recovery of virus from the throat in a high proportion of cases. We were not able to test every patient owing to the number of ferrets required, but representative individuals from groups of similar clinical type were chosen and virus was isolated from twelve out of fifteen patients with straightforward influenza who were tested and whom I saw myself. Thirdly, the clinical picture we attempted to delineate during the 1936–7 epidemic differed from that seen in previous epidemics which we had studied and from which virus was not obtained.

Variations in Clinical Type and Experimental Analogies

During the influenza epidemic certain analogies became evident between influenza virus infection in man and the experimental disease in ferrets and mice—particularly between man and the ferret. Influenza virus can produce in the ferret either a short fever with lassitude, nasal symptoms, and nasal lesions, or an illness accompanied by the development of lung lesions varying in extent from small patches of bronchiolitis and atelectasis to fatal pneumonic consolidation. Similarly, although the more usual illness in man that was of virus aetiology was a three-day or four-day fever with constitutional symptoms and signs of upper respiratory tract infection, other cases from which virus was obtained had signs of chest disease. The commonest type of chest abnormality was a basal condition with rales and suppressed breath sounds, which I believe to be due to a bronchiolitis with patchy atelectasis or scattered areas of consolidation. Virus was isolated from each of five patients tested who had signs of this condition. Frank pneumonic cases, however, did not usually yield virus from garglings and sputum by the time that lung signs were definite, but bacteria such as pneumococci were then recovered; however, one case of pneumonia yielded virus from garglings and sputum on the fifth day of the disease, when consolidation of lobar distribution was present, and virus was also recovered from the lungs in three rapidly fatal cases of pneumonia.

An interesting example of the similarity of the infective process in man and the ferret was seen in connexion with the pyrexia. Several different types of fever were observed in man, including a single peak, a remittent fever, and a fever with two peaks. This latter type, which was seen in 25 per cent. of patients, was of special interest, because it resembled the diphasic fever seen so commonly in ferrets infected with influenza virus.

In addition to the typical cases of influenza a number of mild infections and afebrile patients with symptoms were seen in some of the epidemic areas. Two afebrile patients were tested for virus, but this was not recovered, and although it is possible that such cases represented abortive infections by the virus, such as have occurred very occasionally in the ferret experimentally, we have no proof that the human infections were so caused. Suggestive serological evidence was obtained that subclinical infections by the virus can occur in man; and if this is so, then afebrile patients with symptoms would logically form the next grade of severity to such silent infections.

Finally, some patients presented the ordinary picture of the epidemic disease but suffered from repeated vomiting at the onset of illness. One such case was tested, and virus was recovered from the throat, but another patient who suffered from diarrhoea as well as vomiting and had no respiratory symptoms did not yield virus. No other cases with intestinal symptoms were seen throughout the epidemic, and so, although a form of infection with gastric symptoms at the onset can be due to the virus, there is no proof of the existence of a separate and distinct gastro-intestinal form of the virus infection.

Differentiation of Epidemic Influenza and "Febrile Catarrhs"

With regard to the question of differentiating the virus disease from other conditions resembling epidemic influenza, the form of the epidemic may help. At Chatham where cases from the naval barracks were studied, an epidemic occurred in November, 1936, of tonsillitis and of a pharyngo-laryngo-tracheitis disease. Influenza virus was not recovered at this time, but in January, 1937, a sharp epidemic occurred and virus was now found. The explosive onset of the influenza epidemic contrasted with the slow rise of the previous epidemic from the endemic respiratory infections. Again, the influenza epidemic was soon over in each area and rarely lasted longer than a fortnight; secondary waves were seen, particularly at Chatham, but in each case these were due to the spread of the epidemic among new entries to the barracks, either those returning from leave or visitors to the port. Finally the influenza epidemic consisted of cases of similar clinical type though varying in severity, while the previous Chatham epidemic included two groups of cases, one with frank tonsillitis and the other with pharyngo-laryngo-

* Read in opening a discussion in the Section of Pathology, Bacteriology, and Immunology at the Annual Meeting of the British Medical Association, Belfast, 1937.

tracheitis. For these latter cases, which yielded no evidence of influenza virus infection, we propose to use the term "febrile catarrhs." It must be emphasized that the name refers to a group of conditions forming the scrap-heap of epidemic respiratory infections resembling influenza but of unknown aetiology, and not to a specific condition.

On clinical grounds the first symptoms of illness which are complained of show a sharp contrast between epidemic influenza and febrile catarrh. Table I

TABLE I.—*Symptoms at Onset*

		Epidemic Influenza	Febrile Catarrhs
Premonitory symptoms		13 per cent.	28 per cent.
Sudden onset		75 "	42 "
Symptoms during the first 24 hours of illness	Headache	54 "	17 "
	Shivering	39 "	10 "
	Muscular pains	21 "	7 "
	Cough	20 "	35 "
	Malaise	18 "	3 "
	Coryza	15 "	21 "
	Insomnia	14 "	1 "
	Sore throat	11 "	42 "
	Dizziness	11 "	14 "
	Vomiting	6 "	0 "
	Fainting	2 "	0 "
	Abdominal pains	1 "	0 "
	Sweating	1 "	0 "

shows an analysis of the symptoms at the onset in eighty-four cases of straightforward influenza contrasted with those in twenty-eight cases of febrile catarrh.

TABLE II.—*Symptoms During the Course of the Fever*

	Epidemic Influenza	Febrile Catarrhs
Malaise	91 per cent.	82 per cent.
Headache	87 "	64 "
Anorexia	77 "	70 "
Shivering	74 "	70 "
Coryza or nasal obstruction	73 "	70 "
Cough	71 "	86 "
Dizziness	62 "	64 "
Muscular pains	51 "	53 "
Sore throat	43 "	80 "
Ocular symptoms	33 "	21 "
Insomnia	32 "	43 "
Sweating	31 "	50 "
Expectoration	30 "	50 "
Pains in chest	24 "	40 "
Epistaxis	21 "	21 "
Constipation	21 "	23 "
Nausea	21 "	3 "
Vomiting	11 "	23 "
Dyspnoea	11 "	0 "
Abdominal pain	8 "	23 "
Hoarseness of voice	6 "	43 "
Fainting	4 "	0 "
Faintness	2 "	3 "
Diarrhoea	0 "	3 "

Premonitory symptoms such as coryza, sore throat, or cough are uncommon in influenza, which starts abruptly in the midst of good health. In febrile catarrh, however, the disease begins frequently with a cold, and fever follows in some days' time. Moreover, the first symptoms in influenza are of the general or constitutional type and not of a respiratory nature. Considering the symptoms throughout the fever (Table II) the contrast is less striking. Again, however, general symptoms dominate the illness in influenza, and local respiratory ones predominate in febrile catarrh. Certain symptoms deserve special mention. Cough was short and dry in influenza, but paroxysmal, tearing, and barking in febrile catarrh. In association with the cough, substernal soreness of the chest was more striking in febrile catarrh, which is often a tracheitis. Sore throat is not a feature of influenza, but is constant in febrile catarrh. Laryngitis is rarely severe in influenza, but a very hoarse voice is common in febrile catarrh. Certain other symptoms, however, such as muscular pains and epistaxis, show no difference in frequency in the two diseases.

The differences are summarized in Table III, and there is no doubt that the two conditions show a contrast when the cases are considered in groups. The difficulty arises when individual patients are seen. Then the general

TABLE III.—*Differential Diagnosis of Epidemic Influenza and Febrile Catarrhs*

	Epidemic Influenza	Febrile Catarrhs
Onset	Sudden	Insidious
Symptoms	Constitutional symptoms preponderate	Respiratory symptoms preponderate
Cough	Short and dry	Paroxysmal, irritating, painful, often productive
Voice	Husky	Hoarse
Throat	Posterior pharyngitis; no exudate	Tonsillitis as well as pharyngitis; exudate common
Fever	Sometimes diphasic	Rarely diphasic
Complications	*Bronchiolitis and pneumonia*	*Bronchitis or bronchopneumonia*
Epidemic	Short, with rapid "peaking"	Prolonged and "grumbling"
Contacts	Clinical picture uniform, although graded in severity	Clinical picture variable, with frank tonsillitis in contacts
Leucocyte count	Not diagnostic	Not diagnostic
Virus	Influenza virus recoverable from pharynx	Influenza virus not concerned

appearance may help, for this is very characteristic in typical influenza, being heavy with drooping eyelids half covering suffused and watering eyes, a dusky malar flush, an obstructed but not running nose, and a furred tongue. The pharyngitis of influenza involves the posterior wall and is dry in contrast with the moist tonsillar and pharyngeal inflammation of febrile catarrh, which often exhibits exudate. Nothing comparable with the bronchiolitis and influenzal pneumonia cases seen recently was encountered in the previous epidemics, although a basal bronchitis or a bronchopneumonia occurs as a complication of febrile catarrh. The blood count was not of help in diagnosis, no definite abnormality being found in the leucocytes in either disease, and the absence of leucopenia, post-influenzal debility, and depression from the patients in the Services during the recent epidemic was surprising in view of the general belief in these phenomena as criteria of influenza.

In conclusion, I cannot say that it is possible to diagnose epidemic influenza with precision, but I hope I have convinced you of the existence of a clinical entity in that epidemic disease which is associated with the influenza virus.

We are extremely indebted to the Admiralty, the War Office, and the Air Ministry for their permission to work in Service hospitals, and would also like to thank all the officers concerned for their kind co-operation.

STRUCTURE OF THE PERSONALITY IN PSYCHOTHERAPY*

BY

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Medical treatment by psychological methods is governed by certain guiding conceptions. In the older psychotherapy the leading principle is that of suggestion; in the more recent that of psycho-analysis. In neither is the study of the finer structure of the personality the aim. Suggestion can very well be practised as mass or group suggestion; in fact, frequently those suggestions are strongest and most effective which ignore the single individuality and bring it down to a common level. In the psychoanalytical schools it is the problem of experiences, their elaboration, transformation, and after-effects, which is in the foreground; the other half, the inner structure of the personality which is influenced thereby, receives little attention. It is not at this moment my purpose to state my attitude to all these various methods of psychotherapy, but rather to tackle the problem for once from the opposite side, to show it in the light of the personality and its inner biology.

The Meaning of "Structure of the Personality"

When we speak of the "structure of the personality" we have in mind, as the term implies, something more or less rigidly built up, a structure or a system of structures, a series of a certain number of "qualities" which can be defined in words and which manifest themselves in such and such a manner. This structure would have gradually taken shape and developed through the bilateral operation of the constitutional make-up and the outside world, particularly in childhood and youth. In adults it could figure as a fairly definite constant calculable factor, especially in those cases in which, in the course of psychotherapy, one has to study its typical responses to the outside world. This line of thought links up with the concept which would equate an individual's inherited equipment with that which is constant or fixed in his personality, a point I will refer to later.

The question, What is inherited in the personality? is indeed of fundamental importance not only for eugenics but also for psychotherapy, because, conversely, it is on this that the question depends: What has accrued to the personality from the outside, and can hence be modified by outside influence? But first of all an important question must be outlined more precisely. Generally one starts out from the tacit premise or equation, "psychogenic = responsive to psychotherapy"; in other words, everything that has originated by way of the psyche can also be removed by way of the psyche, and, conversely, all endogenously derived pictures are outside the scope of psychotherapy. Although these propositions, as applying both to the healthy and to the diseased personality, approximate to the truth they call for critical inspection.

The Negative Thesis in Psychotherapy

Already the negative thesis, "endogenous = non-responsive to psychotherapy," has proved to be not altogether valid. There are, however, optimists who state that schizophrenia can be cured by psychotherapy; I have never yet seen evidence of this in severe progressive cases. It would imply that the schizophrenic process is reversible down to its roots by psychotherapy. But let us bear well in mind the difference between "reversible" and "formable." If we cannot bring about an involution of the endogenous elements of the schizophrenic process by psychic means we can nevertheless maintain that the form which it takes can be influenced by psychotherapy at every stage. This is especially the case when the endogenous process no longer shows acute progression. Today it is no longer seriously contested that we have been regarding the schizophrenic symptoms far too much as a finished product, as it were, of the endogenous process. The more active treatment of patients, as it is now legitimately practised in mental hospitals, has shown that even the severe final stages can be modified; this means that complicated symptoms and powerful dynamic manifestations of the psychosis can be made to disappear partially through psychic influence, and that in their place responses can be produced which are nearer to those of healthy subjects. The pictures are therefore reduced to their innermost and truly endogenous nucleus, which is of course irreversible. This core or nucleus consists, in the first place, of certain operative patterns of the psychic mechanism, which may be regarded as constant not in the sense of being static but as representing a dynamic group of factors. How far these pathological tendencies of the psychic apparatus contribute towards the development of the related typical delusional ideas or psychomotor effects depends, within certain limits, on outside influences and hence also on a planned psychotherapeutic technique.

One might say such treatment is "only" symptomatic. The "only" is not, however, always appropriate in milder cases, since in our efforts in the realm of genetic biology we are quite exclusively concerned with the endogenous factor. But for the therapeutic result in the individual patient it can very well be decisive, whether a pathological factor develops into an outward symptom or whether it remains within the framework of an endogenous reaction tendency. This "only" can determine his fate; it can decide whether he will be socially incorporated or rejected.

All this becomes far clearer and more important when we leave the realm of the severe endogenous catastrophes and consider the milder borderline cases, the endogenously determined dislocations and variations of personality that are unaccompanied by psychosis. Consider, for instance, a schizoid psychopathy, one of the nuclear symptoms of which—autism—is manifestly rooted in the constitutional components of the personality. The intelligent young schizoid soon becomes aware of his peculiar inner sensitiveness, the resultant difficulties of establishing contacts, and his tendency to peculiarity; it becomes his problem in relation to himself and to the outer world. This problem is no longer endogenous but signifies a reactively determined psychic attitude. The personality becomes aware of its being different, it seeks form and adjustment. And at this stage psychotherapy can be of decisive help. Or it can depend whether the person finds his appropriate *modus vivendi et laborandi*, or whether he shrinks into himself to become a freakish eccentric. Similarly, increased difficulties during puberty are characteristic of the schizoid constitution; but whether or not he comes to grief in the collision with the parents is often decided by psychotherapy. Similarly there are certain appropriate kinds of milieu in which hypomanic or phlegmatic persons can lead constructive and productive existences; and, conversely, certain ways in which such persons can come to grief are determined by their constitution. Not the constitution in itself but the finding or not-finding of

* One of three lectures given at the Tavistock Clinic in April.

the appropriate milieu determines their destiny; and that is where psychotherapy comes in. It is a striking fact, discovered by Mauz in his work on epilepsy, that the clinically familiar explosive kind of epileptoid syndrome develops phenotypically chiefly among the lower social classes. The same endogenous disposition rarely manifests itself in that form among the educated classes; which means that the decisive symptom, the brutal explosiveness, fails to develop because it is inhibited by educational and environmental influences.

The Opposite Thesis

Now let us elucidate the opposite thesis: "Whatever has originated primarily as the result of external psychic stimuli must be regarded as curable by psychic means." But this thesis, too, is not so straightforward as is usually thought, especially in complicated, multidimensional formations. In the border-zones of schizophrenia or in non-typical depressions we encounter again and again individual cases which are precipitated by a severe psychoreactive shock and do not develop as a typical psychogenic disorder; instead, their course is governed in accordance with endogenous, constitutional dynamics; and once this process has been activated the way back to the psychogenic (exogenous) levels is finally lost. Similar observations can be made in the field of paranoia—for example, in the case of querulents whose illness was clearly reactively determined or in severe cases of pseudo-dementia of long duration, or again in those rare cases of prison psychosis which become chronic. In all these fields abnormal developments of personality occur in which the equation, psychogenic = responsive to psychotherapy, does not properly apply. In such cases the admittedly reactive origin cannot fully account for the resultant psychic disorder; or, at least, a dynamic disproportion becomes apparent between the swift and facile psychoreactive onset and the difficulties of resolution by psychotherapy.

Apart from these cases there still remains a psychotherapeutically unresolvable or hardly resolvable residuum, which can only be explained in terms of non-reversible processes in the endogenous structure of the personality. Such a process may take place before or after the onset of the psychic reaction. In the first case the psychoreactive formations grow in the soil of a personality which has already previously undergone an imperceptible progressive change; this may often be observed in paranoiacs. If we study the past history of such a querulent prophet or inventor, we may come across a slight warping of the developing personality round about puberty for instance—no destruction, no endogenous psychosis, but an imperceptible endogenous change. From now onwards the psychic machinery begins to run in a different gear. Affective dynamics, sense of values, logical appreciation—all these are somehow changed; claims between the ego and the outside world are somewhat differently evaluated. From now on there is a new endogenous foundation on which a new secondary personality picture begins to take shape; but this second picture is not a definite finished product of an endogenous revolution. It is only that new dispositions, new modes of response, and new workings of the psychic mechanism have been created, which in their turn immediately begin their reciprocal action with the stimuli of the outside world. It is only from this reciprocal action that gradually, in the course of years, a new development of the personality, a new picture of the personality, takes shape, which we may term paranoiac, a picture that reveals certain religious, sociological, legalistic, or technically constructive activities which could not be observed previously. Once this endogenous basis has been established extensive reactive effects of strong emotional experience and of stimuli of the outside world become possible, just as in any other person; and they produce symptoms and mould the personality. Thus a new structure of the personality can originate which is emphatically understandable trait by trait in its development and the psychogenic origin of which is perfectly apparent. Sometimes it also responds to psychotherapy. But it is not so easily reversible as its obvious psychogenic dynamics might lead us to suppose, for the underground working of the endogenous moiety of the personality—as seen with the eye of the normal person—is slightly perverted, which makes the psychotherapeutic approach more difficult and renders relapses more likely.

Conversely, the endogenous dislocation at the constitutional level can begin only after the psychic reaction. Pictures of this type are specially obscure in the construction of their symptoms; they are prognostically incalculable and ambiguous as to their inner causal relations. I am thinking, for instance, of a few rare cases of severe pseudo-dementia of long duration which I have occasionally come across and which are referred to in the older literature on chronic prison psychosis. They begin, for instance, after an accident entailing damages, or under the threat of criminal proceedings: massive hysterical pictures, not far removed from malingering; the relation of the content to the precipitating psychic situation, the decidedly psychogenic type of the affective-dynamic situation, and the tendentious coloration of the whole picture are very striking. Some cases of that kind do not remain fully psychoreactive: if one re-examines them years later the outward appearance is in the main almost unchanged, but it now produces a dull, petrified effect. The claim for compensation is maintained; but there is an absurd disproportion between the gain that can be anticipated and the severity and duration of the sacrifice of every form of vital interest. No longer can we detect a powerful inner reaction to a situation that has been tackled with hysterical vigour, nor the ingenuity of true malingering, nor yet the drive of genuine querulousness. Behind the hysterical façade we encounter a grave loss of vitality manifesting as hypochondria, a chronic loss of elementary drive and interest in work and recreation, such as no normal person could possibly simulate. There are cases among these which the critical observer can no longer fit into the framework of the merely "psychogenic" without his being able to detect the moment when the originally purely reactive picture changed its character or to specify the individual symptoms which constitute the change. We cannot say that at this point or at that point the hysterical reaction has been reinforced or superseded by an endogenous psychosis. Also we cannot say for certain what part causality plays as between the various factors. We can only say that behind an originally purely reactive disorder something else which is somehow connected with the endogenous vitality of the person has imperceptibly crept in. Finally, the divergence from the behaviour of an ordinary person in the same situation has become so great that it can no longer be fully explained even in terms of chronic hysterical habituation and facilitation. There are rare terminal pictures of this kind which make the patient appear no more capable of practical life than in the final stages of schizophrenia.

In view of their rarity the importance of such cases is not essentially a practical one. Their significance lies rather in the sidelights they cast on the dynamic principles of the human personality (in health and disease), and on

the intimate interplay of endogenous and psychoreactive forces. They also illustrate especially well the fluidity of the endogenous background of the personality throughout life, which, in psychic treatment, we too often forget in favour of an ostensibly rigid structure of the personality which is quite fictitious.

One could adduce instructive examples from the psychology of everyday life which reveal this interaction between psychic reactions to the outside world and vital losses of inner tension. If we consider healthy persons who have lived for a long time in forced seclusion, servitude, or in prison, we find that some of them are afterwards unable to find their proper place in a normal environment. It is said occasionally that they are "broken" in spirit. That is a sentimental expression, but it signifies something which is quite correct. The process, in fact, has a reactive origin, as a purposeful adaptation to an impoverished and oppressive situation, as a loss of "starch" in the personality, as a diminution of will and energy, as a limitation of interests and needs. One would expect that the personality, when relieved of the outer pressure, would spring back to its former position; but in some cases it fails to do so. Instead the patient finally exhibits a loss of vitality, a certain desolation and indolence which causes him to shrink in discontent from formerly valued activities. Similar pictures may be observed in persons who, without suffering from a serious physical illness, have been in receipt of a pension for many years which has spared them the struggle for life. When they lose this pension they are not only unwilling to work but sometimes lose the very ability to work: they have lost vital potentialities of activity which are never re-established.

A similar meaning attaches to popular phrases such as "to become soured," or "philistine." Dullness acquired in the long course of monotonous, unstimulating work, or by the atmosphere of a small town, occurs first as a reactive adaptation to the environment, which leads finally, through the co-operation of constitutional inner factors, to a definite loss of personal *élan*, which Möbius termed "physiological imbecility." Möbius believed that these phenomena only occurred in women, and in these soon after the termination of puberty. But, of course, the condition can be observed just as frequently in men if they are at all disposed towards it. Neither is the endocrine chemical process alone to blame, nor solely the "staleness" of professional life. Actually both are closely connected causally, and both together ultimately produce a changed attitude of the total personality, which then becomes unable to respond properly even to a change of environment, however stimulating. In other words, it has become unresponsive to psychotherapy.

What is Personality?

What we call a man's "personality" is merely a fictitious scheme which we can compare with what Schilder (dealing with the physical aspect) has termed "body schema." It is a schematic picture of the position, contours, and functional potentialities of its bodily parts which the ego necessarily visualizes, and which need by no means tally with the material facts and the neurological findings. Pain is felt and localized in the amputated limb just as if it still existed. In the same sense we can speak of the psychic side of a "personality schema."

The personality is not a real, tangible structure of constant properties, but a schematic abstraction of certain typical responsive tendencies, of a group of typical attitudes, trends, and vital aims which a person has hitherto generally exhibited and which one would expect him to exhibit in the future. Both the environment and the person himself contribute to this abstraction.

The fiction of a structural fixed personality has a certain real basis—namely, the hereditary disposition or psychophysical constitution and the manner in which it usually responds to fairly constant environmental conditions. The constancy of both factors, constitution and environment, is responsible for the approximate correspondence between the schema of the personality and reality. But if, for example, environmental conditions change, they can produce reactive potentialities hitherto unrealized in the character picture, and thus give rise to novel transient or permanent character traits. We have only to recall the enormous increase of hysterical reactions in the hospitals during the war, hysterical traits which for the most part would never have declared themselves in an ordinary environment. Conversely, we are reminded of the examples of great spiritual strength which is only evoked by danger or idealistic devotion in persons who are ordinarily shy and timid. One cannot say that the one quality is genuine, the other only fictitious. Both are constitutional reactive potentialities in one and the same person. They only become character traits, however, when they are evoked and maintained by appropriate environmental stimuli.

But in order to maintain the fiction of a static picture of the personality the environmental factor and the constitutional factor must both remain constant. Does not the conception of hereditary disposition and constitution already imply this constancy? What is constant is the germinal disposition, in so far as it includes potentially all behaviour patterns realized in the course of a human life. But they are realized according to the special laws of organism, and not simultaneously and not all permanently. Consider an alarm clock which is set to go off at a certain time; this is a typical example of potential energy which is present from the outset but is only realized for a moment. The same applies to many factors of the germ plasm. The hereditary constitution of a person may, for instance, be so set that at 18 years an attack of schizophrenia, or at 48 a bout of depression, is released. Hence germinal constancy is not the same as vital constancy. This is true not only of pathological hereditary factors but also of the ordinary so-called qualities of character. One cannot say that this man is energetic; we do not know whether he will be so to-morrow. This depends neither on illness nor on old age. In some people the fluid energy oozes away in the ordinary course of events, never to return. The careful observer will frequently be able to detect parallel constitutional fluctuations: changes of weight, of hair-growth, of skin elasticity, of potency.

The imperceptible developmental disorders and losses of vitality are, as soon as one begins to pay attention to them, of fundamental significance in relation to the origin of many neuroses and to the entire field of psychotherapy. So far, then, we can say that the personality schema is consistent, whereas the constitution is more fluid. In other words, the notion which the afflicted person has of himself, of his aims in life, and of his potential activities remains as it was in respect to the demands made on him by his environment. But the constitutional basis of this fictitious ego has slid from under his feet, unknown to himself. He now goes on attempting to respond according to his personality as it was hitherto—that is, within the schema of his formerly typical forms of adaptation to the outside world. At this stage a discrepancy arises between the real and the fictitious personality, together with a maladjustment to the outside world, which favours the genesis of neuroses. Here are a few clinical examples.

Conflict between Real and Fictitious Personality

A woman now 38 years of age wandered from one sanatorium to another, a severe case of hysteria with frequent fits, astasia, and a craving for operation. Formerly she had done social work, and had then gradually given up. Experiential complexes or outside difficulties cannot be considered as causal. On the other hand, the following was ascertained. Coincident with the onset of her hysteria she lost 23 lb. in weight. Judging by earlier photos, her habitus had changed from puffy and pasty to being markedly asthenic. Her hair became prematurely grey. The autonomic nervous system was found to be highly labile, her pulse feeble, and her muscles slack. Had the endogenous change in this woman taken the form of a massive bodily disease she would probably not have developed hysteria, just as the severely wounded soldiers seldom did in the war. The neurosis therefore has the purpose of revealing a genuine, and in this case grave, vital loss of tonus in body and psyche. But it is a loss of vitality which owing to its gradual, insidious nature is unable to fulfil the function which every acute disease immediately fulfils—namely, to act as a signal for the readaptation of the aims of personality in relation to oneself and one's environment.

Our therapeutic task in this case is essentially different from that which one is accustomed to consider as usual in hysteria. First, crude measures, such as simple disciplinary measures and forcefulness, are contraindicated. Attempts of this nature, which do not take into consideration the variation of the constitutional basis, would only tend to deepen the gap between the patient's will and her ability instead of bridging it. Experiential psychoanalysis would also fail, because here the difficulties are not experiential but biological. The treatment should aim at a reconstruction of the personality schema, which is no longer adapted to the new biological situation, and at finding the capacity for performance which is still compatible with the changed constitutional level.

Similar cases, incidentally, can occasionally be observed in women in professional life during and after the climacteric—for example, a partially genuine and serious loss of vital tonus of endocrine origin which takes the form of hysteria because it does not present a big enough front to the outside world. Here is another example:

A 40-year-old teacher was admitted for treatment with litigation mania and hysterical hypochondria. He had been waging a fierce struggle with the authorities and the villagers, who were alleged to be undermining his health and honour and conspiring against his life. Formerly he was a valued teacher and an energetic organizer who helped with youth movements and showed himself well able to battle with the world. The time when these normal conflicts became morbid and delusional coincided with a gradual change of his bodily constitution—namely, a considerable increase in weight with endocrine distribution of fat. His condition was greatly improved by endocrine and dietetic treatment combined with psychotherapy. For more than a year now he has again exercised his profession without disturbance.

Cases of this nature serve to illustrate most clearly the intimate interrelations between endogenous and psychoreactive factors in the personality. The schema of the combative organizing personality, which was well adapted to the original constitution, remains unchanged, whilst the serious constitutional endocrine-determined loss of vitality progressively saps more and more of its foundations. The patient still believes himself to be his former robust self, which he has long ceased to be. Owing to this discrepancy the healthy fighting man develops into the overexcited querulent.

Biological Fluctuations

Many of these biological fluctuations defy detection in the life of average persons because their mechanical routine work discloses little of their actual personality. On the other hand, one is surprised by the frequency and force of these inner changes of vitality in mentally productive individuals, since in their case every activity is borne by the full force of the personality and rises and falls with it. Thus the change from productive to unproductive periods produces a sort of "life curve" which can assume various forms, whether approximating to the undulant "circular type," as for instance with Goethe, or taking the schizophrenia-like form, as with Hölderlin and Uhland, in which a tense mental productivity in puberty is followed by a breakdown, or at least by a certain dryness and dullness. All this can well remain within the framework of biological variation, and need by no means assume the intensity of a psychosis. We can observe in many poets and research workers how some potentialities are only realized in certain, maybe very brief, phases of life remaining purely potential at all other times—inhibited for decades and then bursting forth all of a sudden; or early elation may be followed by utter exhaustion or, after a number of dry monotonous years, revived and pulsating periodically right up to old age. This can only be comprehended in terms of the fluctuations in the deep biological background of the constitution, which bears all outward developments of the personality in its wake and itself is changed.

Thus it can be shown how in the seemingly stabilized zenith of life in full swing, the personality can be affected in the absence of true disease or psychosis, by imperceptible shifts of its endogenous foundations, sometimes by favourable clarification, but sometimes by severe loss of substance. Every shift within what we have described as the constitutional radical of the personality—as, for instance, coloration of mood, impulse, stimulation, inertia—forces even the healthy person to a fundamental revision of his personality schema. When this is not possible on internal and external grounds, then there is always a possibility of psychogenic complications and of abortive attempts at pseudo-adaptation. Here, where the constitution changes and the environment remains constant, the danger of neurosis is just as great as in the far more obvious cases in which much altered environment acts on a constitution that has remained constant, as, for instance, in wars and catastrophes. In both cases the effect is the same—namely, the disturbance of adaptation between a constitution and its surroundings.

Critical Periods

What we have just described occurs most markedly and clearly in those phases of life at which every individual has his critical constitutional turning points; hence, above all, in puberty and during involution. Persons of thoroughly healthy constitution usually pass through these critical periods comparatively smoothly. In puberty, for instance, the psychic changes at the instinctive level harmonize with the process of physical maturation: the detachment from the parents: the gradual fusion of the individual components of the sexual impulse, its control and inhibition. On the basis of this instinctual metamorphosis the entire personality schema, with its performance, aims, ideals, and the demands of the environment, undergoes a parallel and harmonious reconstruction.

Every constitutional disturbance in the course of bodily maturation reveals to the careful critical observer corresponding irregularities in the instinctual metamorphosis. The individual psychosomatic signs of puberty become "asynchronized," no longer combine properly. This in turn results in discrepancies between the radicals and the personality schema, which manifest themselves as ambi-

valent attitudes of the youth towards the most important aims of life and the demands of the environment: again, a lack of balance within the personality and the environment. It is for that reason that disturbed and retarded pubescence gives rise to a number of neuroses in the post-pubertal period, especially between the ages of 20 and 30. I have dwelt on this on a previous occasion.

Conclusions

What bearing has this clinical approach on psychotherapy? The change is just as far-reaching as was that from the suggestive to the analytical method of treatment. At that time it was discovered that the suggestive removal of the neurotic phenomenon was merely a cure on the surface, because hidden behind the neurotic symptoms were emotionally toned experiences which had to be tackled therapeutically. The physician turned from the symptom to the experience. To-day we turn from experience to the personality. Without underrating the part played by certain powerful individual experiences, and, above all, the therapeutic value of an undogmatic experiential analysis, I and my collaborators have come more and more to regard individual experiences, both infantile and current, as only providing characteristic evidence, as though they were milestones marking the personality's path of development.

To-day we have come to recognize as essential the total structure of the personality and its relation to its surroundings *in toto*. Psychogenic tangles occur in the first place when the personality becomes disunited within itself or in relation to its environment—in other words, when the constitution and the personality schema, or the personality and the demands of the outside world, are in conflict. Thus the complicated psychological phenomena of neurosis are ultimately referred back to the clear clinical basis of our established fundamental concepts of natural science, to instinct and constitutional radical, to the problem of the struggle for life and adjustment to the environment.

The function of the physician in dealing with a patient suffering from a psychogenic disorder is therefore to study carefully his present-day constitutional make-up and personality structure in relation to all the significant conditions of his milieu, and to bring them to the consciousness of the patient sympathetically and truthfully. From the existing material, however rich or poor it may be, an in itself intelligible and genuine picture of the personality will have to be constructed and brought into a tolerable relation with the environment, which itself may require to be ameliorated by active interference on the part of the physician. Thus the biological adjustment—in other words, a new and tenable attitude to the struggle of life—is brought into being.

This biological approach can equally legitimately be made to apply to the psychic field. Only thus does the personality in itself acquire ethical value, and only through the elimination of sterile inner friction does it attain its highest efficiency in the service of the community.

The fifth Congress of the Societas Oto-rhino-laryngologica will be held at Bucarest under the presidency of Professor Metzianu on September 16, when papers will be read on indications for operation in acute and chronic mastoiditis, oto-rhino-laryngology in the medicine of to-morrow, a new method of radical operation in otitis media, and surgical diathermy in oto-rhino-laryngology. The subscription is 100 francs. Further information can be obtained from the general secretary, Dr. Chavanne, 5 Place des Cordeliers, Lyons.

THE CHEMICAL DIAGNOSIS OF EARLY PREGNANCY

A METHOD BASED UPON THE DETECTION OF OESTRIOL IN THE URINE

BY

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In a recent article in this *Journal* Crew (1936), when discussing laboratory tests for the early diagnosis of pregnancy, briefly indicated the need for a chemical test, and in mentioning some of the attempts that have been made to devise such a test commented upon their failure to provide trustworthy results. Two types of chemical reaction were specifically cited: (1) the histidine reaction, first introduced as a possible means of pregnancy diagnosis by Voge (1929); and (2) the Visscher and Bowman reaction (1933–4), the basis of which is somewhat obscure. The method of Schmulovitz and Wylie (1935) falls into a slightly different category from the above tests, because it is alleged to be based upon the chemical detection of the oestrogenic hormones which are known to be excreted in greatly increased amounts in pregnancy. It requires a great deal more urine than the other tests and a more complicated technique, but as it appeared to be developed from a sounder basis it was given a short trial in this laboratory. The method was abandoned, however, when it was found that the colours produced were not specific for the oestrin compounds, and, indeed, were far more intense than could possibly result from the hormone content of the extracts from which the colours were developed.

The New Method of Diagnosis

The method about to be described makes use of a similar basis to that which was theoretically adopted by Schmulovitz and Wylie. It is concerned, however, only with the oestriol content of the urine, the oestriol having been shown by Cohen and Marrian (1934) to be the predominating oestrogenic hormone in pregnancy urine, and present to the extent of five to ten times the amount of the associated oestrone. It utilizes, moreover, a more specific reaction for this hormone—namely, the Kober phenolsulphonic colour reaction, which has been so successfully developed by Marrian and his colleagues (1936) for the purpose of the rapid estimation of the oestrin compounds in late pregnancy urine, and also as a guide to their isolation of oestriol glycuronide from the same urine.

Having had considerable experience in the use of this reaction upon extracts from late pregnancy urines, I have attempted to adapt it to early pregnancy, where the amount of available oestriol was of course very much less and the proportion of interfering substances correspondingly greater. As Marrian has shown, the oestriol of pregnancy urine is present in the form of a compound with glycuronic acid, and before the active hormone can be isolated the conjugated form has to be broken down by drastic acid hydrolysis. This preliminary hydrolysis has the effect of markedly increasing the pigmentation of the urine, and certain dark products cannot be wholly eliminated in the course of working up the extracts for the oestriol reaction. In the final stage they give a darkish-brown coloration to the Kober reagent, which in early pregnancy urines completely masks the character-

istic pale red due to the presence of minute quantities of oestriol. Failure to effect sufficient purification of the extracts of these acid-hydrolysed urines by any simple means led to the examination of other methods of accomplishing the breakdown of the glycuronide that would not at the same time introduce such complications as those referred to. Marrian in his work on the hydrolysis of the oestrin compounds showed that the release of the active hormone could also be accomplished by incubation of the urine for fourteen days, thus producing a high degree of putrefaction. As only a relatively slight increase in pigmentation accompanied this putrefactive process it was decided to find out whether the breakdown could be brought about rapidly by utilizing heavy inoculation of the urine with *B. coli* and limiting the incubation period to sixteen hours (or overnight). At first urines containing a great deal of oestrin were examined—namely, those from the later stages of pregnancy—and it was found that the amount of oestriol as ascertained by colorimetric means in extracts from such urine treated bacteriologically was fairly comparable with that in parallel extracts obtained after initial treatment by the Marrian technique of acid hydrolysis.

Two samples were then compared in strictly quantitative manner with regard to the oestriol fraction only, adopting the method of Cohen and Marrian for application to both acid-hydrolysed and bacteriologically treated portions. The results were as follows:

Sample	Acid-hydrolysed	Bacteriologically Treated
	mg. oestriol per 100 c.cm.	mg. oestriol per 100 c.cm.
I	0.77	0.59
II	0.58	0.47

Though these results showed the bacterial hydrolysis to be rather less efficient than the acid hydrolysis, the final extracts from which the colour reaction was developed were entirely colourless in the case of the former procedure, whereas in the other they were a slight brownish yellow, such pigment interfering with the colour tone of the pure oestriol reaction. From the point of view of colorimetric estimation the extracts from the urine treated by bacteria were therefore much more satisfactory. It was obvious that the amount of splitting by the bacterial hydrolysis was sufficient to warrant its trial in the detection of oestriol in the urine in the earliest stages of pregnancy.

From the beginning the results were distinctly encouraging, even on such relatively small quantities as 50 c.cm. of urine, and only occasionally was difficulty encountered in the preparation of satisfactory extracts. Originally the urine after incubation was acidified to Congo-red, then treated with 20 grammes of ammonium sulphate, preparatory to the ether extraction of the hormone. Later it was found that the final extracts were uniformly better if both acidification and ammonium sulphate were dispensed with and direct extraction was made with ether. Even then, however, there was occasionally a trace of contaminating pigment capable of yielding a brownish yellow in the oestriol colour reaction, and this was eventually eliminated by a preliminary treatment of the urine with sodium bisulphite, which reduced the original pigment of the urine by about 50 per cent. and led ultimately to the production of a final extract, which contained practically no interfering substance in the last stage of the test. The detailed technique as finally adopted is described below.

Technique

Urine Sample.—The requirement of the test is a sample of at least 50 c.cm. of early morning concentrated urine, collected into a vessel chemically clean in the sense of being entirely free from all substances which might be inhibitory to bacterial action. It is also advisable that the patient should not have had any drugs for a few days before the collection, for these often increase the pigmentation of the urine, and may also adversely affect the preliminary bacterial hydrolysis.

Preliminary Treatment.—The urine is tested for high acidity by treating a few drops with methyl-red, and if acid to this indicator is adjusted with addition of alkali until it no longer shows a pink colour. A 50 c.cm. sample is then heavily inoculated with *B. coli* and incubated overnight. To the urine after incubation, whilst it is still warm, is added approximately 0.5 gramme of sodium bisulphite. The specimen is shaken until the solid has completely dissolved and then allowed to stand for fifteen minutes.

Extraction.—The partially decolorized urine is transferred to a separatory funnel of about 150 c.cm. capacity and extracted with two lots of 40 c.cm. of ether. Occasionally some emulsification occurs, but this may be rapidly resolved by centrifugation. The combined ether extracts are washed with a little water, and then well shaken with a 30 c.cm. portion of 10 per cent. sodium carbonate. The alkali layer having been discarded, this washing process is repeated until the carbonate layer is completely colourless. The ethereal solution is then again washed with distilled water, and when the water layer has been drawn off the ether layer is further extracted with two lots of 40 c.cm. of N/10 sodium hydroxide. After separation and rejection of the upper ethereal solution the combined alkali portions containing the oestriol are treated with 25 per cent. sulphuric acid drop by drop until acid to Congo-red paper. This acidified aqueous solution is then extracted with two portions of 40 c.cm. of pure "analytical" ether, after which the ether layers are combined and washed with a little water. The ether extract is given another washing with 10 per cent. sodium carbonate, and after the rejection of the alkali the remaining ether is freed from all trace of the alkaline carbonate by two more washings with distilled water. The final clear, colourless ether solution is next transferred in two portions to a 50 c.cm. transparent silica flask and the solvent completely evaporated by immersing the flask in a large beaker of water previously heated to 70° C.; the last traces of moisture are then removed *in vacuo* by direct application of suction to the flask. The dry residue is now ready for the development of the colour reaction, using the phenolsulphonic reagent.

The Reagent.—The reagent used is that recommended by Cohen and Marrian, and consists of 3.6 parts of pure phenol with 5.6 parts of pure concentrated sulphuric acid. Small quantities only are prepared at a time; 9 c.cm. of phenol, liquified by heating, to which are added 14 c.cm. of sulphuric acid with sufficient external cooling to the container to prevent undue rise of temperature, makes a convenient amount. It can then be stored in a 25 c.cm. all-glass burette, fitted with a ground-glass stopper so as to exclude moisture from the reagent. Considerable care must be taken with the reagent, which is very hygroscopic and becomes inactive when it takes up water. In measuring out, therefore, it is important first to discard a volume equal to that portion in the tip of the burette below the stopcock, so that only completely protected reagent is used

for the reaction. Moreover, it is advisable only to use a reagent which is less than one week old.

Colour Reaction.—To the flask containing the dry residue 1 c.cm. of reagent is added from the burette, and the flask then immersed in a large water-bath previously heated to about 70° C. By frequently rotating the flask the whole of the residue distributed round the sides is brought into the reagent, and the temperature of the bath is rapidly raised to boiling point, and kept there for a period of exactly ten minutes. During the boiling period it is again advisable from time to time to rotate the reagent round the sides of the flask. The reagent at this stage has assumed a yellowish colour, and it is now cooled by holding the flask under a stream of tap-water. While this cooling process is going on 1 c.cm. of 5 per cent. sulphuric acid is slowly added, the contents of the flask being kept moving in order to bring the somewhat syrupy reagent into a homogeneous solution with the dilute acid. The product, which is still yellowish, is then reheated in the boiling-water bath for a period of two and a half minutes. A positive reaction is obtained when the original colour gradually changes over to pink or red; a negative when this change is entirely absent.

Results

Altogether sixty-five cases have been tested by this method, not including any of those which were examined in the course of the preliminary work leading up to the adoption of the above technique. In all cases the urines were those submitted for pregnancy diagnosis, so that in no instance was pregnancy established beforehand by clinical examination. The first sixty-three cases have been divided into three groups, and the results are recorded in relation to the time elapsing since the first missed period, where that information is available.

GROUP I.—*Twenty-two Cases in which Pregnancy was Established by the Friedman Reaction, and in which Clinical Details were Furnished with the Specimen, so that the Duration of the Pregnancy could be Determined*

(a) Period 2 weeks overdue	.. ..	6 cases
Positive	.. ..	5 „ (all reactions were weak)
Doubtfully positive	.. ..	1 case
(b) Period 3 weeks overdue	.. ..	6 cases
Positive	.. ..	5 „
Weakly positive	.. ..	1 case
(c) Period 4 weeks or more overdue		10 cases
Positive	.. ..	10 (all fairly strong)

GROUP II.—*Eleven Cases in which Pregnancy was Excluded by a Negative Friedman Reaction, and in which Similar Clinical Information was Supplied to that given in Group I*

(a) Period 2 weeks overdue	.. ..	1 case
Negative	.. ..	1 „
(b) Period 3 weeks overdue	.. ..	3 cases
Negative	.. ..	3 „
(c) Period 4 weeks or more overdue	..	7 cases
Negative	.. ..	7 „

GROUP III.—*Thirty Cases Submitted with no Clinical Details*

(a) Pregnancy established by the Friedman reaction .. 18 cases

Oestriol reaction { Positive, 16; Doubtfully positive, 1; Negative, 1

(b) Pregnancy excluded by a negative Friedman reaction, 12 cases

Oestriol reaction .. .. Negative, 12 cases

Since completing the above series two cases became available which gave positive Friedman reactions at a stage when the period was only one week overdue. These were submitted to the chemical test, and one gave a weak but easily recognizable reaction, while the other gave a much stronger positive, comparable to that usually obtained in Group I (*b*).

In the whole series there is only one error arising from the application of the chemical test to early pregnancy diagnosis, so that its accuracy can be said to approach that of the Aschheim-Zondek and Friedman tests. Two cases of doubtful positivity, however, would have required repetition one week later, while, on the other hand, one Friedman test had to be repeated because it gave a very doubtful reaction when the colour test showed a definite positive. The second biological test on a further sample obtained five days later confirmed the accuracy of the chemical diagnosis.

Most of the other tests that have been suggested as a means of pregnancy diagnosis have had the merit of simplicity without that of reliability. With this test the reverse holds, and it leaves something to be desired by way of simplification. However, investigation has shown that none of the steps can be sacrificed without impairing the general efficiency of the process; the only saving that might reasonably be resorted to would be to cut down to a single extraction, using about twice the volume of the extracting medium, those processes where two extractions have been adopted as the standard practice. If consideration, therefore, be made only of the time and labour involved in a single test, then it becomes doubtful whether such technique could find general application to pregnancy diagnosis. However, where larger numbers are concerned and measures are taken to carry out five or six tests simultaneously, the method warrants more serious consideration as a practical alternative to the biological methods. To carry out such simultaneous extractions all that is necessary is the construction of a mechanical shaker to hold a number of separatory funnels.

Advantages and Disadvantages of the Method

At this stage one may conveniently summarize the advantages and disadvantages of the chemical method as compared with the biological tests. In favour of the former it can be pointed out that it enables a result to be obtained in twenty-four hours, whereas the most rapid of the biological tests usually takes forty-eight hours. It dispenses with animals, the upkeep of which is expensive and which are subject to marked individual variation in sensitivity to hormone injection. Moreover, it can make use of specimens that have undergone some degree of putrefaction and have become toxic to test animals.

Its disadvantages are: first, the more laborious technique, and, secondly, that the reactions are rather weak at the stage when the period is only two weeks overdue. There is also the possibility that the chemical test may be, in general, a few days behind the Friedman test in providing positive results in the very earliest stages of pregnancy. This point, however, has not as yet been sufficiently investigated.

Even though, owing to its more tedious procedure, the method might not be adopted as a routine in pregnancy diagnosis, the very fact that it provides a much readier route to the approximate determination of excess of the preponderating oestrogenic hormone than that by way of biological assay would seem to assure to it (or perhaps some slight modification adapted to larger quantities of urine) a role of some practical importance in the field of endocrinology.

Summary

1. A biochemical test for the diagnosis of early pregnancy is described which is based upon bacterial splitting of oestriol glycuronide and the subsequent development of the oestriol colour reaction with phenolsulphonic acid.

2. Urines from sixty-five cases in which pregnancy diagnosis was required have been examined by the test. In all except one case the result was in agreement with that of the Friedman reaction. The advantages and disadvantages of the test as compared with the biological tests are briefly discussed.

In conclusion I have to express my warmest thanks to Messrs. Parke, Davis and Co. for a generous supply of pure crystalline oestriol (theelol), which has been used in this work as the standard control substance. My thanks are also due to Miss I. McPhee for her invaluable assistance in the carrying out of the many extractions, and to Dr. A. R. Berrie and Mr. T. Harvey of the bacteriological department, who kindly undertook the inoculations.

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ATHLETIC INJURIES OF THE KNEE-JOINT, EXCLUDING CARTILAGE INJURIES*

BY

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Of all athletic injuries those of the knee-joint are the most common. They often lead to prolonged unnecessary incapacity and absence from sport, especially if no definite programme of treatment is mapped out from the start. The athlete is usually a sane and sensible person as regards carrying out the treatment of his injuries, provided that the diagnosis, the difficulties of a quick recovery, and an active course of treatment in which his full co-operation is necessary are fully explained to him. Athletic injuries to this joint, as in all other injuries, may be due to: (*a*) direct violence, or (*b*) indirect violence.

Direct violence, such as a fall on the knee, a knock, or a kick, may cause any of the following:

1. A traumatic synovitis.

2. Contusion of the quadriceps muscles or their expansions. In these cases a synovitis of the knee may follow in a few days, either from seeping of blood serum into the joint or irritation of the capsule and synovial membrane by the products of bruising. Efforts are naturally made to prevent this synovitis, but the patient is warned of its possible occurrence.

3. A prepatellar bursitis or bruising of the infrapatellar pad of fat.

4. Fracture of the patella or head of the fibula.

Therefore in cases in which there is tenderness in relation to a bone a radiograph should be taken immediately.

There are four main types of indirect violence:

1. Flexion, usually producing a synovitis.

2. Rotation, which in a mild degree produces a synovitis, but if severe causes cartilage injuries.

3. Lateral wrenches, in which the lateral ligaments are involved.

4. Extension, in which the anterior cruciate ligament, infrapatellar fat and alar folds, as well as the posterior capsular structures, including the popliteus tendon, may be damaged.

* Read in the Section of Orthopaedics, including Treatment of Fractures, at the Annual Meeting of the British Medical Association, Belfast, 1937.

Often the injury is due to a combination of two or more of the above.

Before considering in detail each variety of injury let me here stress the importance of giving the patient special instructions as to graduated remedial exercises and simple remedies which he can carry out himself. The patient is warned that at all costs he must avoid undue wasting of the quadriceps muscles and a stiff knee. A scale of graduated exercises starting with those avoiding weight-bearing includes:

1. Twitching and contracting the quadriceps muscles for two minutes every hour while lying on a couch.

2. With the legs dangling over the edge of a couch so that the knees are bent, alternately extending and flexing each knee. This exercise is carried out twice daily, starting with twenty complete movements, increasing by five movements each time.

3. Raising the extended leg by flexing the hip while lying flat; abducting the thigh at the hip and then adducting it. This exercise is designed to bring into action every muscle of the thigh and buttock.

4. Bicycling.

With each exercise the patient should be made to relax completely before starting the movement again, as it is the active contraction of the muscle from its completely relaxed state which is so important. As the patient improves and synovitis disappears graduated weight-bearing exercises can be started—such as:

5. Holding the back of a chair; heel raising and knee bending and straightening.

6. Skipping.

Simple home remedies include:

1. Sponging the knee alternately with hot and cold water, thirty seconds of each for five minutes.

2. Massaging the muscles above the joint with olive or castor oil.

3. The application at night of Scott's dressing, antiphlogistine, or lead and opium.

Let us now consider the various injuries in detail.

Internal Lateral Ligament Strains

The importance of having a clear outlook on these injuries cannot be emphasized too strongly, as they are one of the commonest causes of chronic knee complaints. The injury is caused by an abduction wrench such as takes place in turning while ski-ing, and is so common in Switzerland that it is vulgarly known as the "Swiss kiss." Sometimes rotation occurs in the injury, and an injury to the internal semilunar cartilage complicates the condition. This complication one might expect in mining injuries, but it is my experience that in athletic injuries it is uncommon for internal lateral ligament strains to be associated with cartilage injuries. In those cases though, in which the maximum tenderness is at the middle of the ligament, at or near the point of attachment of the internal cartilage to the deep surface of the ligament, and in which there is limitation of full extension from the start, damage to the cartilage should be considered as a likely complication of the strain.

Usually, however, there is marked tenderness at either its upper or lower attachment—the upper is more common—and external rotation is limited and painful. Sometimes a small flake of bone is separated from the attachment of the ligament to the internal femoral condyle. It is important, therefore, to radiograph all cases at once. The essential point to be sure of is whether extension is limited or not. In the early stages of an uncomplicated

internal lateral ligament strain we find that extension is not limited. In untreated cases, and in those in which no effort is made to prevent limitation of extension, it will be found that after a week the last five degrees of extension becomes limited and painful. This is due to the fact that injured ligaments always tend to shorten—a pathological principle which at present is apparently not properly understood. Otherwise so many of these cases would not be treated by supporting the ligament in its relaxed position—that is to say, in the case of the internal lateral ligament, supporting the knee in a slightly flexed position. The strong flexor group of muscles, already tending to flex the knee, have thus an added mechanical advantage, and fix the joint by spasm. If this position is maintained for long, secondary contracture of the ligament takes place, due to the formation of granulation tissue in and around it, especially between the ligament and the joint at the back.

For the sake of treatment and prognosis I shall classify these strains in three degrees—mild, moderate, and severe. As a general working rule, even with intensive and properly directed treatment, mild degrees will take at least six days to recover completely, so that the patient is able to carry out full exercises. Moderate degrees take six weeks and severe degrees six months.

Treatment of Mild Degrees

Heat and massage over the ligament and surrounding muscles are started at once. A tendency will be found for the products of bruising to spread down the ligament and around the muscles at the back of the joint. The quadriceps are stimulated by graduated faradic contractions for twenty minutes daily from the beginning, and the constant extension of the knee by these contractions helps to prevent the tendency towards slight flexion of the joint. Gentle daily manipulative movements concentrating on the involuntary joint movements, such as moving the patella from side to side, the tibia forwards on the femur, and rotatory movements within the limits of movement without pain, while tension and countertension are applied, are of great value in that they overcome the spasm of the muscles strapping the inner side of the knee. In addition anodal galvanism or diathermy can be given.

Treatment of Moderate and Severe Cases

Skiagrams may reveal a small flake of bone detached from the surface of the internal condyle, or rupture of the ligament may be suspected by undue lateral mobility of the joint. The knee should be placed in a plaster-of-Paris cast in full extension for a period varying from three days to three weeks according to the degree of injury. A pad of felt is first placed over the length of the internal femoral condyle and the ligament. The cast consists of a back plaster holding the knee in the fully extended position and maintained by two plaster bandages, one above and one below the knee. A third bandage is wound round the knee in a figure-of-eight so as to exert lateral pressure over the pad of felt and the internal lateral ligament. Care is taken to leave the patella free, so that this can be moved from side to side and up and down daily. There is ample space above the top of the plaster in which to stimulate the quadriceps by faradism daily. Unless there is a rupture of the ligament or separation of the flake of bone weight-bearing is allowed and the patient encouraged to contract the quadriceps voluntarily. In this way traumatic effusion is massaged away from the ligament by the firm pressure pad, the tone of the quadriceps is helped, and full extension is maintained.

When the plaster is removed, and for a varying period afterwards, flexion of the knee may be markedly limited and painful, but this will gradually return with remedial exercises, faradic contractions, massage, and gentle manipulative movements. No forced movements should ever be attempted, and a manipulation under an anaesthetic is only justifiable as: (*a*) a diagnostic procedure to rule out an associated misplaced cartilage; and (*b*) in cases of several months' standing, in which all tenderness has disappeared from over the ligament and it is felt that any limitation of joint movement is due to formation of adhesions. Early forcible manipulation in these cases will often only give rise to disappointment and aggravation of the condition. As soon as walking is allowed the tread and heel of the shoe should be raised a quarter of an inch on the inside to prevent strain on the ligament.

Patients with a moderate degree of sprain treated for a short period in plaster have returned to football two weeks after the injury. Comparison with untreated cases and with those treated by other methods show their recovery period to be about one-quarter as long. Severe strains complicated by separation of a flake of bone or rupture of the ligament do take a long time, but recovery is helped by periodic courses of diathermy and faradism. Massage is not given in these cases over the ligament or condyle.

External Lateral Ligament Strains

These are often associated with sprains of the biceps tendon, ilio-tibial band, and external quadriceps expansions, and frequently are due to direct injury. Swelling appears on the outer side of the knee in connexion with the biceps tendon and insertion of the ilio-tibial band and external quadriceps expansion into the external tibial condyle, and is often mistaken for a cystic condition of the external semilunar cartilage.

Treatment consists of heat, massage, graduated faradic contractions, and gentle manipulative movements, to which may be added anodal galvanism or diathermy. Radiographs should exclude a crack in the head of the fibula.

Bruising of Infrapatellar Pads of Fat and Alar Folds

These may be caused by hyperextension or direct violence and give rise to swelling and tenderness below the patella and on each side of the ligamentum patellae. There is limitation of full extension and pain on coming downstairs. Owing to early wasting of the quadriceps often a vicious circle is started, as weakness of the crureus and subcrureus allows further pinching of these structures by not pulling them from between the joint surfaces in full extension. Treatment should consist of deep massage over the pads combined with faradic contractions and anodal galvanism or diathermy with the terminals arranged in an antero-posterior direction.

Often violent hyperextension is associated with strain or rupture of the anterior cruciate ligament and the posterior capsular structures, including the popliteus tendon. If a strained or ruptured cruciate ligament is suspected, as shown by undue forward mobility of the tibia on the femur, the knee should be put in plaster for three weeks—weight-bearing is not allowed, but during this time the quadriceps are treated with faradism. If the structures at the back of the joint are strained the treatment should be divided between the front and back of the joint, and heat, massage, and faradic contractions should be given to the gastrocnemii, popliteus, and hamstring muscles as well.

Synovitis

I have left synovitis to the end intentionally, as it is often a complication of all the preceding conditions; naturally, if present, it should be treated first.

Aspiration of the joint, especially if the effusion be partly haemorrhagic, which it usually is, will give instantaneous relief. Under strict aseptic technique the outer side of the suprapatellar pouch is anaesthetized with 2 c.cm. of 2 per cent. novocain or novutox. Through this anaesthetized area a small scratch is made with a tenotome and a large-bore needle is pushed into the joint and the synovial effusion aspirated. There is no risk attached to this procedure provided it is carried out under conditions of strict asepsis, and it will prevent granular lumps of inspissated blood collecting in the suprapatellar pouch. It is these which so often give rise to adhesions and chronic capsulitis with marked quadriceps wasting. As a result of aspiration and the use of a local anaesthetic there may be slight pain in the joint after about four hours, but by the next day this has passed off and the condition has eased. A slight return of effusion may be expected, and as long as this persists weight-bearing should be avoided, since the synovial membrane is so sensitive and inflamed at this stage that any weight on the joint is apt to produce more effusion and swelling.

As soon as the joint has been aspirated pressure is applied by a firm bandage over lint or wool soaked in lead and opium. The next day treatment consisting of heat, massage, faradic contractions, and gentle manipulative movements is started. If the amount of effusion is small and aspiration is not considered necessary anodal galvanism or diathermy may be added.

The length of time in recovering will vary according to the severity of the synovitis—from a few days to a month—but even the severest degree of traumatic synovitis should have completely cleared up in this time, provided there is no complication such as a lateral ligament strain or cartilage injury. Slow recovery should arouse suspicion of some underlying septic focus, and the patient must be carefully examined to exclude this.

Chronic Knee Strain

There is a type of strain which appears frequently in middle-aged and overweight patients, often following prolonged exercise, such as thirty-six holes of golf or a long day's shooting. Sometimes patients give a history of an old injury to the joint, or the *x* rays may show slight early osteo-arthritic changes. Synovitis is present, the quadriceps are atonic, and the extremes of joint movements may be limited.

Treatment consists of heat, massage, graduated muscular contractions, and the limitation of active exercise until movements and muscle tone return to normal. These cases usually clear up completely at the time, but often tend to relapse and require further treatment some years later. If they are neglected synovial changes occur, the muscles waste further, and definite osteo-arthritis of the joint sets in.

Quadriceps Insufficiency

This condition has long been recognized as a common cause of recurrent synovitis or of an unstable knee. Very often this type of knee is labelled as due to a torn cartilage, but is no better after the cartilage has been removed, since the cause of the condition has not been corrected. Quadriceps insufficiency should be divided into three types, and each type gives rise to different symptoms:

1. Vastus Internus Insufficiency.—Pain and a strained feeling are felt on the inner side of the knee.

2. Crureus and Subcrureus Insufficiency.—Symptoms are referred to the infrapatellar pads and alar folds.

3. Vastus Externus Insufficiency.—This is often associated with a slack ilio-tibial band. Pain and instability of the outer side of the joint may lead to the diagnosis of a damaged external cartilage. Careful examination will reveal in which part of the quadriceps there is most wasting, and every endeavour must be made to correct the wasting by graduated faradic contractions and special exercises.

Frequently quadriceps insufficiency is associated with limitation of movement. If this be so the joint must first be manipulated under full anaesthesia, followed by daily routine treatment. A joint may apparently be free in movement but painful on playing football or running full out. This type of joint is often completely cured by a forcible manipulation.

Conclusion

I will end by stressing the following points:

1. Severe internal lateral ligament strain takes a long time to recover and treatment cannot be forced.

2. Quadriceps insufficiency may be divided into three parts—inner, middle, and external.

3. Remember that Sir Robert Jones emphasized the importance of trying the effect of forcible manipulation on a knee-joint before labelling it functional or before removing a doubtful cartilage injury.

4. Always give the patient remedial exercises to carry out. He then feels that he is taking an active part in his own recovery.

Clinical Memoranda

Expulsion of a Placenta Praevia in Advance of the Foetus

A careful search of the literature has elicited only four references to the expulsion of a placenta praevia in advance of the foetus. On the Continent Magnani (1931), Laviano (1932), and Cambon (1935) have each recorded a case, while in this country Petch (1924) gave details of a case he encountered some thirteen years ago. The last-mentioned, on arriving at his patient's bedside in response to an urgent summons, found the whole placenta lying in the bed and the foetus evidently not yet born. Examination showed that the foetus was occupying a transverse lie. Though the expulsion of the placenta had apparently been preceded by a heavy loss of blood, the patient's condition was good enough to permit of internal version and the pulling down of a leg under anaesthesia. She made a satisfactory recovery.

The placenta in the case which came under my care, and the details of which follow, was noticed, though not recognized as such, by me in process of extrusion, and a minute or so later was seen and recognized without difficulty lying in the bed. I was engaged in washing up in the intervening moments, and I therefore was not actually a witness of its complete birth: but there was certainly a minimal loss of blood accompanying the process or, for that matter, following it.

CASE HISTORY

Mrs. S., aged 29, had had one normal confinement at home in 1931, and a second, also normal, at home in 1934. She had booked a midwife for her third confinement, which was expected to occur in March, 1937, and had not consulted her doctor at all, as she had been in very good health. In the first week of January, 1937, when the pregnancy had reached twenty-eight weeks, a sudden profuse haemorrhage occurred one night, waking the patient up and causing her considerable alarm. By the morning the loss was so small that the patient, though conscious of weakness, did not notify her doctor of what had happened. A fortnight later a second and still more severe haemorrhage occurred, again during the night. This time it was so persistent that the patient, feeling that she could not continue to lose so heavily, sent her husband to the doctor, asking him to arrange for her immediate transfer by ambulance to hospital.

When, therefore, the patient arrived at the hospital in the early morning in a more or less moribund condition she had not been examined by her doctor (by the time he was sent for vaginal examination was contraindicated by the patient's condition and his only course was to act as he did) and was too near death to stand the careful examination necessary to diagnose placenta praevia per vaginam, apart from the danger of aggravating haemorrhage by such a procedure. Abdominal examination revealed only a vertex presentation. Attention for the time being was given entirely to the treatment of the patient's grave general condition. The pulse on admission was almost imperceptible and uncountable, the patient semi-conscious, the respirations sighing, and the skin covered with a cold sweat. The house-surgeon whilst awaiting my arrival gave an intravenous saline with marked improvement in the pulse.

Guided by the lack of any evidence of toxaemia, no oedema, only a slight trace of albumin in a catheter specimen of urine, and by the nature of the haemorrhage—sudden, profuse, and whilst at rest in bed, in an otherwise healthy woman—on my arrival I diagnosed this as a case of placenta praevia.

The pulse rate now was 160 and the patient obviously in a very critical condition from extreme exsanguination. Blood was still trickling slowly from the vagina. Occasional but definite labour pains were occurring, causing further distress. Morphine 1/6 grain was given hypodermically. Arrangements for a blood transfusion were made by the kind co-operation of my colleague Dr. Vaughan Facey, and in the meanwhile a further intravenous saline was given.

It was then that during a pain I looked to see whether there was any further loss per vaginam. Actually I saw the vagina distended by what I took to be a large bag of waters covered with blood clot. I washed up; and on my return to the bedside found the whole placenta lying between the patient's legs. The umbilical cord, as it passed back through the vagina was covered by the membranes, while the maternal surface of the placenta was exposed. The placenta was evidently the object which I had seen in process of expulsion, maternal surface foremost. Its expulsion was not preceded or followed by any increase of haemorrhage.

The blood transfusion was then carried out, and the general condition of the patient, who was now able to take hot drinks, improved visibly. Two hours after the expulsion of the placenta the foetus was born by the vertex easily and without further loss of blood.

The puerperium was complicated by the development of a rather extensive thrombophlebitis of the left leg, but in due course the patient returned home in good health.

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Reviews

CLINICAL PATHOLOGY

Clinical Laboratory Diagnosis. By Samuel A. Levinson, M.S., M.D., and Robert P. MacFate, Ch.E., M.S. (Pp. 877; 144 figures, 13 plates. 45s. net.) London: H. Kimpton. 1937.

There is no dearth of "bench-books" designed as a guide to the examination of morbid material, and any new work of this kind, apart from the ephemeral advantage of being fully up to date in a constantly expanding subject, is likely to depend for success on some new feature or method of presentation. Levinson and MacFate's *Clinical Laboratory Diagnosis* differs from many similar books in being widely comprehensive both in aim and in presentation; it is a practical textbook on chemical pathology, haematology, bacteriology, and parasitology, and even toxicology, and thus provides information on every kind of procedure likely to be necessary in examining pathological specimens. The main chapters deal each with one of the body fluids and with its examination from all these standpoints, and each concludes with a description of the principal diseases in which abnormal findings may be expected. Technique is fully described, including the composition of all reagents used. Other chapters deal with skin tests, the special procedures required and the differences in results to be expected in children, milk and water examinations, histological technique, the detection of poisons, and a complete programme for conducting a class in clinical pathology.

As a book of reference providing instruction in methods with which the worker may be unfamiliar this will be of great value. As a general guide in education or routine work it may be found to have certain disadvantages. On the all-important question of interpretation, and in particular on the difficult decision whether given cytological and bacteriological findings indicate the existence of infection, much more might have been said, and to the same end a chapter on the normal body flora would have been helpful. There is also what may be called a rule-of-thumb tendency which we deprecate; why, for instance, should it be laid down in the table of appropriate culture media on page 547 that material from certain parts of the body, including the throat, eye, and peritoneal cavity, should be cultivated in a medium containing brain? The choice of medium depends, not on the source of the specimen, but on the infection suspected. The list of "Common Infectious Diseases and the Causative Organisms" in the same chapter illustrates the same attitude; two bacteria in each case are given as the common causes of asthma, bronchitis, empyema, acute endocarditis, and pericarditis; while to include headings such as abscess, inflammation, and ulcer in this list, following them with the mention of one or two common bacteria, serves no useful purpose. This section includes statements that "duodenal and gastric ulcers are due to streptococci" and that "mycosis intestinalis" is caused by *Bacillus anthracis*. The besetting sin in clinical pathology is the too ready attribution of disease to bacteria of doubtful significance, as in the former statement, and the general adoption of a much more critical attitude is highly to be desired. This criticism does not detract from the value of the book as a technical guide, and we can commend it as a source of information otherwise only to be obtained from works on several different branches of applied pathology.

DIET FOR DIABETICS

Diets and Recipes and the Treatment of Diabetes and Obesity. By E. P. Poulton, M.A., D.M., F.R.C.P. (Pp. 121. 7s. 6d. net.) London: H. Milford, Oxford University Press. 1937.

Dr. Poulton has written a book full of practical facts and food tables which he has found useful in the treatment of diabetes. The book is almost entirely concerned with diabetes, and diet in obesity is dealt with far too shortly in only two pages. The author uses high carbohydrate diets with moderate protein and fat and advocates the total weighing of the diet. In diet arrangement he has created a "carbohydrate ration" of 20 grammes carbohydrate, and uses varying ratios of carbohydrate to fat of from 1 to 2 to 6 to 1. His fat ration contains 10 grammes of fat. But in both C. and F. food values he also gives lists of half rations. These two different "rations" seem unnecessary and are apt to confuse, because anyone who is capable and likely to weigh his diet is also able to multiply or divide by two. Thus one single "ration" of C. and F. would be less confusing.

The recipes are extremely well arranged and indexed, and ought to be very welcome to patients. (They have been published separately under the title *Diets and Recipes* by Milford at 1s. 6d.) Useful chapters on vitamins and mineral metabolism are also included. The footnote on page 76 is rather surprising and its meaning obscure. In Table 8 bovril and oxo have been included, quite rightly, among articles of "negligible food value," but the footnote apologizes for this and says that "extras of small calorie value" is a better description. Why, we wonder, apart from the manufacturers' susceptibilities?

STOMACH LESIONS OF SYPHILITICS

Les Gastropathies des Syphilitiques. By Carlos Bonorino Udaondo. (Pp. 216; 19 figures. 32 fr.) Paris: Masson et Cie. 1936.

In this interesting monograph Professor Udaondo has brought together the literature on the subject of gastric lesions in syphilitics. Medical teaching in the matter has varied greatly over the years. In 1891 Chiari of Prague summarized the views of the time by asserting that lesions of the stomach may be provoked by syphilis, directly or indirectly. The direct lesions are rare, gummata and inflammatory infiltrations, usually in the submucosa; by fusion of gummata and the action of the gastric juice syphilitic ulcers may be formed, followed by scarring after healing occurs. The indirect lesions are due to alteration of the circulation following hepatic disease or to haemorrhages. The next step was to find the treponema in sections of the stomach obtained by operation or at necropsy. Technical difficulties have prevented much progress on these lines, and the therapeutic test of improvement under specific treatment which has been adopted clinically in diagnosis is under criticism. It is recognized, however, that lesions which are probably syphilitic may occur in the stomach—gummatous ulcers, a form of linitis plastica and hypertrophic gastritis—though there appears to be no consensus of opinion about the criteria necessary to establish the diagnosis. These lesions may occur in a patient with syphilis, and sections of the stomach wall must show gummata or syphilitic involvement of the submucous blood vessels.

Syphilitic lesions of the stomach have no characteristic which is an infallible guide in diagnosis. Gastric disturbances may also arise in patients with neurosyphilis. The therapeutic test is fallacious, though sometimes a most brilliant restoration clinically and radiologically may follow effective treatment.

DIAGNOSIS AND TREATMENT OF ORAL DISEASE

Oral Diagnosis and Treatment Planning. A Textbook for Students and Practitioners of Dentistry and Medicine. Edited by Samuel Charles Miller, D.D.S. (Pp. 620; 562 figures, including 15 colour plates. 30s.) London: J. and A. Churchill. 1937.

Under the editorship of Dr. S. C. Miller of the New York University College of Dentistry, twenty-two specialists have contributed the twenty-six chapters of which this book is composed. In a short preface the editor defends the multiplicity of contributors on the ground that "the magnitude of the subject made it impossible for any one mind to encompass it fully and properly"—a statement which might well make a student despair of ever mastering the intricacies of his profession; and, indeed, we cannot help thinking the book is over-specialized. However this may be, it contains a great deal of interesting matter. We note, as illustrative, a case of congenital diabetes showing extensive (pyorrhoeic) destruction of the alveolar bone in a child of 14 (p. 2); the daily progress of tongue cleaning in scarlet fever (p. 52); examples of cavernous sinus thrombosis following dental operations, one a case of "pulp-capping" (p. 200); a figure showing the solvent effects of fruit juice on the teeth (p. 263); and the description of "odontoclasia" as a special form of caries (p. 65).

With regard to the various subdivisions of the book, we note their comprehensive nature—for example, the chapter on diseases of the oral mucous membranes—and perhaps over-comprehensiveness, as in the list of habits that cause periodontal disease. The chapter on diagnosis for bridge work and bridge design is a thoughtful presentation of the possibilities of clean and aesthetic bridge work; that on the diagnosis of abnormalities of the temporo-mandibular articulation shows that the radiologist is obtaining considerable success in his attack on the difficult problem of making radiographs of that joint (we cannot see the "sloughing projection" in Fig. 10 (8)). The chapter on methods of laboratory diagnosis available to the dentist indicates how far dentistry has travelled since the days when it was a purely mechanical art; as Allen F. Newman says in his preface: "The dentist's responsibility, at present, is one of health service." We find the chapter on head pain hard to digest, and would like to see it presented in clearer form; and we wonder whether "cementoma" is the right word to apply to bone rarefaction on page 447, Fig. 7 (23).

IN PRAISE OF TEA

Opuscula Selecta Neerlandicorum de Arte Medica. Vol. XIV. Edited by M. A. Van Andel. (Pp. 465; illustrated.) Amstelodami Sumptibus Societatis. 1937.

The *Nederlandsch Tijdschrift voor Geneeskunde* was established to keep green the memory of little-known Dutch physicians who have deserved well of their country. This, the fourteenth volume of the *Opuscula Selecta*, like its fellows, is a monument of erudition and is well illustrated. Dr. Willem Piso is the first to be considered. He lived from 1611 to 1678, and went to Brazil as physician in the train of General Maurits of Nassau, who was appointed Governor of Brazil in 1636. Piso learnt the value of ipecacuanha in the treatment of diarrhoea and dysentery. No portrait of him has been traced hitherto, but Professor van Andel, who writes an introduction to his work, reproduces a miniature which he says, cautiously, he will not guarantee. The second article tells of Dr. Ten Rhyne (b. 1649). He published a valuable treatise on Asiatic leprosy, having gained an extensive knowledge of the disease whilst serving in Batavia. Dr. Schoute says in his

introductory notice that the remarks on the diagnosis of the disease and on the symptoms of its earliest stages are especially valuable.

The last three hundred pages of the volume consist of a reprint of the *Treatise about the most excellent herb Tea* by Dr. Cornelis Bontekoe (1647–85), which was printed at The Hague in the year 1678. The whole treatise is excellent reading. Dr. Bontekoe approaches his subject with a diatribe on contemporary doctors and an essay on good living, via Predestination to Life. Having thus proved himself to be a master of vituperation and a sound Calvinist, he proceeds to consider the effects of "tea water" on the different organs of the body and its value on the social customs of the Dutch in general. It is amusing though it is written in all soberness, and would have gladdened the heart of Dr. Johnson, for he says: "I have no scruple in advising [people] to drink fifty or a hundred or two hundred cups at a time. I have often drunk as many in a fore- or afternoon, and many people with me, of whom not a single one has died yet. But I do not think that anyone need imitate this. I only alledge it to show there is no harm in tea, so there is no reason to be afraid of drinking ten or twenty cups; it is not like wine or beer, which go to the head as the saying is." Dr. de Feyfer, who writes an introduction, points out that Bontekoe was hated very heartily by his contemporaries, who attributed his enthusiasm for tea to money supplied by the East India Company in return for propaganda which filled their coffers.

The volume as usual is printed in Dutch with an English translation on each opposite page. The English is idiomatic, and except in a few minor instances is accurate.

PHYSICAL PHILOSOPHY AND BIOLOGICAL PROBLEMS

Biology and the New Physics. A Plea for a Consistent Philosophy of Life. By C. J. Bond, C.M.G., F.R.C.S., F.L.S. (Cloth 2s. 6d. net; paper cover 1s. 6d. net.) London: H. K. Lewis and Co., Ltd. 1936.

There is no dearth of books explaining the modern conceptions of physics, but most of them are written by physicists and astronomers, and though the authors occasionally deal with biological problems, these excursions into unfamiliar territory are seldom happy, since they usually result in special prominence being given to highly doubtful experimental results. Biologists, on the other hand, have shown themselves averse to considering the implications of the recent advances in physics. This aversion has a simple historical explanation, because the whole advance of the biological sciences during the past century depended on the abandonment of the old vague vitalistic ideas and the interpretation of the obscure phenomena presented by living matter by means of the known laws of chemistry and physics. This method has yielded wonderful results, and biologists naturally cherish the belief that the same method if pressed far enough will solve the ultimate problems of the nature of life and evolution. They naturally find it disconcerting to be informed by physicists that the fundamental laws on which the whole structure of biological science has been based merely express statistical probabilities, and give little information regarding individual behaviour. Those subjects which have the smallest quantity of accurate data cherish their scanty possessions the most jealously, and it would seem possible that in the future the biological sciences may form the last home of pure determinism. For these reasons it is interesting to read an estimate of the effect of the changes in physical philosophy on the fundamental problems of biology written by one whose life experience has been concerned with biological material. Such a survey has been provided in the short volume entitled *Biology and the New Physics*, which contains an account of the presidential lecture delivered by Mr. C. J. Bond at the centenary meeting of the Leicester Literary and Philosophical Society. The range covered by the author is most simply indicated by his chapter headings: The atomic world, the inconceivably small; the astronomic sphere, the inconceivably vast; life and mind; the method of evolution; the existence of evil.

The author gives in less than 70 pages a bird's-eye survey of the salient features of a vast territory, and finally considers what help such a survey provides for the framing of a consistent philosophy of life. The consideration of this range of knowledge in this space may seem to some an unwarrantable audacity, but it must be remembered that most of the fundamental problems of life can be presented in a sentence and answered in a word, and the fact that mankind has quarrelled for thousands of years as to when the word should be yes and when no does not affect the simplicity of the problem that must finally be faced in each case. The general line of thought followed by the author is indicated by the following sentence:

> "This capacity for organization or arrangement of units which is associated with an entity or organism when functioning as a whole seems to depend on a basis of indeterminacy and, as we have already seen, from embryological, ontological, and other evidence, the organizing process itself seems to employ the experimental method."

Notes on Books

For its second edition the textbook on *The Diseases of Infants and Childhood*, by Professor J. P. CROZER GRIFFITH and Professor A. GRAEME MITCHELL, has not only been entirely revised and reset, but it is now issued in one volume instead of two. This has called for a certain amount of rearrangement. Material which may not be needed by the student in his daily work has been put into small type. References are now included at the end of each chapter, and these bibliographical summaries are a valuable part of the book. As with the first edition, this new version can be thoroughly recommended as a first-rate textbook on the subject of paediatrics. It is published by W. B. Saunders Co. at 42s.

The Lung, by WILLIAM SNOW MILLER (Baillière, Tindall and Cox, 34s.), would deserve high praise for the illustrations alone, of which many are original, and no fewer than twenty are coloured. But in addition the author writes with the experience behind him of forty-seven years' study of lung structure. This no doubt also accounts for a conciseness of style that has enabled an enormous amount of information to be included in comparatively little text without danger of straining the reader's attention. But let it be said at once, the book is mainly for the anatomy specialist. The clinician will miss that association of structure with function and disease which enables him to apply the information gained from the basic medical sciences to his daily work. The first chapter describes the gross anatomy of the lungs. The second and third, on the trachea and bronchi and on the intrapulmonary bronchi and bronchioli, contain the author's interesting reconstructions of carinal cartilages, the trachealis muscle, and of bronchial muscle. The fourth chapter describes in detail the air spaces, and gives the author's original models showing the existence of atria. The next four are devoted to the blood vessels, the lymphatics, the lymphoid tissue, and the nerves respectively. In another chapter is discussed the pleura, followed by a unique discussion of the architecture of the lung in terms

of key points—points where certain structures are constantly found. Finally Dr. Miller, in a historical sketch, traces the views that have been held by various authors on the arrangement of the air spaces from the seventeenth century to the present day.

Some readers may be glad to know of a clearly written little book *Business Affairs and Book-Keeping* by WINIFRED E. GILL, B.Sc. (Longmans, Green and Co.; 3s. 6d.). Part I, on business affairs, deals in turn with money and banking, law of master and servant, insurance, rates and taxes, law of landlord and tenant, and office management. Part II gives practical instruction in book-keeping, with special reference to household management.

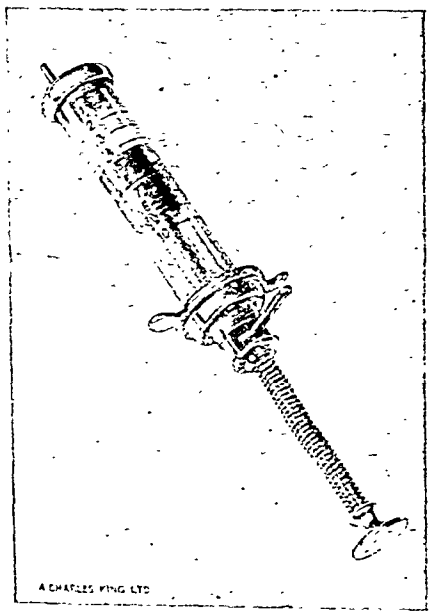
Medical Harrovians will like to hear of the appearance of a fifth edition of the *Harrow School Register* (Longmans, Green and Co.). This covers a period of ninety years of admissions to the school and is divided into two volumes, one for 1845–1898, the other for 1899–1937. The editor is Mr. John H. Stogdon, and the head master contributes a preface. The price of each volume is 15s. 6d.

Preparations and Appliances

NEW SYRINGE FOR INTRAVENOUS INJECTION

Dr. MASSEY DAWKINS (London, N.W.3) writes:

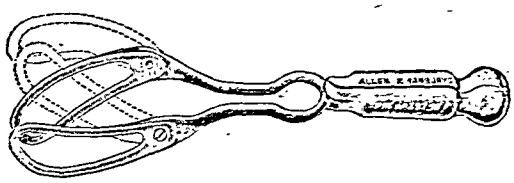
I have found the syringe shown in the accompanying figure invaluable for giving intravenous anaesthetics, or indeed for any intravenous injection. It is a modification of the ordinary 10 c.cm. Record syringe, but the piston rod has been extended and fitted with a spring. The spring tends to withdraw the



piston, but can be fixed in any given position by means of an annular catch, which can be put out of action by depressing it with the thumb. In practice the catch is depressed and the piston automatically withdraws the anaesthetic solution from the ampoule. When the amount to be injected has been decided the catch is set for that amount. The needle is then pushed into the arm and the catch released; it will then be found that the piston will not suck back until the vein is entered, since, if the needle is outside the vein, the surrounding tissue is sucked against the bevel of the needle and the piston remains stationary. Thus it is almost impossible to give a perivenous injection. A further advantage of this syringe is that the whole procedure can be effected with one hand. This instrument has been made for me by Messrs. A. Charles King Limited, 34, Devonshire Street, W.1.

REVERSIBLE PELVIC CURVE FORCEPS

Dr. DAVID PRICE (Somerset) writes: Delay in the second stage of labour, with consequent maternal exhaustion, can be terminated safely by the use of reversible pelvic curve forceps, which enable one to rotate the foetal head without damage to maternal tissues and extract it without removal of the

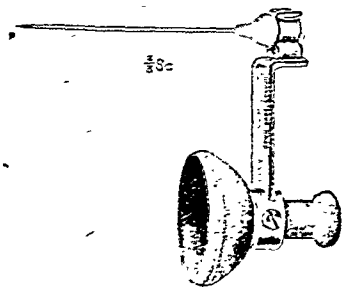


blades (a process necessary in the existing rigid types of midwifery forceps, and involving much manipulation and often return of the foetal head to its occipito-posterior position). When there is delay in the second stage and a large caput it is not easy to diagnose the position of the occiput. I apply the forceps and make traction; if that "no advance" feeling ensues, I press upwards and try rotation in the easiest direction. If no rotation is easily obtained a manual examination is made, but it is surprising how often easy rotation is accomplished. The handles then swing on their hinges well forward, and extraction is accomplished by one steady pull. The degree of tension of the hinges can be controlled by a turn-screw. I find that if one can reverse the curve by a sharp jerk the tension is about the best for application. Experience of the use of this instrument has proved other advantages: (1) application of the second blade in any maternal position is easy; (2) the blades find the easiest route into position for locking without force; (3) there is a minimum of pressure signs upon the scalp and face even after a difficult extraction. The instrument is made for me by Messrs. Allen and Hanburys Ltd. of London, E.2.

NEEDLE HOLDER FOR THORACOCENTESIS

Dr. M. W. LLOYD OWEN, M.B. (London, W.2), writes:

In aspirating fluid from the chest it is often found that the needle will not stay in the position inserted at right angles



to the chest wall. When the aspiration is being performed with a two-way syringe the needle has to be held in position by an assistant. The necessity for an assistant can be overcome by the use of a simple but effective sucker apparatus with a metal needle attachment which keeps the needle in the desired position. It sometimes happens that the sucker part of the apparatus will not adhere properly in those patients with rather prominent ribs, but this difficulty can be overcome by moistening the sucker a little before applying it to the chest wall. The instrument has been made for me by Messrs. Down Bros. of London, from whom it can be obtained.

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SOME PROBLEMS OF THORACOPLASTY

The principles underlying the treatment of pulmonary tuberculosis by thoracoplasty have within recent months been the subject of comment in these columns.[1] In his admirable survey before the Tuberculosis Association Mr. George Mason stressed[2] a difficulty which arises with this operation—namely, that of keeping the "filleted" chest wall adequately immobilized. In view of this and the enormous rise in operative mortality among patients who do not fulfil the high standards of the ideal indication, the following conclusion of Mr. Mason's should be treated with caution: "The limitation of our activities to favourable cases, although good for our statistics, would be a cowardly desertion of those numerous cases for whom the operation offers the only prospect of recovery." At all events, the advice contained in it should be followed only by surgeons with much experience of thoracoplasty, and only after careful consultation with a tuberculosis physician who has had the patient under observation for a long time.

The patient to whom thoracoplasty is suggested has the right to ask three questions which the medical attendant must be prepared to answer. (1) How long am I likely to live if I do not submit to the operation? (2) What is the risk of my dying from the operation? (3) If I get over the operation what are my chances of being completely cured? Reliable statistics have been published from abroad giving the average length of life of the patient with chronic pulmonary tuberculosis with cavitation for which thoracoplasty is recommended. It is, however, only an "average," and many factors determine the length of life, such as the patient's general and psychological condition and his economic and social environment. The patient himself is apt to accept the more optimistic of the two extremes on which the average is based, and the answers to the last two questions must therefore compare favourably with this optimistic assumption. It is not enough to give an operative mortality of "only" 15 per cent. and a cure of 10 to 20 per cent. on the ground that the outlook is "otherwise hopeless." The figure of operative mortality varies greatly in different statistics. Among the most favourable is that of Archibald in 1927—about 4 per cent. in "favourable" and "doubtful" cases. In the recently published analysis of all the thoracoplasties done at the Brompton Hospital since 1922[3] the operative deaths amount to 14.6 per cent. This figure is on the high side, but it would be unfair to make comparisons with the figures of other workers, owing to the difficulty of obtaining a standard for the term "operative mortality," apparently used by some surgeons with much elasticity. Another result of importance is the percentage of "practical cures," "returned to work," or "living and well" in the survivors. Sellors in 1933 collected 3,500 cases from various sources: 45 per cent. of these had returned to work. In 1927 Archibald had "practical cures" in 66 per cent. of "favourable" cases and 38 per cent. in "doubtful" cases. Gravesen in 1930 claimed 42 per cent. cures. Sauerbruch in 1935 stated[4] that until recent years the number of permanent cures in his clinics amounted to 70 to 80 per cent.: "the average case operated on being of a poorer type, this percentage is not now so high; it is still, however, 40.6 per cent." Of the 437 patients operated on at the Brompton Hospital between 1922 and 1935 only 14.9 per cent. are in the category "living and well." The term implies that "he or she is living and has lived for at least one year the ordinary life of his or her particular class, and if this involves working, as in the vast majority of cases it does, that he or she is working full time; and, secondly, that there are no symptoms whatever attributable to pulmonary tuberculosis." Is this great difference to be attributed merely to dissimilarity in definition? No doubt the staff at Brompton will soon elucidate this problem, and a fuller report will be of great interest.

In the meantime it is permissible to speculate on the factors that determine the number of cures. As none but highly skilled surgeons would attempt the operation, technical operative skill can be a factor of only minor importance. Four other factors must, however, be considered, each of which might influence either or both the operative mortality and the percentage of cures. In the selection of patients the general condition will undoubtedly affect the former, but an ultimate cure is more likely to be determined by the type of lesion in the lung. Considerations of the fitness of the patient for an operation have perhaps tended to obscure

[1] *British Medical Journal*, 1936, 2, 286.
[2] *Tubercle*, 1937, 18, 255.
[3] *Brompton Hosp. Rep.*, 1936, 5, 102.
[4] *Lancet*, 1936, 2, 723.

the importance of detailed investigation of the cavity to be collapsed, and existing methods—tomography, kymography, and bronchography—have not been made full use of. It is possible to overlook the fact that some cavities will not close completely whatever the type of thoracoplasty performed. Perhaps this would be better realized if there were more opportunity of examining the lungs of people dying of pulmonary tuberculosis. There can be no question that the type of operation is intimately related to the end-results, as recent discussions have shown. But these discussions have unfortunately also produced no consensus of opinion.

Whereas some surgeons would favour the partial operation whenever possible, others maintain that the complete operation is more likely to prevent relapse. Though some now insist that complete collapse of the upper lobe can often be obtained only if the rib resection is associated with an extrafascial apicolysis, others argue that the paravertebral operation properly carried out does all that is needed. But apart from this it should be stressed that the aim of a thoracoplasty should be to render the sputum negative, as determined by culture and, if necessary, by examination of the gastric contents. If that result is not obtained further operative procedures must be considered, even at the risk of increasing the total operative mortality. It is probable that these supplementary operations are often done in Sauerbruch's clinics and may account for his high proportion of cures. Finally, the social and economic status of the patients in any series must be taken into consideration in comparing results, since "after-care" plays an important part. This factor alone would favour greatly Gravesen's figures as compared with those at the Brompton Hospital. Thoracoplasty is a confession of therapeutic failure. Indeed this is true of much of the surgery of chronic conditions. But in view of the present state of tuberculosis control the usefulness of the operation has not yet reached its peak.

WORLD-WIDE PREVALENCE OF ACUTE POLIOMYELITIS

Simultaneous reports of a high incidence of poliomyelitis in several countries far apart may well cause health authorities in this country to wonder when our customary sporadic cases in autumn each year are to become a major epidemic. In recent weeks in Melbourne alone 185 cases have been reported, with thirteen deaths, of which four were in adults. The Australian outbreak appeared first in Victoria, and steps were taken to prevent the entry of children without a medical certificate of twenty-one days' isolation into New South Wales by means of a police patrol along the border, but despite every measure the disease has secured a firm hold in Melbourne and shows no sign of abating. The epidemic now raging in Chicago appears to have originated in the return to the city of school children from summer camps, where the disease had been prevalent for some time. The chief administrative action taken by the Board of Health has been to postpone the reopening of the public schools and parish schools until the outbreak has terminated, or, at least, until the number of fresh cases has appreciably diminished. In August a total of 109 cases were reported, which is ten higher than that of the record month in the 1916-17 epidemic. Almost simultaneously Ontario has been experiencing the worst epidemic of poliomyelitis in its history; so far the number of cases reported has reached 700, of which the majority are in Toronto. Here, too, the chief single measure adopted by the health authorities has been to defer the reopening of the schools after the summer holidays. The only European country to suffer from a severe visitation of poliomyelitis in recent years has been Denmark, particularly in 1934. At present there is a considerable prevalence of the disease both in Copenhagen and in country districts, but, on immunological grounds, it is unlikely that a large epidemic will follow.

Some lessons in poliomyelitis control may be learned from the experience of Manitoba, which has been fully described in a report[1] on the epidemic in 1936 in that Province. While it proved to be the largest epidemic in its history with a case rate of 75.7 per 100,000 of the population, it was relatively mild in comparison with the Danish epidemic of 1934, with a rate of 124.9 per 100,000. It is noteworthy that the incidence in Manitoba was twice as high in the rural areas as in certain urban districts (notably Winnipeg, which is the largest urban centre); the explanation is probably to be found in the fact that Winnipeg experienced an outbreak of considerable size in 1928, at a time when the rural areas mostly escaped. While the highest incidence fell on the 5-10 years age group, the case fatality was greatest at ages 15 to 19 years. In all, there were 539 cases with a case fatality of 6.1 per cent. In 57 homes (12 per cent.) more than one case occurred in the family, accounting for nearly 25 per cent. of the total. In agreement with general experience, an increasing proportion of cases were diagnosed in the pre-paralytic stage as the epidemic progressed, due to the fact that both

[1] *Can. publ. Hlth. J.*, 1937, 27, 363.

the general public and the medical profession became "poliomyelitis-conscious," while the case fatality fell steeply. It is only natural to ascribe this lowering of fatality to immune serum whenever it is administered, but it is common knowledge that a like fall frequently occurs whether serum is given or withheld. The conclusion that the favourable results described are due to intramuscular inoculation of 20 c.cm. of immune poliomyelitis serum must be accepted with considerable reserve, particularly in view of the fact that a positive diagnosis of poliomyelitis was frequently made on the finding of headache, fever, gastric upset, irritability, and stiffness of the neck or back, without investigation of the cerebrospinal fluid. Indeed, the findings in the cerebrospinal fluid were often observed to be equivocal; of 170 fluids examined, 22 per cent. had less than ten cells per c.cm. Immune serum does not appear to have been employed in passive immunization of contacts, probably because of lack of supplies; nasal sprays of picric acid solution, such as have been previously described in these columns,[2] appear to have been widely employed, but the authors of the Manitoba report give no details of cases and make no comment on its efficacy. On the whole, the authorities concerned were satisfied that the prophylactic and curative measures they employed were effective in checking the disease or, at least, in averting its worst consequences.

[2] *British Medical Journal*, 1937, 1, 1126.

BOECK'S SARCOID

Because of some histological resemblance to sarcoma, Boeck in 1899 designated as multiple benign sarcoid of the skin the condition which Besnier had described as lupus pernio. In addition to the skin lesion these earlier workers noted that lymph nodes, mucous membranes, bones, and internal organs might be involved, and on the basis of this recognition, as also on the supposition that the lesion was tuberculous in origin, Boeck suggested later the name "benign miliar-lupoid." While the dermatologists were concentrating on their special aspects of this problem, radiologists were reporting unusual changes in the bones of the hands and feet, which Kreibech in 1904 definitely associated with lupus pernio. It was, however, not till 1920, when Jüngling gave a detailed description of these bone changes, that their nature was clearly appreciated; and eight years later this observer recognized that the condition he had described as ostitis tuberculosa multiplex cystica had indeed a close association with the cutaneous and glandular affection known as Boeck's sarcoid and lupus pernio. In the meantime Schaumann had made extensive studies of the glandular part of these associated lesions. He concluded that the affection was a generalized lesion of the reticulo-endothelial system, and because of its superficial resemblance to Hodgkin's disease he named it benign lymphogranulomatosis, believing that the affection ran a mild course and, further, holding that it was tuberculous in origin. From the voluminous literature on the subject (Kissmeyer in 1932 reviewed 200 cases) it appears that the affection is one that starts in early adult life. The progress is insidious; finally the disease produces obvious changes, most often in the skin, in the lymph nodes, in the bones of the hands and feet, or in the lungs. In a few instances the earliest pronounced symptoms were referable to the lungs. The mucous membrane of the nose, the nasopharynx, the larynx, and the conjunctiva may be involved, and the tonsils are not infrequently affected. Ocular complications in the form of bilateral iridocyclitis are being reported with increasing frequency. The unity of these diffuse manifestations lies in the characteristic histological appearance of large, palely staining epithelioid cells arranged in the form of miliary tubercles, sometimes lying as isolated structures in a comparatively normal tissue and sometimes occurring in groups or strands. These collections of cells may become so large as to replace most of the normal tissue. They are not outlined by an inflammatory zone of lymphoid cells; in fact, the absence of inflammatory reaction in the surrounding tissue is a characteristic feature. Although mild necrosis of some central cells may be present, caseation is always absent and healing may occur through fibrosis. Longscope and Pierson,[1] in an excellent survey of the subject, report eight cases of their own, and suggest that uveo-parotid fever, with its involvement of lymph nodes and uveitis, should be regarded as yet another manifestation of Boeck's sarcoid. In one of their cases with involvement of the lung there were bilateral iridocyclitis and swelling of the parotid gland; histological sections of a lymph node and of the parotid showed lesions of the type of Boeck's sarcoid. They quote two other cases recently recorded by W. J. B. Slot which have a similar association. In a study on the clinical and histological similarity of Boeck's sarcoid and uveo-parotid fever T. K. With[2] urges the same unifying conception. Additional evidence on the same lines comes from a newly reported case of uveo-parotid fever by W. C. Thompson.[3] In all these discussions the question of tuberculosis looms large. Schaumann,[4] who has studied deeply the general aspect of the affection, believes, as already noted, that it is a mild tuberculosis. On the other hand, dermatologists have been impressed by the similarity of the bone changes to those seen in leprosy, and Jordon and Osborne[5] uphold the dual aetiology, both tuberculosis and leprosy, in a full account of the affection given from the dermatological aspect. Longscope and Pierson cautiously conclude that the aetiology is undetermined; they are not impressed by the evidence brought forward in favour of tuberculosis. Boeck's sarcoid is, of course, not the only dermatological condition that of late years has been shown to have general implications. The conception of tuberosclerosis with its widespread cerebral involvement

[1] *Johns Hopk. Hosp. Bull.*, 1937, 60, 223.
[2] *Acta Ophthal.*, 1937, 15, 104.
[3] *Arch. Intern. Med.*, 1937, 59, 646.
[4] *Brit. J. Derm. Syph.*, 1936, 48, 390.
[5] *Arch. Derm. Syph.*, Chicago, 1937, 35, 662.

arose out of Pringle's adenoma sebaceum, and what appears to be another association is reported by Albright, Butler, Hampton, and Smith[6] in a recent issue of the *New England Journal of Medicine*. They describe five cases of their own and draw on ill-defined cases from the literature to illustrate what they consider a new syndrome characterized by: (1) areas of pigmentation on the skin; (2) multiple bone cysts, frequently localized to one bone, having the features of osteitis fibrosa; (3) precocious puberty in females, but apparently not in males. This association of skin and bone lesions has some superficial resemblance to the associations of Boeck's sarcoid, but their histology and course appear to be wholly different.

ALCOHOL AND MOTOR ACCIDENTS

Estimations of blood alcohol have been used for several years in Sweden as a legal test of alcoholism in motorists involved in accidents. The method has been adopted in Germany, and Dr. K. Hoffmann has published a review of the results obtained during the past four years.[1] His report deals with several thousand tests of blood taken from motor-car drivers. The results of clinical and chemical examinations of about 2,500 cases are set out in a table. The clinical examination divided the cases into three groups: (i) sober—that is, unaffected by alcohol (36 per cent.); (ii) slightly affected (45 per cent.); and (iii) definitely intoxicated (hochgradig Alkoholbeeinflussung) (18 per cent.). Results of blood tests can be divided into three groups of comparable sizes: (i) less than 1 mg. alcohol per c.cm. blood (34 per cent.); (ii) 1 to 2 mg. per c.cm. (56 per cent.); and (iii) more than 2 mg. per c.cm. (10 per cent.). It is usually stated that a concentration of alcohol in the blood of 1 mg. per c.cm. produces symptoms of intoxication in about half the population. This concentration is equivalent to a total body content of alcohol of about 50 grammes in a person weighing 70 kilogrammes, and this amount of alcohol is contained in about three "large whiskies" or 3 to 4 pints of beer. The figures under discussion show that half the persons with a blood alcohol content of 0.6 to 0.8 mg. per c.cm. were slightly under the influence of alcohol, while half those with a blood alcohol content of 2.2 mg. per c.cm. were definitely intoxicated. These results suggest that the class "slightly under the influence of alcohol" must include a wide range of conditions. The clinical and chemical tests are in fair agreement. For example, out of 750 persons with less than 1 mg. of alcohol per c.cm. of blood only ten were found to be definitely intoxicated, whereas out of 250 persons with more than 2 mg. per c.cm. 130 were classed as definitely intoxicated and only nineteen as sober. Individuals, however, showed striking variations—for example, three persons with less than 0.4 mg. alcohol per c.cm. blood were found to be definitely intoxicated, while five individuals with more than 2.4 mg. per c.cm. showed no signs of alcoholism. Individual variation as regards susceptibility to alcohol is notorious, and the blood analyses confirm this familiar fact, since they indicate that some individuals are more affected by an amount of alcohol corresponding to one "large whisky" than others are by six times this quantity. In the past it has been suggested that tolerance to alcohol is due chiefly to delayed absorption, but these results imply a definite tolerance of the brain to alcohol in the blood. The results therefore show that the alcohol content of the blood does not with any certainty indicate the degree of intoxication. On the other hand, it does provide a fairly accurate estimate of the amount of alcohol that the subject has drunk recently. The medical profession is only too well aware of the unsatisfactory results of the estimation of alcoholism by clinical examination. The contradictory medical evidence so often given in law courts proves this. The estimations of blood alcohol at least provide objective data which indicate strong probabilities. If a man has a blood alcohol content lower than 1 mg. per c.cm. he is very unlikely to be intoxicated, and if he has more than 2 mg. per c.cm. it is very unlikely that he is in a fit state to drive a car. The compulsory taking of blood samples is apparently contrary to English common law, but it would be a considerable advance if blood samples given voluntarily could be tested officially. The amount of blood needed for the test is only a few drops, and since the rate of metabolism of alcohol in the body is fairly constant, the alcohol concentration in the blood at the time of an accident can be estimated with fair accuracy from a sample taken some hours later. Objective evidence of this type would certainly assist in those difficult and unfortunate cases where Dr. A. states that the accused was intoxicated and Dr. B., who examined the accused an hour later than Dr. A., states that he was perfectly sober.

[1] *New Engl. J. Med.*, 1937, 216, 727.
[2] *Alkoholnachweis bei Verkehrsunfällen*. Dr. Kurt Hoffmann. Berlin: Urban and Schwarzenberg. 1937.

PNEUMONIA TO-DAY

Dr. Campbell Howard is justified in devoting a monograph to the diagnosis and treatment of pneumonia,[1] not only because, as Osler said, it has replaced consumption as the "Captain of the Men of Death," but because its study involves the principles of all medical diagnosis and treatment. In this respect it has replaced typhoid fever, now a comparatively rare disease, in lectures on systematic medicine. The modern history of pneumonia dates from the discovery of the pneumococcus in 1884, which was followed by the theory of a primary septicaemia, and then by the recognition of types in 1910. It is perhaps unfortunate that the number of types has now reached twenty-nine, according to some observers, for this to a large extent deprives typing of the clinical value it possessed so long as the classification into four main types held the field. As to the primary septicaemic nature of pneumonia, Dr. Howard appears to be doubtful regarding the demonstrable presence of the cocci in the blood stream as an indication of the severity of the disease (which it undoubtedly is) and as a secondary event (which is more

[1] *The Diagnosis and Treatment of Pneumonia*. Reprinted from Oxford Monographs on Diagnosis and Treatment. By Campbell P. Howard, M.D., C.M., F.R.C.P. & S.Can. H. Milford, Oxford University Press. 31s. 6d.

controversial). He quotes the evidence of bronchoscopy, which in fifteen cases revealed the presence of an atelectasis, apparently secondary to a bronchitis, and of *x* rays, which may show a displacement of the mediastinum and diaphragm towards the affected side in the early stages of the disease. This view would seem to upset the classical distinction between lobar-pneumonia and bronchopneumonia, which the German school was once so unwilling to accept. That atelectasis occurs in the early stages of influenzal pneumonia of the epidemic type is undoubtedly true—but this is generally regarded as a confluent bronchopneumonia. Dr. Christian, in his introduction to the monograph, attributes the therapeutic nihilism of the recent past to the predominating influence of morbid anatomy, the post-mortem examination revealing a condition apparently impossible to treat successfully. That was the consequence of studying end-results, but even to-day there is too much loose and contemptuous talk about "the bottle of medicine," which ignores the fact that as the body is continuously regulating itself by chemical means there is nothing intrinsically absurd in an attempt to modify its reactions by drugs. Dr. Howard therefore does not disdain to devote a section to special methods in the treatment of pneumonia. Among the non-specific methods he speaks cautiously concerning optochin, but does not mention transpulmin, another quinine derivative which seems specially useful in old or debilitated subjects. There is a full review of specific measures, which comes to a rather more optimistic conclusion as to the benefits of Felton's serum than is generally held in this country. The author is very doubtful as to any therapeutic value of vaccines in pneumonia, apart possibly for prophylaxis.

THE LEAGUE OF NATIONS AND NARCOTIC DRUGS

The serious situation in the Far East by reason of the increasing production of, and illicit traffic in, narcotic drugs has recently been reviewed by the Opium Advisory Committee of the League of Nations. China claims to be pursuing a six-years' plan for restriction of poppy cultivation, which was launched in 1934, and in two provinces, eight districts, and three municipalities the use and sale of opium are absolutely prohibited. There are, however, still 3,700,000 registered smokers in China and 300,000 addicts were under treatment in 1935. In the provinces now subject to Japanese influence the systematic increase of poppy cultivation and of the sale of opium is stated for the past year to have "attained alarming proportions." Illicit traffic in opium, morphine, and heroin is rapidly increasing in Manchuria and Jehol and is encouraged as a fruitful source of revenue. It was estimated that 500 kilograms of heroin were exported each week from Tientsin and that 90 per cent. thereof went to the United States. Canada also is suffering from this flow of narcotics from the Far East to the Pacific coast, and there has been no improvement during the last twelve months. The Advisory Committee recorded its alarm at the situation in the Chinese provinces under Japanese jurisdiction as constituting a real danger to the whole world. As regards the legitimate manufacture of morphine, heroin, and cocaine it would appear, from the statistical returns made by the Governments parties to the conventions of 1925 and 1931, that the annual production of these alkaloids now approximates closely to the level of legitimate world requirements as accepted by the League. It is somewhat disquieting to learn that poppy straw from the dried plant is being increasingly utilized as raw material for the manufacture of morphine. The Advisory Committee has been moved by a resolution of the International Labour Conference to tighten up the control of opium used for smoking in territories where the sale of "prepared" opium is still authorized, with a view to suppress smoking of opium among workers. There appears to be indisposition to proceed with the convening of an international conference on limitation of production of raw opium, as contemplated by the Council and the Assembly of the League of Nations. While the Governments concerned have stated that they are "prepared to agree to far-reaching measures for the final suppression of opium-smoking" the Advisory Committee is anxious for further consideration and revision of the information already at its disposal before embarking on a conference "whose reference should be sufficiently wide to include any problem relating to the production and use of opium."

MAGNESIUM SULPHATE TREATMENT OF ECLAMPSIA

The administration of magnesium sulphate by subcutaneous injection has of recent years been fairly widely used to control the fits in eclampsia. Professor W. Stroganoff and Dr. O. Davidovitch[1] have collected from the American and European literature reports on 449 cases so treated with a mortality of 9.1 per cent. Recent Russian medical literature mentions 245 such cases in which there was a mortality of 3.3 per cent. These results produced a favourable impression on Stroganoff, who now reports 200 cases treated on the lines which he has previously described—using morphine and chloroform, with venesection and artificial rupture of the membranes—with the substitution of magnesium sulphate for chloral hydrate. The magnesium sulphate was injected subcutaneously thirty minutes after the first injection of morphine. The average dose was 6 grammes, preferably in the form of 40 grammes of a 15 per cent. solution, followed by a further similar injection in five hours if there had been another fit. The dosage was diminished or the injections discontinued if the fits ceased. If the fits went on, the patient received further doses, the maximum advisable being a total of 24 grammes in twenty-four hours. It was found that smaller doses often failed to control the convulsions. One patient who died following rupture of the lower segment of the uterus, after having had sixteen fits, had been given only 2.6 grammes. In the 200 cases which Stroganoff records there were six deaths, a mortality of 3 per cent. The average duration of stay in hospital was 13.7 days. Sixty-nine of these patients had normal deliveries, artificial rupture of the membranes was necessary in seventy-three cases, forceps delivery in fifty-four

[1] *J. Obstet. Gynaec. Brit. Emp.*, 1937, 44, 289.

cases, and there were fifty-six venesections. Stroganoff finds magnesium sulphate a powerful means of combating eclampsia and hopes that he will succeed eventually in reducing the mortality from eclampsia to below 0.5 per cent. for early cases in which severe complications are absent, and to a figure between 2.5 and 4 per cent. for all cases. He does not commit himself as to whether magnesium sulphate or chloral hydrate is the more efficient in treating eclampsia. He does state, however, that the former has the more certain effect in stopping fits, although he admits that while the magnesium sulphate was given thirty minutes after the first injection of morphine, chloral hydrate was not administered until an hour after the morphine. In certain rare cases the injection of magnesium sulphate was found to cause alarming symptoms, such as acute cyanosis, dyspnoea, and a feeble pulse. Should this happen it is advised that 10 grammes of a 5 per cent. solution of calcium chloride be given intravenously. Other complications included the formation of abscesses at the site of injection; for this reason the injections were subcutaneous rather than intramuscular. One further striking finding was that whereas the total mortality among the 200 cases was only 3 per cent., in the ten cases of multiple pregnancy the mortality was 40 per cent. Stroganoff appeals for further investigations into the treatment of eclampsia by magnesium sulphate, both with chloroform and morphine, and with ether but no morphine.

GIGANTISM

Gigantism is a rare condition of interest not only to the visitor to circuses but also to the medical man. A recent addition to the literature on this subject is supplied by Dr. H. Gray,[1] who has reported a case under the title of "The Minneapolis Giant." The patient's paternal grandfather, the Norwegian giant, was reputed to be 8 ft. 4 in. in height, while his father's height was variously stated by the patient to be 7 ft. 6 in. and 6 ft. 4 in. and his mother's 6 ft. 2 in. The patient himself was aged 46, was obviously acromegalic, measured 7 ft. in height, and weighed 19 stone; at the age of eight he was 6 ft. in height. A year later he started travelling in shows all over the world, and appeared in carnivals, circuses, and "so many movies that he cannot remember the names of any, except Harold Lloyd's *Why Worry?* in 1923, when he was advertised as being the second tallest man in the world," a claim which the author points out would seem to indicate insufficient information about other living giants. His habits were irregular, and although he seldom drank alcohol, on one occasion he was arrested by eight policemen because he acted a little peculiarly, having consumed by his account "maybe five or six cases of whisky." In jail his breakfast consisted of two gallons of coffee, of which beverage he was inordinately fond. His muscular strength was never remarkable, his memory was poor, he had had bitemporal hemianopia for the last fifteen years, and for five years epileptic convulsions and uncinate fits. He only noticed the enlargement of his hands and feet at the age of 31, five years after his acromegaly was recognized at the Mayo Clinic—this extraordinary delay in a patient's appreciation of the enlargement of his extremities was also observed by Dr. Leonard Mark in his book on his own case. The hair of the Minneapolis giant was of feminine distribution, and he seldom needed to shave; his penis was infantile, and his testes small and soft. The pituitary fossa was large, but there was no evidence of erosion of the bone. The basal metabolic rate was minus 17 per cent. His condition was considered to be due to a tumour of the eosinophil cells of the anterior lobe of the pituitary. Early in life this had been manifested by simple gigantism with destruction or inhibition of the gonad-stimulating cells and consequent failure of sexual development and lack of hair. After a period of more or less arrest the tumour evidently began to grow again, causing acromegaly and pressure on the chiasma with optic atrophy and bitemporal hemianopia. Among taller giants than the one referred to here may be mentioned the Gallatin giant (8 ft. 6 in.) reported by Lackey in 1899, the Irish giant (8 ft. 6 in.) reported by Cunningham in 1891, the Alton giant Wadlow (8 ft. 5 in.) reported by Barr in 1936, Ranke's giantess Wehde (8 ft. 4½ in.) and the Austrian giant (8 ft. 4½ in.) reported by Topinard in 1885. Gigantism has been described as acromegaly during the period of growth, and can only occur before the epiphyses have united. Because of the presence of a large and extremely vascular thymus in cases of acromegaly, some of the earlier observers regarded this condition as primarily due to excessive activity of the thymus, the enlargement of the pituitary being considered a secondary change. It is generally accepted now, however, that the anterior lobe of the pituitary is the growth regulator of the whole body, and that both gigantism and acromegaly are due to hypersecretion of the eosinophil cells of the anterior lobe, which may either contain an eosinophil adenoma or show hyperplasia of the eosinophil cells without any pituitary enlargement. Experimental evidence of the growth-promoting power of the anterior pituitary was obtained by Evans and Long, who first prepared extracts of the gland capable of producing gigantism in young rats.

[1] *Ann. intern. Med.*, 1937, 10, 1669.

Major-General William P. MacArthur will succeed Lieut.-General Sir James Hartigan as Director-General of Army Medical Services when the latter completes his tenure of office on March 1, 1938.

The Prime Minister will inaugurate the national campaign to encourage the wider use of the health services at a reception given by the London School of Hygiene and Tropical Medicine on the evening of Thursday, September 30. His address will be broadcast on the National wave-length at 9.30.

We have to announce with great regret the death in Chicago on September 2 of Dr. George H. Simmons, Editor Emeritus of the *Journal of the American Medical Association*. An obituary notice, with portrait, will appear in our next issue.

ANAESTHESIA IN GENERAL PRACTICE

This is one of a series of articles, contributed by invitation

ANALGESIA IN MIDWIFERY

BY

R. J. MINNITT, M.D., D.A.

The time has passed when the obstetric practitioner can satisfy the requirements of women in labour simply by committing their mental and physical sufferings to the care and moral support of a good nurse. The public is becoming increasingly aware that much can be done for the relief of pain, and an article on recent methods employed for the purpose is therefore justified. Two main types of administration are available: (1) drugs given by the oral route or hypodermically, and (2) inhalational analgesia.

Drugs

"Twilight sleep" is the term applied to a morphine-scopolamine narcosis in which an amnesic state is produced. It must be clearly understood that the labour is not painless, but when the narcosis is successful the patient should have no recollection of labour. The objection to its use in general practice is that constant supervision is necessary. There may be increased danger to mother and child unless the dosage has been very carefully gauged. This is controlled by strict observation of the patient, the technique being as follows.

When the pains are recurring at regular intervals the initial dose of morphine and hyoscine is administered by hypodermic injection, an average being morphine 1/4 grain and hyoscine 1/150 grain. The indication for the amount of morphine required below this is estimated at about 1/30 grain per stone of body weight. No more morphine is given, but at definite intervals the patient is roused and shown some common object—for example, a cup and saucer—and it is then noted what her response is when asked what she has seen. This is called the memory test. No further injection of scopolamine is administered during amnesia, but when this passes off 1/450 grain is given. The full effect of the drug is obtained when there is complete loss of memory. The patient is then usually flushed and the pupils dilated. Sleep occurs between the pains, but there is restlessness and groaning while they are present. After three injections of hyoscine, which are generally at hourly intervals, a longer period should elapse before another is necessary. Fluids will be frequently taken, as the drug causes extreme thirst, and attention must be paid to the bladder.

Nembutal (capsules 1½ grains each). This is administered orally, the technique being similar to that employed in twilight sleep. The initial dose in the average case is two capsules, with subsequently one capsule at three-hourly intervals, as required.

Sodium amytal (capsules 3 grains each). This drug is not as readily excreted as nembutal, and therefore gives a longer hypnosis. The initial dose ranges from three to six grains, and is repeated as indicated.

Sodium evipan (ampoules 1 gramme to be dissolved in 10 c.cm. of distilled water). Intravenous injection is the method employed, great care being exercised in administration to ensure an efficient airway. Small doses of 2 c.cm. produce a condition of twilight sleep, and with larger doses there is complete anaesthesia for delivery.

With all these drugs there is risk of respiratory depression, and therefore respiratory stimulants, such as carbon dioxide and coramine, should be at hand. It should be more generally recognized that the only drug we have that is truly analgesic is opium. Scopolamine and the barbiturates are merely amnesic in their action. Consequently, although relief is obtained from the pains of labour, it is in proportion to the loss of memory and the degree of hypnosis that these drugs are found successful. They should never be prescribed where liver or kidney damage is suspected.

Inhalational Analgesia

Chloroform capsules (or brisettes, 20 minims of chloroform in each). One of these is crushed and inhaled by the patient at the onset of a pain. Some experience is necessary in timing the administration to obtain good results, and it is a convenient way of controlling a single dose of chloroform after the fashion of the time-honoured method of dropping the anaesthetic on the mask. As chloroform has a toxic action on the liver and heart muscle it is not recommended that it should be continued for any lengthy period.

Gas and Air Analgesia

Nitrous oxide gas is both analgesic and amnesic at the same time, and does not have any toxic effect on the patient. In my opinion the best method of giving relief is by the administration of gas and air in the right proportions. It is essential to have a reliable apparatus, which is described below.

Nitrous oxide is supplied in steel cylinders of different capacities: 50 and 100 gallon sizes are the most suitable. They are of two types: (*a*) straight valve, where the key for turning on the gas fits on the spindle at the top of the cylinder, the outlet being at the side, and (*b*) angle valve, where the spindle is at the side and the gas flows from the top. As nitrous oxide in the cylinder is a liquid under pressure of between 700 and 800 lb. per square inch, an efficient reducing valve is essential to make the gas available.

APPARATUS

This consists of the reducing valve, which allows gas to be delivered to a small rubber bag enclosed in either a metal drum or wooden box. An automatic valve causes the flow to cease when the bag is full. As soon as the bag deflates through inhalation more gas is allowed to enter. The outlet of the machine is divided into two channels—one for the passage of gas and the other for the admission of air through small holes. A check valve intermits the flow, and is only lifted when a fresh supply of gas and air is inhaled, thereby preventing an escape while the patient exhales. The whole action is controlled by inspiration. The holder fitted to the face mask has in it a finger hole, which is occluded by the patient herself, but when the finger is raised air only is inhaled. This is connected to the machine by concertina tubing. The amount of gas intermittently consumed is on the average 35 gallons per hour. In a series of private

practice cases the cost of gas averaged about ten shillings for a period of five hours. The analysis of the mixture is approximately 45 per cent. nitrous oxide in air.

Two models are illustrated: Fig. 1, size 12 in. by 8 in. by 18 in., weight about 15 lb. without cylinders; Fig. 2, size 16½ in. by 7½ in. by 4¾ in., weight without cylinder

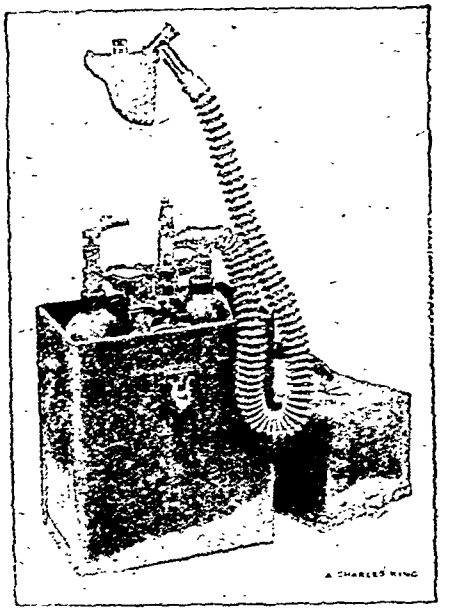


FIG. 1.

9½ lb. In Fig. 1 two straight valve cylinders are securely attached by tightly screwing up the nuts and using efficient washers, as it is essential that there should be no leaks. Only one cylinder must be turned on at a

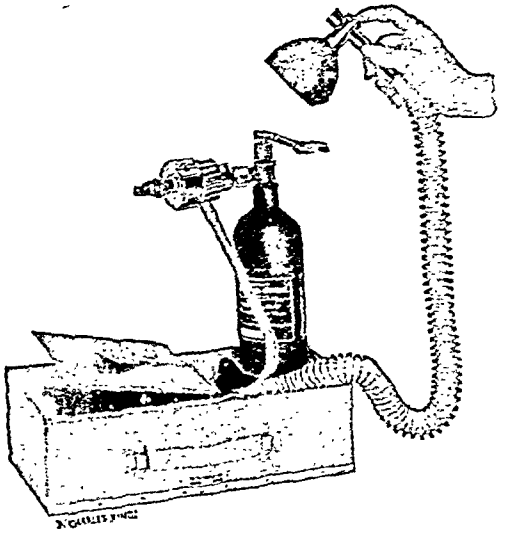


FIG 2.

time, the gauge showing when it is empty. The valve of the one must be closed before the other is opened.

In Fig. 2 one cylinder (100 gallons) stands upright in a leather pocket made for the purpose, and a reducing valve is connected to it in a similar way, a small rubber pilot bag acting in lieu of the gauge.

TECHNIQUE OF ADMINISTRATION

The patient should be thoroughly conversant with the use of the mask before labour begins, so that when the time arrives for using it she is both confident in and familiar with what she has to do. If she is at all nervous she should be reassured; and she should fully realize that the analgesia is self-administered, that she does not lose consciousness, and that it gives definite relief from pain. The mask must be applied in perfect apposition to the face to prevent air-leaks, and the finger comfortably placed over the air-hole in the correct position. Unless care is taken with these details relief will not be obtained. The question is often asked as to when the analgesia should be started. The answer is, as soon as the pains of labour cause discomfort to the patient, at which time premedication with morphine 1/6 grain is of value, if desired.

In order that the full effect be appreciated it is important that the mask be applied to the face on the slightest indication of a pain—that is, before it has become established. The patient should be instructed to inhale and exhale normally, and to increase the depth and frequency of the breathing in proportion to what she can feel. When the pain is over the face-piece should be removed. This procedure can go on with each pain for hours and until the second stage of labour. The patient can drink freely of liquids when desired, as vomiting seldom occurs.

During the second stage of labour, when the expulsive voluntary muscles are brought into play, six to eight breaths should be taken in quick succession, the patient being told to hold her breath and force down as directed. At the time of delivery, unless full anaesthesia is indicated, the patient should be continuously inhaling from the face-mask as rapidly as possible, and must be instructed not to bear down. When it is considered that gas and air is not sufficient for the delivery of the child there is no objection to following it up with any anaesthetic, such as chloroform, ether, or gas and oxygen.

POINTS TO OBSERVE

1. The mother's pulse and the foetal heart rate should be estimated hourly.

2. Normal labour is accelerated by the use of gas and air. In those cases in which advance, however slow, does not take place, and relief is not obtained, these signs should be looked upon as diagnostic and a cause sought.

The following case is an illustration.

Gas and air analgesia was administered to a patient when the second-stage labour pains had become established. For the first two hours analgesia was satisfactory, but gradually became ineffective and the pains severe. No advance was taking place in the presenting part, although full dilatation was present. Both the mother's pulse and the foetal heart rate were rising. Diagnosis: a case of obstructed labour. Treatment: under a general anaesthetic a living child was delivered by podalic version.

3. It is important to remember that cyanosis (other than that caused by holding the breath) does not occur. If any is noticed steps must be taken to find out the reason.

The following case is instructive:

A woman started the administration of gas and air analgesia towards the end of the first stage of labour. After continuing this intermittently for a few hours it was found that cyanosis was produced, and the blueness did not completely disappear between the pains. Diagnosis: an examination of the chest revealed rales and rhonchi over both lungs and oedema was suspected. This was due to a previous influenzal cold, which had settled on the chest. Gas and air was discontinued as being an unsuitable analgesic.

There are, therefore, contraindications to the use of gas and air analgesia in labour, but only in the abnormal cases. These are: (1) Patients having any heart lesion in which compensation is incomplete. Apart from the physical signs this would be shown by rapid pulse and varying degrees of cyanosis. (2) Patients with pulmonary conditions—that is, phthisis, bronchitis, and other congestive conditions of the lungs. (3) Patients with albuminuria and high blood pressure, who might possibly develop an eclamptic fit.

The apparatus was never intended for the purpose of anaesthesia, so that it is precluded in the ordinary way for any obstetric operation, such as version, the application of forceps, or extensive repair of the perineum.

TRAINING OF MATERNITY NURSES

A course of instruction in the administration of nitrous oxide and air by midwives has been inaugurated in many teaching hospitals, and when a sufficiently high standard of efficiency has been attained a certificate is issued. Consequently, maternity nurses who have obtained this certificate will be qualified to undertake the supervision of the administration of gas and air both in domiciliary practice and in nursing homes. This will enable the practitioner confidently to receive great assistance from the nurse during the earlier stages of the labour.

DETAILS OF RESEARCH

It may be of interest to record the scientific work that was carried out with the assistance of Dr. Hilda Garry in the Liverpool Maternity Hospital in March, 1934, to show that there was no danger to mother or child by the use of gas and air analgesia. Electrocardiograms were taken of a series of patients immediately before and at the end of the administration, and again a day or two later. Dr. Leslie Cunningham, medical officer in charge of the electrocardiograph department of the David Lewis Northern Hospital, Liverpool, kindly reported on these, and stated that they did not appear to be influenced to any extent as the result of the patients' experience.

The alteration in the mother's pulse and in the foetal heart rates, estimated at approximately equal intervals during analgesia, was within normal limits.

A biochemical study was made of blood obtained from a maternal vein and the umbilical cord in a number of patients immediately after delivery, with and without analgesia. The conclusions were that, although the administration of gas and air reduced the oxygen content of the mother's blood, the blood of the umbilical cord did not show any marked alteration.

In January, 1936, the British College of Obstetricians and Gynaecologists published a report on the investigation into the use of analgesics suitable for administration by midwives; in which it was stated that gas and air administered by a similar apparatus to that described was a safe and satisfactory method of producing analgesia. There were certain criticisms concerning weight and bulk, and it is highly gratifying to note that these difficulties have now been removed.

During the last three years the just demands of parturient women for the provision of the best relief available have received greater recognition. As the public grows more "gas-minded" drugs will give way to inhalational analgesia. With the further increase of interest, acquirement of knowledge, and improved organization, the means for obtaining this relief will become still more simple and expedient.

A NEW RADIOLOGY DEPARTMENT IN EGYPT

BY

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The Pyramids at Cairo are known throughout the world and to many they symbolize Egypt. Not so well known is the progress made in many modern spheres under the dynasty of Mohamed Aly the Great. The Ministry of Education, which recently celebrated its centenary, provides a striking example of the advance made with the help of extensive European guidance, and the development of the Egyptian University over the last twelve years has been extremely rapid. The Faculty of Medicine, which includes the old Kasr-el-Ainy school and hospital, is building on an island in the Nile what probably will be when completed the largest teaching hospital in the world. In 1922 an international competition resulted in Messrs. Nicolas and Dixon Spain of London being chosen as architects.

The foundations of the whole hospital were completed in 1930, and about 400 beds are now in use. The radiology department as planned in 1922 was found to be smaller than was required by the increase in the work. At my suggestion it was replanned in 1930, the electrotherapy accommodation removed elsewhere, and a new story added to the building. In 1932 the plan was further modified to include two wards pending the completion of the whole hospital. In 1936 a start was made by the reception of patients. In this hospital, as in Sweden, radiologists have clinical charge of beds, and forty-three beds are now (May, 1937) occupied by patients receiving treatment by radium or *x* rays, or both these agents. There are five radiologists on the staff of the department, three of whom hold the Cambridge diploma, while an assistant surgeon is delegated from the department of surgery to act as surgical specialist. In addition, radium is available to such of the surgical or gynaecologist staff as wish to employ it, but its use in this way has been mainly by the ear, nose, and throat staff.

Lay-out and Equipment

The department occupies part of the first and the whole of the second floor above the out-patient accommodation. On the first floor are situated lecture theatre, museum, photographic dark room, film stores, patients' waiting rooms, workshop, and typist and filing clerk and technicians' rooms. The second floor has the shape of a capital T, the top of which is principally for diagnostic radiology. The stem of the T is for therapeutic radiology. The diagnostic section has barium insulation and rubber flooring, and includes an electrically refrigerated dark room. All rooms used for patients (except the wards) have electric heating. There are screening rooms and two radiographic rooms. Of the four rooms three are equipped with two tables, making seven tubes in all. One of these is of rotating anode type. By means of electrically interlocked and operated switchgear, designed by me and made in Cairo by kind permission of the Director-General of the Physical Department, each of the four control tables in the four *x*-ray rooms on the low-tension side and the corresponding *x*-ray tube on the high-tension side can be connected to either a six-valve or a four-valve generator. Both generators can be employed simultaneously. This system, which is believed to be original and which saves almost the whole cost of two generators, facilitates the repair of faults, as each generator acts as a stand-by for the other. All the apparatus is shock-proof, the generators being situated in a machine room upstairs, and cables are led through the ceilings to the *x*-ray tubes. A dental apparatus of the new self-contained type is also in use for the work of the dental school.

A NEW RADIOLOGY DEPARTMENT IN EGYPT

Treatment by Radiation

For therapy a superficial treatment apparatus working at 80 kV and a short distance (Chaoul) apparatus have been in use over the past year. The latter in my opinion seems likely to displace radium for superficially situated easily accessible small growths by reason of its advantage in cost and convenience to the patient. For deep therapy at 200 constant kV there are two tubes operated from a modernized Weifa apparatus, placed in a machine room above, and a constantly evacuated tube (Metropolitan-Vickers) working at 250 constant kV. A further room awaits equipment, the 1930 plan mentioned above providing for six deep-therapy rooms. These rooms are lined with lead tiles, cast locally, and interlocked with each other. All this apparatus is shock-proof. There are also rooms for the staff and for physical and measuring and biophysical laboratories, but these latter are not yet equipped or staffed.

The two wards, male and female, of twenty-eight and fifteen beds respectively, are named in honour of Roentgen and the Curies. There is a theatre for implantation and the minor operative work associated with radiation treatment, a clinical laboratory, a radium applicator preparation room, and a radium-beam apparatus in a room adjacent to the radium safe.

The light-weight radium-beam apparatus was designed by me and made by the Solus Electrical Company, London, in 1935. Of experimental type, it will be described in detail elsewhere, but, in short, it permits the automatic electric conveyance of the radium from the inside of the safe to the patient with the operator at twenty feet distance. Here the radiation is within the assumed tolerance. The weight on the patient is only a few ounces, and movement on his part over a few inches does not alter his position with regard to the radium. Gold is used to reduce the amount of lead protection employed. The unit at present is 2½ grammes, but the apparatus has been designed so as to make later a 5-gramme unit.

Recently the number of patients treated has been at the rate of 800 per year. Most are cases of malignancy, and of these the great majority were suitable for treatment only by *x* rays. The numbers treated are increasing, and use of the "shift" system, as in many places abroad, should result in more economical use of the plants.

Progress since 1923

When I came to Egypt in 1923 Kasr-el-Ainy Hospital possessed one *x*-ray room; very little treatment was possible, and the diagnostic examinations numbered 1,600 a year only. In 1936 about 43,000 were made, principally in the old hospital. The development that has occurred has been considerable, but much remains to be done. Under the Anglo-Egyptian Treaty, so advantageous in many respects, heavy defence expenditure will be incurred and progress may be slower towards solving the problem of training the radiologists required for a population of fifteen millions and who at present number less than one per million. It will probably be many years before the chair in medical radiology approved by the Ministry of Education in December last is created in the university.

OUTBREAK OF FOOD POISONING IN LONDON

GAERTNER BACILLUS ISOLATED

On August 25 it was announced in the Press that there was an epidemic of food poisoning in St. Pancras and Finsbury, about forty cases having been traced, with one fatality. It was announced later that the source of the poisoning had been traced to a shop in Finsbury and that gammon was the offending foodstuff. An inquest was held on August 27 into the deaths of two patients thought to be due to food poisoning. The inquest was adjourned until September 2, when it was stated that H. Horsman, aged 73, and Mrs. Billingham, aged 54, had died from acute enteritis due to bacterial food poisoning, and that W. Tonbridge, aged 43, had died of acute bronchopneumonia as a result of a Gaertner infection. Dr. Albion, a medical officer of the Ministry of Health, stated that he had examined samples of cooked and uncooked gammon and other food from the shop in Finsbury and had found the Gaertner bacillus in some of the food: in a cut from the centre of the uncooked gammon there was no sign of it. For the following account we are indebted to Dr. Percival V. Pritchard, deputy medical officer of health for St. Pancras.

The Beginning of the Outbreak

A full account of the outbreak of food poisoning in St. Pancras and Finsbury cannot be recorded at this stage. Cases are still coming to notice and the investigations which must of necessity be made are still incomplete in many respects. Meanwhile a brief account can be given of what has happened in St. Pancras.

On Monday, August 23, three cases of food poisoning were notified. This is a notifiable disease in London. My inspector found a fourth case during his investigations. All four had partaken of cooked food bought on Saturday, August 21, from the same shop in Finsbury. This information was given to the medical officer of health for Finsbury so that he could deal with the shop which seemed to be the source of infection.

Three of these patients were ill within nine hours and the fourth within thirty hours of eating ham or corned beef or breakfast sausage. The symptoms were very severe abdominal pain and diarrhoea with marked prostration; vomiting was delayed for several hours and was not severe; there was a mild degree of fever.

Further Investigations

On August 24 Dr. N. D. Dunscombe, M.O.H. for Finsbury, told me about a case of the poisoning which had been brought to his notice in his investigation of the shop. This person, Mrs. S., worked in St. Pancras and lived in Islington. We found that she, her husband, and two daughters had all eaten ham bought from the shop under investigation and that with the exception of the husband they were all suffering from symptoms of food poisoning. The case was made difficult at first by the fact that the woman denied having eaten anything from the shop. This was seemingly done as an act of kindness to the shop. The truth, however, was eventually forthcoming. The daughters were at home ill and the M.O.H. for Islington was accordingly told of the circumstances. He visited and continued the survey. Mr. S. was not ill in any way, although he had had ham with his family. As a result of questioning Mrs. S. we found three more cases at her place of work in St. Pancras. These people had bought ham from the same shop on Monday evening and were ill within nine, twelve, and nineteen hours respectively after partaking of it. They showed the symptoms which have been common to most of the cases.

On Wednesday, August 25, Mr. Wilkie of the St. Pancras Hospital informed me of the death of a patient, Mr. Horsman, who had been admitted to the hospital on the previous Sunday

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We are informed that a law to be enforced immediately in Buenos Aires will necessitate the production by the bridegroom, before marriage, of a certificate stating that he is free from any venereal disease which might be transmitted to his wife. The certificate, for which there is no charge, is to be presented to the civil authorities. The law does not apply to women, and includes clauses providing for the closing of houses of ill fame and for the "compulsory hospitalization of refractory cases of contagious infection."

with severe enteritis. His examination of the stools had progressed as far as demonstrating the presence of a non-lactose fermenting organism. This pointed to the possibility of infection with *B. typhosus* or other organisms of the Salmonella group which could account for the enteritis. Mr. Wilkie had been given a history of eels in his patient's diet. I decided to investigate this.

The situation at that time was as follows: We had no evidence of any cases being connected with the shop beyond our original four notifications. There were three distinct investigations proceeding in connexion with enteric fever—missed, suspected, and actual—in the borough. There was a small, well-confined outbreak of ten cases of food poisoning in an institution.

On investigation at Mr. Horsman's lodgings it was found that he had eaten ham from the shop on August 20 or August 21. He lived alone in a furnished room. He was ill on August 22, and his doctor sent him into St. Pancras Hospital late that day. We obtained the ham which remained and had it examined bacteriologically at University College Hospital. The final report on that was: no typhoid, paratyphoid, or dysentery bacilli; no organisms of the food-poisoning group were isolated, such as *B. gaertner, B. aertrycke,* or *B. newport*; no other abnormal coliform organisms isolated. On culture there was a very marked growth of staphylococci, 10 per cent. of which were *S. aureus* and 90 per cent. *S. albus.* A growth of non-haemolytic *Streptococci mitis* was also obtained. At the same time as this investigation led us so directly to the suspected ham and suspected shop, Mrs. S. admitted the connexion there and the other cases were brought to light.

The fact that a food poisoning outbreak had actually started was now evident. Doctors working in the affected area were immediately informed of this. Some doctors had already met the epidemic and were able to make a diagnosis of cases which had puzzled them. We followed up these cases at once from lists supplied by the doctors, and were able in that way to trace the food eaten, in all except one case, to some connecting link with the Finsbury shop. It will be seen that cases came under notice in various ways: statutory notification, notice by patients' letters, and in the course of investigating other cases. The epidemic is not yet fully explained. There has been no time. These brief facts and questions may produce interest and may be answers to some of the problems which the outbreak has produced.

The Question of "Toxin"

Gaertner bacilli have been isolated in a number of the stools. One man was ill within five hours of eating the ham. Other patients were ill within eight and nine hours. Most of them took twelve hours and more. The question arises, Can a Gaertner infection be followed by enteritis in the short space of five hours? Was there a massive dose of preformed toxin in the meat? The following case is interesting. Mrs. C. bought some breakfast sausage from the shop and gave it to her two sons. She is quite certain she had none of the food herself from that place. The three were taken ill at the same time and she was removed to hospital. Her stools were very carefully examined, but no Gaertner organisms were found. Were these cases affected by toxin? If so, it must have been very potent to act in the way it did. In several cases where groups of people, say a family, were affected it has been interesting to relate the amount of the suspected food eaten with the severity of the illness. The rule seems to have been that the more eaten the greater the degree of attack. This was shown in two groups by the number of "poisoned" sandwiches eaten. These and the many other interesting points which have arisen in connexion with this epidemic will receive further consideration, and will no doubt form the subject of a complete report at a later date.

The Duke of Kent will open the new radiological department of the North Staffordshire Royal Infirmary, Stoke-on-Trent, on October 13. The department has cost £24,000, of which £11,000 was given by Mr. G. H. Downing, a former High Sheriff of Staffordshire.

POSTGRADUATE MEDICINE

THIRD INTERNATIONAL CONGRESS AT BERLIN

We are indebted for the following account to Colonel A. H. Proctor, D.S.O., M.D., Dean of the British Postgraduate Medical School, Hammersmith.

The Third International Congress on Postgraduate Medical Education began on August 21 in Berlin. There have been two previous congresses on postgraduate medical education, the first in 1909 in Budapest, and the second in London in 1913. Since the war no further congresses have been held. This year's congress was organized by Professor Adam, a member of the original committee, and Secretary General. The German Government gave generous help and assistance, and the meeting was presided over by Dr. Kurt Blome, the director of postgraduate medical study appointed by the Reich medical leader. The congress met in the large hall of the Langenbeck Virchow House, and the interest aroused is shown by the fact that although the hall will seat 700 people extra chairs had to be brought in. Forty countries were represented, France by no fewer than eleven delegates and Japan by nine.

Dr. PFUNDTNER, Secretary of State for the Interior, who formally opened the congress on behalf of the Reich Minister of the Interior, Dr. Frick, who was unable to be present, referred to the influence of such meetings in promoting international good will and friendship.

The Doctor in Modern Germany

The Reich medical leader, Dr. WAGNER, then read a paper on "The Position of the Doctor in the New Germany." He opened by stating that the doctor's chief duty was to combat those conditions "which history shows have caused nations to perish"—namely: (1) the decline of births; (2) the swamping of the best and most capable parts of a nation by those elements which had no right to existence; (3) the mingling with the blood of a different race. The chief task of the German doctor lay in promoting all measures which would strengthen the health and vigour of German individuals. He outlined the scheme by which a medical survey of the whole working population was to be carried out and early departures from normal health recognized and treated. In future each German was to get a medical certificate which would record all medical facts of importance from birth to death. (Free choice of doctor was insisted on.) The new "Reichsärzteordnung" of April 1, 1936, fixed the rights and duties of the German medical man. It was a legal duty for him to support the steps taken by the State and party in the sphere of population and health policy. The profession of a doctor was no longer a trade in Germany, but a public task settled by law. The "Chamber of Doctors" (Reichsärztekammer) controlled the medical profession. It could distribute doctors systematically over the country and prevent, if necessary, the setting up of practice in places whose requirements were already provided for. Postgraduate education was no longer left to his discretion. It was his duty, and only teachers were exempt from such courses. The Chamber also had full disciplinary powers. Permission to join the panel under the insurance scheme was given by committees consisting of doctors appointed by the K.V.D., a special corporation including all doctors on the panel. It was to this body the panel doctor was accountable for the fulfilment of his contract, and this corporate body was responsible to the insurance organization for the orderly and good medical treatment of the insured person.

Postgraduate Education in Germany

In a paper on research and postgraduate study Professor BORST of Munich put forward a strong plea for free and independent research—that is, research which had no particular aim other than to determine true relationships. Only in times of stress and in emergencies could the research worker be assigned special problems. He stressed the necessity of training the rising generation. Research, instruction, and medical postgraduate study were inseparably related. Postgraduate courses must include the progress made in the natural sciences and in biology. Research was essential for the good physician, and must find a place in all sound proposals for postgraduate education.

The organization of postgraduate study in Germany was described by Dr. BLOME. Intensive refresher courses for all doctors were now compulsory once in five years. In 1936 4,941 doctors attended such courses. The number of doctors attending each course was limited to twenty, and postgraduate centres had been established in sixty-eight centres. Country practitioners attended for three weeks, but medical men residing near centres could take evening courses over a longer period. These were not regarded as so satisfactory. At each centre a director had been appointed whose duty it was to organize courses in co-operation with the instructors and in accordance with the general principles laid down. Fees were charged for the courses and had to be paid by the doctors themselves; assistance was provided for those who needed it. Advanced study was basically international in character and was guided by the Academy for Medical Postgraduate Study. This was given in a university or an academy. For example, Munich academy was devoted more especially to the physiology of work, and in Dresden studies were conducted in nature courses, spa treatment, fasting, and other forms of treatment which had been largely in the hands of non-medical healers. These courses were now sponsored by the medical profession and not, as formerly, by the administrative authorities of bathing resorts and spas. Special courses were held at Alt-Rehse, where there was a school for leaders of the medical profession. (By "leaders" are meant leaders for the organization of health policy in accordance with present political ideals in Germany.)

Dr. Blome was followed by Professor OBERLING of the Medical Faculty, Paris, who gave a survey of medical postgraduate study in France, and a further paper on the importance of pathological anatomy for postgraduate instruction. Speakers from Austria, Japan, Italy, Switzerland, Greece, and Poland each in turn described postgraduate facilities available in their respective countries.

The "New" German Medicine

On Monday, August 23, the congress opened with a paper by Professor GROTE, Superintending Physician of the Medical Clinic of the Rudolf Hess Hospital at Dresden, on the "New German Medicine in Postgraduate Study." Professor Grote's paper was a little difficult to follow. It indicated that the new German medicine had acquired a new outlook in two directions. First, it was concerned with the diseased conditions in racial and national life, and therefore devoted its attention to problems of heredity and the conclusions to be drawn from them. From this had arisen the new marriage laws and prevention of hereditary disease. Secondly, in the past German medicine had been mainly concerned with the cause and mode of origin of symptoms in an attempt to attain ideal therapy by treating the cause. German medicine to-day was engaged in the interpretative analysis of symptoms and their significance, and in the region of therapy was investigating dietetic and physical procedures which had met with success in the treatment of disease.

Colonel A. H. PROCTOR, Dean of the British Postgraduate Medical School, London, read a paper on the British Postgraduate Medical School and the necessity for separating postgraduate from undergraduate teaching. He referred to the part played in postgraduate education by hospitals devoted to special diseases.

Postgraduate Training in Obstetrics

Professor WAGNER of Berlin and Professor VAN ROOY of Amsterdam read short papers on the particular difficulties of postgraduate study in obstetrics. Each reviewed briefly the conditions for the training of students, and suggested that this should extend over several years. Postgraduate training in obstetrics was even more difficult as it had to be crowded into a short space of time. Professor Wagner considered the problem hard to solve in countries where delivery in the home with the aid of a midwife and eventually a general practitioner or a specialist was advocated. He recommended the utilization of large public lying-in hospitals which did not serve any other educational purpose. All physicians engaged in the practice of obstetrics should be compelled to attend postgraduate courses periodically.

Surgery, Tropical Medicine, Radiology

Professor SAUERBRUCH, Director of the University Surgical Clinic, Berlin, in a paper on postgraduate study in surgery, stressed the difficulty of training in operative surgery and the necessity of illustrating the principles of surgery in simple cases.

Professor MÜHLENS, Director of the Tropical Institute, Hamburg, said that the courses held there included a special nine weeks' course, at the end of which an examination was held and a diploma granted. Other courses provided were: one in Spanish, a special course for ship surgeons, courses for candidates for the degree of doctor of medicine, and for assistantships in various laboratories and in the tropical hospital. As many as 300 or more students attended during the year from all parts of the world.

Professor HOLTHUSEN of Hamburg, in a paper on diagnosis and therapy by radiation, drew attention to the fact that various specialists used *x* rays in their clinical work, and many general practitioners were also more or less active in this field. Efforts were now being made to induce more practitioners to take up radiology as a special subject. Measures for training the rising generation of doctors had not kept pace with requirements.

Postgraduate Study in Psychiatry

Professor KLAESI, Director of the University Psychiatric Clinic in Berne, in an interesting paper on postgraduate study in psychiatry, referred to the loss of the old family physician, who was helper and counsel not only in disease but also in the emotional and moral problems of his patients. One-sided thinking in the natural sciences had led to the functions of the old family physicians being taken over by "occupational" and "matrimonial" advisers, "psychotechnicians," and quacks. The student should be stimulated to take an interest in psychiatry and in the wider study of human conduct. He ... that facilities for postgraduate study in psychi...

be provided by properly edited periodicals, evening clinical demonstrations for general practitioners, and vacation courses.

Dr. ENGEL of Berlin, discussing the importance of postgraduate study for the State and those who administered insurance, pointed out that there were 20,000,000 insured persons in Germany, and their healthy working power was a most precious possession. The influence of medical progress affected not only the present but future generations. He stressed the great importance of postgraduate study in industrial organization in raising earning power, in providing occupational welfare work, and in the prevention of disease and the treatment of accidents.

The Cancer Campaign

The morning of Tuesday, August 24, was devoted to the campaign against cancer and its importance as a subject of international postgraduate study. The discussion was introduced by Dr. SCHRAENEN, Secretary of the Belgian Society for the Combating of Cancer, and by Professor AULER, Secretary General of the German Commission. Other papers were contributed by Professor FISCHER, Rostock; Professor KÖNIG, Wurzburg; Professor SCHRÖDER, Leipzig; Professor HAUBOLD, Berlin; and Professor REDING, Brussels.

Dr. Schraenen said that the object of the campaign against cancer was to give the best possible treatment to the greatest possible number of patients at the earliest possible stage of the disease. In order to achieve this ideal the following demands must be met. The public should have a basic knowledge of the nature of cancer, know what methods existed for fighting it, and above all must be persuaded of the importance of their own co-operation in this struggle. The diagnosis of cancer must be so organized that the disease might be definitely recognized as early as possible. Opportunities for suitable early treatment should be assured. For subsequent treatment there must be a service of supervision, and also a "social cancer welfare" organization devoting itself to the economic and psychological consequences of cancer for the patient and for his family. The measures required for this were the special scientific training of medical students in relation to cancer; a constant reawakening of the interest of practising physicians (for example, by making available to them treatises on the progress of cancer research, by courses, by postgraduate lectures); close co-operation of physicians in dealing with individual cases through the welfare service of the cancer league; co-operation between the medical profession and the anti-cancer centres (institutions which unite all the measures for dealing with cancer—diagnosis, therapy, research, and instruction). The practical side of the question, which had been recognized by all as being of the utmost urgency, had not been tackled.

Professor LAMBADARIDIS of Greece said that in Greece the mortality from cancer was probably higher than in any other civilized country. The total population was about 7,000,000. He estimated that about 350,000 were suffering from cancer. Statistics, however, were for various reasons lacking. This year an institute for cancer research had been established from public and private funds, but there was a serious lack of doctors with special training. Examination stations should be established which the entire population should be compelled by law to visit at regular intervals. The family doctor had an important part to play in the fight against cancer, especially in early diagnosis. Professor Lambadaridis's proposal that the family doctor should remove biopsy specimens for diagnosis, although it may not be approved in this country, may, with the conditions of practice in Greece, be necessary there. In Greece it may be impossible to obtain the opinion of an expert in these cases or to send them to a hospital until their diagnosis is confirmed.

Professor SCHRÖDER of Leipzig described the part the general practitioner could play in the campaign against uterine cancer. He advocated written and pictorial propaganda, exhibitions, and instruction by social workers, community nurses, and midwives.

Films in Education

On Tuesday Dr. KITTLER read a paper on the use of films in postgraduate study. Some excellent films illustrated the indications for the administration of insulin in diabetes. So far as major surgery was concerned, it was thought that films could only serve to broaden the therapeutic range of vision of the general practitioner; they were not of much use in teaching operative surgery. Interesting films of the mechanism of labour, made up in the same way as the well-known Walt Disney films, were also shown.

An International Academy for Postgraduate Work

On Tuesday afternoon a special meeting of the International Congress of Postgraduate Medical Education Committee was held, and a proposal was brought forward to establish an international academy of postgraduate work and research. The draft constitution and statutes were submitted and a prolonged discussion took place on the various proposals contained therein. The object of the academy is to foster medical postgraduate work and research on an international basis; to make accessible to all the other members of the academy the achievements of the various countries and their investigators, both in general medicine and in its special branches. Its duty would be to organize postgraduate courses, study-meetings, and congresses; control the exchange of teachers and students of every affiliated country; to offer opportunities for advanced and postgraduate study in each country; to arrange study-tours in foreign countries; to improve methods of teaching, especially with regard to the use of films; to translate and distribute publications of special importance from distant places; to help to finance important research; to impart information about the particular problems of various countries and their branches of research; to distribute and advise doctors of affiliated countries, groups, and special groups.

It is proposed that a permanent bureau should be set up in Berlin, and the general organization was outlined. The approval to establish such an academy was carried by a large majority and the draft constitution and statutes were referred to a smaller committee. Such an academy would serve a very useful object not only in promoting medical progress but in furthering international fellowship and friendship.

Facilities for the Foreign Doctor in Germany

Wednesday, the concluding day of the congress, was opened by a paper by Professor ADAM of Berlin, on the opportunities for advanced study for foreigners in Germany, such as: (1) posts as voluntary assistants in clinics and institutes, the smaller universities being best suited for this; (2) the international postgraduate courses in March and October for specialists in their given fields;

(3) courses in Spanish specially designed for Latin-American students. Professor Adam also described the various organizations which gave special aid to foreign physicians. These included: (*a*) the Information Office of the Kaiserin Friedrichhaus, Berlin; (*b*) the Foreign Section of the University of Berlin Staff Association; (*c*) the Institute for Foreigners in the University of Berlin, devoted chiefly to teaching the German language to foreigners; (*d*) the America Institute; (*e*) the Japan Institute; (*f*) the German Academic Exchange Service, an organization which arranges exchange positions for German and foreign physicians: with its Humboldt Foundation it is in a position to grant fellowships to foreign physicians during their stay in Germany.

Dr. KENNEDY of Cornell University, New York, then began a general discussion on the international exchange of instructors and students, in which a number of delegates took part.

Industrial Medicine

A discussion on instruction and postgraduate study in industrial medicine was introduced by Dr. BAADER, Director of the University Institute for Industrial Medicine. Stressing the necessity for special study in this particular branch of medicine, he pointed out that in Germany this was a post-war development and that rapid mechanization and technical processes had resulted in the manual labourer being worn out at the age of 45 to 50. In Berlin there was a university institute for occupational diseases. At Munich there was an institute for the physiology of work and a pathological institute for industrial and accident hygiene. In the Ruhr district several hospital departments were engaged in the study of pneumonoconiosis, etc. Besides these, special clinical departments in industrial hygiene are provided at the Reichsgesundheitsamt, the Workers' Protection Museum in Berlin, the Museum of the German Society of Workers' Protection in Frankfort-on-Maine, and the Bochum Museum of Mining.

Dr. E. L. MIDDLETON, one of the English delegates, described the education in industrial diseases that is provided in England, and a number of other physicians from Paris, Italy, Brussels, and Buenos Aires took part in the discussion.

W. Haupt (*Med. Klinik*, July 16, 1937, p. 957) cites comparative statistics of mortality from cancer in different countries. For each 10,000 inhabitants 13.4 died of cancer in Germany and 15.3 in England. The general mortality for each 10,000 inhabitants was 107.8 for Germany and 124 for England. However, there is no connexion between general mortality and mortality from cancer. In Chile, for example, the general mortality is 267, while the mortality from cancer is only 7.2. The mortality from cancer in Germany is higher for women than for men, the proportion being 121 to 100. The proportion is much higher in the United States—namely, 220 to 100. Cancer of the genital organs accounts for one-fifth to one-quarter of all cases of cancer in women, and 60 per cent. of all cases occur in women under the age of 50. Unfortunately a large proportion, varying from 42 to 82 per cent., neglect to seek medical advice until it is too late. The author recommends a number of measures for the campaign against genital cancer, the most important preventive measures being voluntary regular yearly examination of all women over 35 years of age and supervision of all cases already treated. Finally, he cites statistics relating to the results of treatment of carcinoma of the uterus in its different stages.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

THE NOTTINGHAM MEETING

The British Association met at Nottingham this year from September 1 to 8, under the presidency of Sir EDWARD POULTON, F.R.S., and full accounts of its activities have appeared in the daily press. We give here a brief summary of one or two of the subjects discussed at the meeting.

The Presidential Address

The wide general interest in scientific progress to-day is in marked contrast to the antagonistic attitude displayed by other branches of learning as recently as a century ago. When, at the Oxford meeting of the British Association in 1832, honorary degrees were conferred on David Breuster, Robert Brown, John Dalton, and Michael Faraday, current opinion was reflected in a letter from John Keble to a friend: "The Oxford doctors have truckled sadly to the spirit of the times in receiving the hodge-podge of philosophers as they did." The doctrine of evolution probably stirred more widespread opposition than any other scientific advance. In surveying the history of evolutionary thought in the presidential address to the British Association at Nottingham, Sir EDWARD POULTON traced its progress as it may be followed in the series of meetings of the Association, dating as far back as 1881, with which he has himself been personally concerned.

At the Jubilee meeting of that year the outstanding event was Huxley's evening lecture on "The Rise and Progress of Palaeontology," the foundation upon which geographical, geological, and biological evolutionary history had been built. It was surprising to reflect that many of the older naturalists, even so late in the Victorian era, had found almost insuperable difficulty in believing that the land had been for the most part deposited under the sea, or in accounting for the presence of fossils, "formed stones" as they were called in those days. Huxley cited the work of Nicholas Steno of Florence, published in 1669, concerning certain fossils of the Tuscan rocks, known as glossopetrae, and commonly believed to be fossil fig leaves. By dissection of a shark's head Steno showed the complete correspondence between the "glossopetrae" and the shark's teeth—"that in fact they were shark's teeth." Surveying Steno's further studies of Tuscan fossils, proving their relationship to terrestrial, fresh water, and marine organisms, studies later extended over a wider area by Button, Huxley envisaged the framework of palaeontology as thereby completed save for one component. This was supplied towards the end of the eighteenth century by William Smith, who showed that rocks of the same age were identifiable in all parts of the world, while the biologist could follow the changes in living organisms, constituting a record of constant extinction and continual regeneration of new species.

Following the establishment of the conclusion that life has existed in this world over a vast period of millions of years, discussions regarding the actual age of the earth continued intermittently at British Association meetings from 1892 until 1921. It was a matter of difficulty to reconcile the conclusions reached by exponents of different sciences. Thus the physicist, Lord Kelvin, estimated a hundred million years as the period during which the earth had been sufficiently cool to support life, an estimate later reduced by Professor Tait to ten million. The geologists and biologists, however, maintained that an immensely longer period was required for the history of fossiliferous rocks and the evolution of animals and plants. In 1896 the

physicists were disagreeing among themselves, Helmholtz allowing the sun eighteen million years for giving out radiant heat at its present rate, while Kelvin allowed 500 million. Sir George Darwin, who concurred with Kelvin, nevertheless drew the reasonable conclusion that "the physical argument is not susceptible of a greater degree of certainty than that of the geologists, and the scale of geological time remains in great measure unknown." Again, in the words of Sir William Turner at the Bradford meeting in 1900, the birth of this world "must have been in the far-distant past, at a period so remote from the present that the mind fails to grasp the duration of the interval."

Discussing organic evolution, the President threw some light upon the reception of Darwin's *Origin of Species* by the laity, showing that the clergy especially were less antagonistic than was generally supposed. He was himself present at the Church Congress at Reading in 1883, and recalled the unanimous enthusiasm with which the audience received a paper by Aubrey Moore on "Recent Advances in Natural Science in their relation to the Christian Faith." Nevertheless, the new conceptions were not easily assimilated. Contemporary comment some twenty years earlier, in 1861, was illustrated by the verse:

> "A deer with a neck that was longer by half
> Than the rest of its family's (try not to laugh)
> By stretching and stretching became a Giraffe,
> Which nobody can deny."

With regard to acquired characters, maintained by Weismann to be incapable of hereditary transmission a statement accepted by nearly all biologists, the President suggested that this vital conclusion was insufficiently appreciated by the general public. He adduced in support the opinion of the late A. A. Macdonell, Professor of Sanskrit at Oxford. The professor, who spoke both English and German as they are spoken by "natives," held that it was impossible for any mature person to learn a foreign language to this extent. Familiarity with a language in early childhood was the essential basis. Yet any human being transported in infancy from his own country to another, and brought up there among the natives, could learn to speak the language as spoken by the inhabitants. Nor would the fact that his forbears, perhaps for many generations, had spoken the language of his birthplace retard or modify his acquisition of another tongue under these conditions. "Educability" could be transmitted; it was a congenital character. But the results of education could not be transmitted. With further reference to the inheritance of acquired characters the President described the elaborate adaptations by which sedentary insects were hidden from their enemies, adaptations evolved not by experience but by avoidance of these enemies. For instance, a twig-like caterpillar, resting on a branch in close proximity to a wren's nest, was unnoticed by the bird, which, however, immediately saw and devoured it when it was placed on a white surface. Sir Edward recalled Lord Lister's presidential address in 1896, a simple and modest record of the great benefactor's life work, and an enduring inspiration to those privileged to be present.

The Sex Ratio

In a paper on the sex ratio Professor F. A. E. Crew, President of the Section of Zoology, maintained that the *Statistical Review of the Registrar-General* was a zoological contribution of surpassing interest. It was, in fact, a progress report of a vast and exciting zoological experiment which we are conducting, scientifically or otherwise, with ourselves as the experimental material. For the correct interpretation of many of its data knowledge derived from the study of lower forms of life was essential. This was particularly apparent in the human sex ratio. In the case of man the male was shown to be less viable than the female. Especially was there a general proneness on the part of male infants to die in greater numbers, irrespective of the cause of death. It was necessary, therefore, to decide what fundamental differences between the sexes might be responsible for this variation in viability. Males differed from females in genetic constitution. The male was heterogametic, the female homogametic, and the higher mortality of the heterogametic sex had been amply demonstrated among wild populations. Males were predominantly catabolic, females anabolic. Males showed a higher metabolism rate, a higher erythrocyte count, a higher haemoglobin value. Experiments in male pigeons showed that their basal metabolism was more easily and more deeply affected by conditions of high temperature or low oxygen supply than that of females. Males of the sword-tailed minnow were more susceptible to alcohol, potassium cyanide, and extremes of temperature. The higher metabolic rate of the male appeared to render him less resistant to unfavourable conditions and more prone to death.

Figures relating to farm animals showed without exception that the males among them shared the relative frailty of the human male, and records of laboratory rats and mice told the same story.

Generally among birds the female was found to be more fragile. Pre-natal death fell more heavily on female fowls. The males of the Japanese turtle dove appeared to be the longer-lived. But in birds the heterogametic sex is the female.

Evidence derived from fish was of less value, for the sex chromosome constitution had not yet been fully determined. A wide range of observations upon insects showed that the male, whether homo- or hetero-gametic was the shorter-lived.

There was nothing unique about the human sex ratio and the factors which operated to distort it were exactly those which produced the same results in other forms of life. The problem must be studied not only in the office of the statistician but also in the laboratory of the experimental biologist and in the open country, with the collaboration of the physiologist and the geneticist.

Heat Production, Nutrition, and Growth

Dr. E. P. POULTON, President of the Section of Physiology, prefaced his address on heat production, nutrition, and growth in man with some practical comments on the question of medical research. In recent years facilities for whole-time research had enormously increased, and such benefactors as Lord Nuffield had largely contributed to this happy state of affairs. It was important, however, to make provision for the research expenses of those willing and able to devote their spare time to such work in the course of teaching and practice. Dr. Poulton stressed the lamentable time lag between the publication of new methods and their general adoption. If a new form of therapy were available in pill form, its widespread application was rapid and assured. If it involved the purchase of apparatus or other difficulties, it might remain neglected for years in many parts of the country. This was attributable to the straitened financial circumstances in so many voluntary hospitals. Money was indeed urgently required for popularizing the results of research. Voluntary hospitals, which naturally hesitated to buy expensive apparatus, would not be slow to use it if provided free of cost. By applying this principle, in the first instance, to the voluntary teaching hospitals, thus accustoming medical students to new methods and new apparatus, the dissemination of the knowledge of fresh advances would spread rapidly throughout the country. Following a

thorough survey of methods of direct and indirect calorimetry, Dr. Poulton advocated the theory of the constant combustion ratio: that carbohydrate and fat are always burnt in the body in a fixed proportion, and the respiratory quotient, when it is high, measures the amount of conversion of carbohydrate into some less oxygenated material such as fat, and when it is low, measures the reverse change. Such a theory was far from unreasonable, for other quantities associated with the human system—for example, body temperature and hydrogen in concentration of the blood—varied only within comparatively small limits. As an illustration, the story of Cain and Abel suggested that the diet of primitive man was variable in its carbohydrate and fat content, the choice of food being influenced by the exigencies of hunting and cultivation. It was not reasonable to suppose that the complicated processes of human metabolism should be at the mercy of such extraneous circumstances. It was more logical to assume that such processes normally followed well-defined lines of chemical and physical action, while any foodstuff taken in unusual quantity was converted into a form suitable for storage for future use. With regard to standards of metabolism, growth, and general nutrition in children, Dr. Poulton suggested that there was some factor in modern life that tended to promote growth in the children of the wealthier classes. This factor was lacking in all classes fifty years ago, and was still absent among the poorer classes to-day. Since heredity could scarcely be a predominant influence, the cause might be attributed to alteration in the food supply, involving an increase in minerals and vitamins.

Hypnosis and Suggestibility

Before the Section of Psychology Dr. WILLIAM BROWN read a paper on hypnosis, suggestibility, and progressive relaxation. Dr. Brown affirmed that recent experimental and clinical work had established hypnosis on a firm scientific basis. In the treatment of patients the employment of hypnosis resulted in a more rapid and more pronounced induction of relaxation. It was important that any suggestions made to patients in the hypnotized and relaxed state should be positive in character, tending to increase normal vitality and vigour. By this means concentration, memory, and mental powers could be improved, and inhibitions and the fear of failure removed. With regard to variation in susceptibility to hypnotism, Dr. Brown stated that cases of idiopathic epilepsy and *petit mal* were not responsive, and that induction was difficult in persons suffering from extreme fatigue. Alcoholism and scopolamine increased susceptibility, while cases of so-called hysterical epilepsy were especially amenable to hypnotic treatment. Recent work in the United States had shown that new conditioned reflexes could be built up more rapidly and thoroughly under hypnosis than in a normal state. This opened up the possibility of improving the digestive and excretory functions, by extending the power of the will to influence involuntary actions. The therapeutic hypnotist must not be regarded as dominating his patient, but rather as using his influence to inspire confidence and faith. Dr. Brown compared this relationship with that of people and leaders in political affairs.

"Whatever opinions may be held with regard to the political aims of the Fascist countries, there can be no doubt that the methods adopted in Germany and Italy of attaining efficiency as a nation under individual leadership find a great deal of support in modern psychology. It is a mistake to suppose that the followers in these countries are slaves, copying their leader from a motive of fear or in cringing submission; rather do their own self-assertive and aggressive tendencies become liberated in the process, and their heightened enthusiasm and confidence in their leader and his resources make what might have been a timid, panic-stricken crowd into a powerful army, race, or nation."

Local News

ENGLAND AND WALES

Pharmaceutical Society's New Home

Plans for the new home of the Pharmaceutical Society of Great Britain have been passed by the London County Council, building operations will start shortly, and the Society expects to enter into occupation in 1939. The site is the north side of Brunswick Square, overlooking the Foundling grounds, and within five minutes' walk of Upper Woburn Place and the British Medical Association House. The architect's perspective shows that a spacious and dignified building is in contemplation. It will have six floors, and will embody an assembly hall, library, lecture theatres, laboratory accommodation and class rooms, council chamber and committee rooms, and full provision for the administration and publication departments, which are at present rather scattered in Bloomsbury Square. Chiefly with a view to harmonizing with the Victorian character of the new locality, the façades will be of brick, with an unusual and pleasing treatment of the principal frontage. To the right of the vestibule on entering will be the assembly hall, extending to the height of two floors and seating from 350 to 400 persons; to the left will be the library, also two stories in height, with embayments in which small tables for readers will be placed. Directly facing the vestibule will be a lecture theatre, accommodating 250, with provision for up-to-date cinematograph and other demonstrations. This will be flanked on each side by an open court, permitting cross-lighting of the assembly hall and library. A members' lounge and writing room are also to be provided, and on an upper floor council and committee accommodation. The Pharmaceutical Society is more than a professional body: it incorporates a college, which is a school of the University of London in the Faculty of Medicine, with 100 students, and to this college will be devoted the whole of the third and fourth floors in the new building. There will be a large dispensary, departments for advanced and physical chemistry, bacteriology, and research, a small-scale manufactory, and a galenical department. Tutorial and service rooms, a second lecture theatre, a curator's room, staff rooms, and workshops will complete the provision for the school. Examination rooms are to be placed against the respective departments throughout. The top floor is to be devoted to pharmacological research, with a nutrition department, various animal rooms, and histological and chemical laboratories. Another department for which provision is to be made is pharmacognosy, or the science of crude drugs. Altogether the building will form another conspicuous addition to the collegiate and research centres which are multiplying in Bloomsbury within a half-mile radius of the central tower of the University now approaching completion.

L.C.C. Hospitals and Health Services

A year ago the London County Council approved a proposal to engage, for an experimental period of twelve months, two part-time obstetricians and gynaecologists for duty at four selected hospitals. The experiment has proved satisfactory, and the scheme is to be extended to certain other hospitals with large and growing maternity and gynaecological units. The hospitals participating are Dulwich, St. James, Lewisham, St. Giles, St. Alfege's, St. Mary Islington, Archway, and Highgate. The capital expenditure on hospital services under the London County Council for the year 1937–8 is estimated at £650,000, the same amount as last year, but greater than any other previous year. The many important schemes of extension

and development authorized by the Council and in process of being carried out include several for the provision of additional accommodation for patients, new nurses' homes and extensions of existing homes, and various other plans for improving present conditions. A sum is included for preliminary expenses in connexion with the new general hospital of about 500 beds to be erected on part of the site of St. Benedict's Hospital, Tooting, to meet the demand for additional accommodation in the south of London. The estimated cost of the maintenance of L.C.C. hospitals for 1937–8 is £5,395,820, some £200,000 more than the estimated expenditure for 1936–7. The after-histories of tuberculous patients five years after they have been discharged from L.C.C. institutions are published from time to time. The latest survey deals with patients who were discharged in 1931. The number of adult patients discharged from residential institutions in that year was 4,368. In 554 cases the diagnosis of tuberculosis was not confirmed, 344 cases could not be traced, and so the number of cases investigated was 3,470. Of the early cases of pulmonary tuberculosis 77.3 per cent. were alive after five years; of the moderately advanced cases, 44.1 per cent.; of the advanced cases, 7.8 per cent.; and of the cases of surgical tuberculosis, 74.1 per cent. During the same year 884 children were discharged; and a report is available as to 595 of these (170 pulmonary and 425 non-pulmonary cases). Of the early pulmonary cases 10.3 per cent. had died; of the moderately advanced 66.7 per cent., and of the advanced all had died; of the non-pulmonary cases 8.5 per cent. had died. The number of patients under reception orders in the L.C.C. mental hospitals at the end of the last six-months period (March, 1937) was 21,013. During the six months 443 were discharged recovered, 334 relieved, and 81 not improved, while 669 had died. The number of voluntary patients in residence was 877, and the number of temporary patients 37.

Food Investigation

The Report of the Food Investigation Board for 1936 states that the year has been one of great activity, marked especially by the meeting of the British Commonwealth Scientific Conference and by the Seventh International Congress on Refrigeration. An investigation of the identity and properties of the proteins of muscles has resulted in the isolation of a new fraction, myoalbumen, which is interesting on account of its low iso-electric point (3.0 to 3.5). Myoalbumen constitutes 1 per cent. of the soluble proteins of rabbit's muscle. The report for 1935 referred to the high electrical resistance of the carcasses of pigs which had been overheated before slaughter (*Journal*, October 31, 1936, p. 877). It has since been found, in the course of experiments carried out for the Pigs Marketing Board of Northern Ireland, that the hams made from such carcasses show an unusually high incidence of taint. Conversely, low electrical resistance of the muscular tissue before curing is generally associated with a low incidence of taint. Thus it appears probable that measurements of the electrical resistance of the uncured carcass may be of use in forecasting the incidence of taint in hams. It has been established that herrings cured with much less salt than is now employed in the trade keep well for six months at the usual storage temperature of −3° C. Experiments in progress point to the possibility of small amounts of formaldehyde being present in bound form in the flesh of fresh marine fish, and, to a greater extent, in salt-cured and dried fish. The origin of the formaldehyde is being investigated. The rancidity which develops in herrings' fat during cold storage is due to certain enzymes, which are activated by common salt. In the case of fresh herrings, brine-frozen and subsequently well washed, only slight oxidation of the fat was observed after six months' storage in boxes at −28° C.; with smoke-cured fish lowering the accepted storage temperature (−8° to −14° C.) to −20° to −28° C. has been followed by an improvement in the quality of the fish, due to a retardation of deterioration. The report also records a special method, introduced in Belgium, applicable to the commercial cold storage of hot-house grapes, whereby water is supplied to the bunches during storage. Laboratory trials of this technique have shown promising results in the case of English muscats. A comprehensive series of experiments has proved that Victoria plums may be stored for three to four weeks at a temperature of 32° to 34° F. If the fruit is sufficiently mature when picked it ripens well after cold storage at any temperature from 50° F. If picked too green a really good quality cannot be attained, but an improvement in both colour and quality may be produced by ripening at 70° F. The report also mentions the possibility of increasing the home production of pears, which respond even more favourably than apples to gas storage. The value of pears eaten annually in the United Kingdom is roughly £2,000,000. The proportion of home-grown pears was 29 per cent. in 1934 and 13 per cent. in 1935, good and poor years respectively from the growers' point of view. It is thus apparent that there is scope for a large increase in home production.

N.S.P.C.C. Annual Report

The annual report (1936–7) of the National Society for the Prevention of Cruelty to Children records a slight increase in the number of cases reported to the society during the year. This increase was largely due to cases in which the parents of the children concerned came voluntarily to ask the advice of the society with regard to their domestic problems. The report comments on the tendency of the general public to express dissatisfaction with the adequacy of the sentences imposed in cases prosecuted by the society. It is pointed out, however, that such penalties as heavy fines or terms of imprisonment, unless accompanied by the transfer of the legal custody of the children, bear as heavily upon the children as upon the parents. Also it must be remembered that the really severe part of the sentence is contained in a decision to deprive parents of the custody of their children. The report states that the society is deeply sensible of the care and thought given to these cases by the justices, and of the wisdom and helpfulness of their decisions. An unsatisfactory feature of the year's work is the decrease in the number of cases reported by the general public. Many of the worst cases could have been brought to the society's notice by neighbours at an earlier date, a course of action which would have shortened the unnecessary sufferings of a large number of children. During the year the medical department dealt with 2,573 cases, of which 463 required orthopaedic treatment for various deformities.

SCOTLAND

Royal College of Physicians of Edinburgh

The annual report (1936) of the Laboratory of the Royal College of Physicians of Edinburgh records the publication of nine papers during the year under review. Work on the toxic effects on animals of substances in common industrial use has been carried out in collaboration with Dr. T. Ferguson and Dr. B. Wylam of the Department of Health for Scotland. The results of a study of the effect of trichlorethylene on rats appear to show that this substance exerts a deleterious effect at least upon the liver and the bone marrow. Whether this effect upon rats is of significance for man depends entirely upon the concentration of the substance in the air breathed by those exposed to it. It is hoped, following improvements envisaged in the special apparatus employed, to discover an answer to the question whether trichlorethylene and other substances may effect the health of workers. Mention is also made of epidemiological statistical researches, a review of the results of anti-rabic treatment,

a study of the pathology of the breast, and an investigation of calcium deposits. The report records with regret the death of Mr. T. D. Hamilton, who was associated with the laboratory for many years. Mr. Hamilton's work was chiefly concerned with section technique, the morphological aspects of cancer, and the establishment of standards in blood examination.

New Glasgow Professor

Professor George Barger, who at present occupies the chair of chemistry in relation to medicine at Edinburgh University, has been appointed regius professor of chemistry at the University of Glasgow in place of Professor George Gerald Henderson, who has resigned as from September 30. Professor Barger, who was born in 1878, was a Fellow of King's College, Cambridge, from 1904 to 1910, and head of the chemical department, Goldsmith's College, from 1909 to 1913. In the latter year he became professor of chemistry at the Royal Holloway College, University of London, and a year later chemist on the staff of the Medical Research Committee. In 1919 he was appointed to the newly instituted chair of chemistry in relation to medicine at the University of Edinburgh. Professor Barger has carried out much research in organic chemistry, and is the author of several books dealing with this subject, including one on *Organic Chemistry for Medical Students*, published in 1932, and a work on *Ergot and Ergotism*. In 1928 he delivered the course of Baker Lectures at Cornell University, and of Dohme Lectures at the Johns Hopkins University in the United States. He was awarded the Hanbury medal of the Pharmaceutical Society in 1934 and the Longstaff medal of the Chemical Society in 1936.

IRELAND

Health of Belfast

Four principal subjects are dealt with in the report on the health of the county borough of Belfast for 1936 by Dr. C. S. Thomson, medical superintendent officer of health. An account is first given of the work of mosquito control in the three prolific breeding grounds in the area. Dr. Thomson says that mosquitos are not only a serious annoyance but a danger to health in view of the possibility of sepsis following upon bites. The salt marsh mosquito (*Aedes detritus*) is chiefly responsible. A staff of five men is kept continually at work oiling the breeding places with waste motor oil collected from city garages. Another new health enterprise is immunization against diphtheria, a work which started in October last, but has been so vigorously undertaken that within little more than six months 4,215 children completed the immunization course. The annual notifications of diphtheria in Belfast in the last seven years have varied from some 400 to 1,200, and the deaths from thirteen to fifty-five. Dr. Thomson looks forward to an immunization rate during the next five years of about 27,000 a year. On the subject of housing he points out that Belfast is comparatively a modern city, without the large areas of wretched housing to be seen elsewhere: nevertheless there are some 2,000 houses which should be demolished, and it is hoped to accomplish this clearance by degrees. An encouraging report is given on maternity and child welfare. In the hospitals and municipal clinics 5,165 first ante-natal examinations were made, and there were 17,885 subsequent visits, plus an unascertained amount of private ante-natal supervision by medical men. The birth rate was 21.2 per 1,000, and the death rate 14.2, the one slightly below and the other slightly above the average of the last ten years. The infant mortality rate was 101 per 1,000 births.

INDIA

Research at the Calcutta School of Tropical Medicine

In 1936 the research investigations at the Calcutta School of Tropical Medicine were on malaria transmission, indigenous drugs, drug addiction, medical mycology, helminthology, anaemia of women, kala-azar, cholera, and special studies of epidemic dropsy, leprosy, and filaria. A case of agranulocytosis was discovered in Calcutta, one of the first to be reported in India. The patient had been in the habit of taking an amydopyrine derivative, and succumbed before nucleotide therapy could be tried. In the annual report of this institution for 1936 it is mentioned that the bacteriophage-therapy investigation as regards cholera has now been completed, 1,748 patients having been watched. Analysis of the results indicated that this procedure in cholera has a definite therapeutic value. Attempts are in progress to determine the mode of action of quinine and atebrin on *Plasmodium knowlesi*. It has been shown that a 1 in 50,000 atebrin solution can destroy the parasites even when the infection is very heavy. The smears of blood kept in contact with atebrin for twenty-four hours showed degenerative changes in them, and a susceptible host (*Silenus rhesus*) inoculated with this mixture was not infected. But a much stronger solution of quinine (1 in 10,000) failed to kill the parasites. In the pharmacological department work was continued on the pharmacology of snake venoms and camphor compounds. chemotherapeutic studies were performed with regard to the action of atebrin in monkey malaria and the atebrin–plasmoquine combination in human malaria, and new and efficient methods were elaborated for the estimation of atebrin and lecithin in the blood. A number of inorganic compounds used in Hindu medicine were investigated, as well as many medicinal plants. The data on hemp drug addictions are now being analysed. Important research work has been conducted on the distribution of blood groups in the Indian Army, and a technique has been evolved for the determination of blood groups from stains. A clinical trial of a special vaccine prepared from virulent cultures of two types of pneumococcus isolated in Assam gave encouraging results clinically; in a series of twenty-three cases there was only one death. It has been shown also that there is a type of severe macrocytic anaemia prevalent on the east side of India, which, unlike the microcytic anaemia, can be cured by the giving of a rich well-balanced diet. The previous work of Professor L. E. Napier had shown that the microcytic anaemia common among coolies was uninfluenced by the introduction of a good diet, and was cured only when iron was given. In collaboration with Dr. Wilson an investigation is being continued to ascertain which particular dietetic factor is responsible for improvement in the macrocytic cases. Leprolin and diathermy have been tried for the relief of neuritis in leprosy, as well as the injection of colloidal copper, cobra venoms, and hydnocarpus preparations around the nerves and into the affected areas. A careful study of the tuberculoid type of leprosy has been made, and its recognition and differentiation from ordinary leprous infiltration in the skin has been found to be very important from the point of view of prognosis. No evidence has yet been obtained of the growth of lepra bacilli in tissue cultures. It has been shown that there are patients suffering from cholera and passing typical rice-water stools in whom, despite very extensive research, only non-agglutinable vibrios can be found. In diabetic subjects it has been found that the degree of hypercholesteraemia is a much more satisfactory index of the severity of the disease than is any one of the other single factors, including hyperglycaemia. It was only cases with marked hypercholesteraemia that had complications such as arteriosclerosis and retinitis. Sexual immaturity seemed to be very closely associated with diabetes.

Madras Government Ophthalmic Hospital

During 1936 treatment was given to 31,609 out-patients at the Madras Ophthalmic Hospital and there were 4,391 new in-patients. The surplus sick were as usual accommodated in the verandas. Twenty-four beds are available for European and Anglo-Indian patients, and 146 for Indians, so that the accommodation is at times very strained. In the twelve months under review 2,954 patients were discharged as cured and 1,197 as relieved; there were eight deaths. The commonest pathological conditions were senile cataract; chronic, angular, and acute conjunctivitis; glaucoma; errors of refraction; corneal opacities and ulcerations; pterygium; diseases of the eyelids; and presbyopia. The large range of eye disorders dealt with renders this institution a particularly valuable centre for the training of medical students and postgraduates, of whom there were 231 and twenty-three respectively. The daily average attendance of patients was rather smaller than in 1935, and there were consequent reductions in the expenditure on drugs and dietaries. Establishment costs increased slightly but less was spent on the buildings. The number of surgical operations performed in 1936 was 8,162. Lens extractions were common, and other procedures included operations on the lachrymal sac and nasal duct and on the eyeball and another frequent procedure, as was also the treatment of prolapsed iris. Radium treatment was given for certain ophthalmic new growths with considerable success.

FRANCE

[FROM OUR CORRESPONDENT IN PARIS]

International Medical Meetings

The summer of 1937 stands out as remarkable for the number and importance of the international medical meetings held in Paris in connexion with the Exhibition. There must have been scores of such meetings, and some of the doctors who attempted to attend several may well be excused if the orgy they indulged in has left them a trifle confused although enlightened. Some overlapping was, of course, inevitable, but on the whole the organization of these meetings has given satisfaction and also the impression that the Gallic taste for orderliness is as keen as ever. At the cost of making what may seem invidious distinctions, reference will be made here to only a few of these meetings.

Under the presidency of Professor Laignel-Lavastine, the first International Congress of Neo-Hippocratic Medicine enjoyed the patronage of the Paris faculty of medicine and was attended by many of the most distinguished members of the medical profession, the President of the Academy of Sciences, the President of the Academy of Medicine, the doyens of the faculties of medicine and pharmacy of Paris, and many others. The sixteenth annual International Neurological Congress was opened on July 8 under the auspices of the faculty of medicine and the presidency of Professor Barré of Strasbourg. Altogether nine main reports were presented whose principal theme was pain as a neurological problem.

QUACKERY AND PUBLIC HEALTH

Les Journées Internationales de la Santé Publique occupied half a score of days and embraced a wide range of subjects grouped under ten different sections. Special mention may here be made of the sixth section, which dealt with the merchant service and to which the League of Red Cross Societies gave its patronage on account of its interest in the health of the merchant seaman. A most interesting communication was made to this section by Dr. Bernard of Belgium, who discussed the problem of wireless communications between doctors on shore and ships not carrying a doctor. These Journées included a discussion on quackery, which was held on July 7 under the auspices of the International Committee for Combating Charlatanism. Many of the speakers followed conventional lines, but there was a touch of both unconventionality and audacity in the suggestion of one speaker that the out-and-out quack might be less of a danger to the community than the fully qualified doctor with the "soul of a charlatan." When such a man "covered" unqualified medical practice the public was sore put to it to escape fleecing. Another speaker advocated the complete prohibition of written and wireless publicity in favour of quack treatment, this prohibition to be extended to the cinema and luminous advertisements. Publications not exclusively devoted to medicine or pharmacy were not to advertise prophylactic or therapeutic devices, and touting through the mail was to be forbidden. It was also proposed that a quackery commission should be appointed, and that on it should be represented the Conseil Supérieur d'Hygiène and other important bodies. Yet another suggestion concerned the supervision and regulation of titles and claims to special knowledge of certain subjects, the term "specialist" to be earned, not just self-bestowed. The most reassuring feature of this discussion was the tribute paid to the sickness insurance scheme—Assurances Sociales.

From July 19 to 25, and in the presence of a distinguished gathering, the International Congress of Mental Hygiene was held at the Centre Marcellin-Berthelot. The president was Dr. Toulouse, and a well-known figure was Mr. Clifford Beers, who has done so much to promote the cause of mental hygiene throughout the world. The fact that the President of the Republic was represented at this congress was only one of many signs indicative of its importance.

The New Minister of Public Health

M. Henri Sellier, Minister of Public Health in the Blum Cabinet, has been succeeded by M. Marc Rucart, whose recent public utterances have inevitably reflected the sombre condition of French finance at the present time. Sellier may have been an expensive Minister of Public Health, but what a driving and enterprising force he proved himself to be! It is to be feared that in many fields he may have put his hand to the plough in vain because the Blum Government had not taken Micawber's law of balanced accounts sufficiently to heart. It is to be hoped, however, that the reforms connected with prostitution and venereal disease will yet materialize, at any rate in so far as they do not drain the public purse too openly. Rucart's future achievements must be judged with a leniency inspired by knowledge of the limited financial means at his disposal.

G. S. Hall (*J. Neurol. Psychopath.*, January, 1937, p. 262) points out that chronic subdural haematoma is not a rare clinical entity, and should be distinguished from the acute type. He records four cases which he encountered in one year. Increased intracranial pressure did not occur in all the cases, but it was found that the symptoms depended on the degree of increase in the intracranial pressure present. This in turn depended on the age of the patient, the younger patients having the highest pressure. A review of the literature supports the view that the clinical picture of the condition and the occurrence of raised intracranial pressure are both determined by the age period in which the lesion develops. In infancy the pressure is so high that the condition mimics "idiopathic" hydrocephalus. In middle life the picture is one of increased intracranial pressure, while in later life the condition is difficult to recognize, as the pressure is not raised at all.

Correspondence

The Radiology of Megacolon

SIR,—Dr. John R. Wylie in his letter to the *Journal* of August 21 states that the normal variations in tone of the alimentary tract have been frequently misunderstood by the radiologist. This is doubtless a result of insufficient study of Sherrington's fundamental work on the postural tone and postural length of involuntary muscle, without which it is impossible to interpret the significance of the considerable changes which occur in the size, shape, and position of the stomach and colon in every individual in the course of a single day. There is, however, no excuse for ignorance on the subject since the publication of Dr. A. E. Barclay's *Digestive Tract*. In his criticism of my views on the interpretation of the information given by an opaque enema in cases of megacolon Dr. Wylie himself shows a want of familiarity with Sherrington's work.

The tone of the stomach can be judged from the level of the upper limit of its contents when viewed at *x*-ray examination after an opaque meal. The size of the latter is immaterial, as the tone varies with the bulk in such a way that the intragastric pressure remains constant. It is, however, customary to give a comparatively small meal, as most people would find it difficult to take a large quantity of the opaque mixture. If the tone of the stomach were judged in a manner corresponding with that advised by Dr. Wylie for the colon, the patient would have his stomach filled through a tube with a thin suspension of barium under a constant (and presumably low) pressure until he felt full enough to vomit. This would, however, show nothing more than the distensibility and maximum capacity of the stomach, which have nothing whatever to do with its tone.

The postural tone of the colon, like that of all other hollow viscera, adapts itself to the volume of its contents, with the result that the pressure within it remains approximately constant. The diameter of different parts of the colon and its total length show great variations during the day. Thus, in the early morning the pelvic colon is full and its postural tone is low, so that its length and diameter and consequently its capacity may be sufficiently great to hold all its contents. But immediately after defaecation the pelvic colon is empty; its postural tone is then maximal and its lumen entirely obliterated. The appearance of the pelvic colon after a barium enema given as recommended by Dr. Wylie shows its size with minimal postural tone if time is allowed for complete relaxation to occur. But to say that it gives a good estimate of bowel tone is quite meaningless, as the tone depends on the volume of its contents, varying between a maximum when it is empty, an average minimum when it is full just before defaecation, and an extreme minimum, corresponding with the greatest distension it has ever experienced, when it is fully relaxed after an opaque enema. Consequently, in both children and adults with megacolon, an opaque enema always shows a greatly dilated pelvic colon, even years after complete recovery, whether the result of medical treatment or sympathectomy. An opaque enema is therefore valueless as an estimate of the success of treatment. The appearance of the abdomen is the best guide in children, but an opaque meal and the sigmoidoscope can also give valuable information. The latter show that the postural tone of the individual muscle fibres of the circular and longitudinal muscle coats, and with them the diameter and length respectively of the pelvic colon, may have returned to normal, even when an opaque enema shows that the colon is still capable of being greatly distended if fluid is slowly run into it from below, a condition which bears no relation to anything occurring under normal conditions of life.

The radiological examination of the renal pelvis gives a good illustration of the difference between tone and distensibility. Intravenous pyelography shows the size of the pelvis under natural conditions, the tone of its musculature and therefore its size being adapted to the amount of urine secreted at the moment. On the other hand, retrograde pyelography shows its size when distended to a degree sufficient to cause slight discomfort. In early cases of intermittent hydronephrosis intravenous pyelography reveals a pelvis of normal size, but the retrograde pyelogram reveals an enlargement corresponding with the size of the pelvis during an attack—that is, it affords a measure of its distensibility, which depends upon the maximal size it has hitherto attained and not its average size under normal conditions between attacks. The intravenous pyelogram corresponds with the appearance of the colon after an opaque meal, the retrograde pyelogram with that after an opaque enema.—I am, etc.,

ARTHUR F. HURST.

New Lodge Clinic, Windsor Forest, Sept. 3.

Cataract Extraction

SIR,—Mr. Basil Graves gives in his interesting paper in the *Journal* of August 14 (p. 319) a description of his technique of cataract extraction during narcosis. In preference to his rather complicated method I adopt the simplest possible (*Arch. Ophthal.*, Chicago, 1934, 2, 102). Briefly, this consists of the instillation of five drops of cocaine thirty minutes before operation; suture fixation; retrobulbar injection of novocain-suprarenin; lobular incision with a conjunctival flap; iridectomy; and finally intracapsular extraction by the direct method without tumbling the lens, using Arruga forceps. Loss of the vitreous has followed in only 2 per cent. of cases, and an unfavourable result in only 0.5 per cent. "Expulsive haemorrhages" in the last ten years have occurred in only four instances out of 5,000 cataract extractions.—I am, etc.,

Budapest, Aug. 19. EMILE DE GRÓSZ.

SIR,—I have read with much interest Mr. Basil Graves's account of his method of narcosis for eye operations—in particular cataract extraction. A certain amount of experience in eye work, from the point of view of a civil surgeon in India, enables me to appreciate the great advantage of something approaching general anaesthesia in operating for cataract if the co-operation of the patient can be dispensed with, as in Mr. Graves's method. Unconsciousness of the patient is a gain not only to him, but also to the surgeon. I know from experience that the tendency to tremor in fine work of this description is much increased by the knowledge that the patient is nervous, and perhaps even suffering some pain.

My interest in the subject is heightened by the fact that Mr. Graves operated on me for cataract last year, and again, on the other eye, nearly three months ago. On the former occasion, nembutal being used, I was conscious, but went to sleep immediately after the operation, and slept soundly throughout the night. During the second

operation, following the administration of omnopon and rectal paraldehyde, I was completely unconscious, and I slept as before without any intermission until the following morning. In both cases the operation was at about 5 p.m. The ultimate result in both eyes leaves nothing to be desired. It may be said, admittedly, that I am not an unprejudiced observer. I am a very grateful patient. But my experience of what seems to me a most useful revolution in the operative treatment of cataract may be of interest.—I am, etc.,

Bournemouth, Aug. 25. A. HOOTON.

The Place of Pharmacology in the Medical Curriculum

SIR,—Now that most of the medical institutions, both in England and India, will soon adopt the revised medical curriculum, and criticisms from different sources have been recorded, may I be permitted to make a few observations.

In none of the criticisms which appeared was the subject of pharmacology discussed. No one can deny that to be a successful practitioner, or even a specialist, one must know the subject of pharmacology and its practical application in disease. About a quarter of a century ago pharmacology was taught with therapeutics, and the names of men like Sir Lauder Brunton, Mitchell Bruce, Sir Thomas Fraser, and Professor Ralph Stockman naturally come to mind. Fortunately, Professor Stockman is still with us. These professors had clinical beds, and were thus able to impress on the students the practical application of the knowledge of pharmacology in disease. As time went on the science of pharmacology developed, and it was thought that the subject should be taught with experiments so that the student would be able to visualize the action of drugs on animals. This no doubt made the teaching of pharmacology more interesting, and it was separated from therapeutics, which was taught as a detached subject. The result was that while a student, or for the matter of that a junior practitioner, was conversant with the pharmacological action of a drug, he was hopelessly ignorant of the practical application of that knowledge in therapeutics. While more attention was paid to the teaching of pharmacology as a scientific subject pure and simple, the teaching of therapeutics was neglected, and no proper attention was given to the teaching of materia medica proper—that is, prescription writing, incompatibility, etc. No one will question the value of experimental work, but pharmacology is not all experiments, and it has to be conceded that the primary object of teaching the subject is to enable the student to appreciate the rational basis of therapeutics, and the best way to estimate the practical value of this form of teaching is to see how far we have been able to attain the objective we have in mind. To teach the different subjects in separate watertight compartments is a great mistake, and the modern teaching entails that each of the basic subjects should be taught as an applied subject.

Having taught pharmacology for over twenty years, and also having had the opportunity of coming into contact with students in different parts of India, I am convinced that to teach the subject as we have been doing will lead us nowhere, and that it is time we faced facts and rearranged the method of teaching on the basis of our past experience. It will be interesting to hear the experience of other teachers on the subject and to have their constructive suggestions. To my mind the subject of pharmacology should be taught in the clinical period, and therapeutics should be closely co-ordinated with it. Moreover, pharmacology and therapeutics should be taught by the same teacher, who should be in charge of clinical beds.—I am, etc.,

B. N. GHOSH, F.R.F.P.S.Glas.,
Calcutta, Aug. 23. Professor of Pharmacology, Carmichael Medical College.

The Teaching of Medicine

SIR,—Much of Sir David Wilkie's article in your Educational Number (September 4, p. 439) is as pertinent to other branches of teaching as to his own, and his views invite more than our tacit acceptance. To teacher and student alike the implication of these words is a call: "Our object is to educate rather than to instruct. . . . The greater the co-ordination and harmony . . . the more complete and generous will be the education." Co-ordination and harmony are conspicuously lacking in the world to-day, and each of us must make his choice between a course of discord and one along which harmony can be restored to our lives and those of our fellows. The latter can be attained at the cost of a complete revolution in oneself.

It has come home to me lately that my own teaching has often been dishonest, and the sequel to such dishonesty is interesting. A few evenings ago at my own fireside I invited from a recent graduate of my own school his views on the clinical side of medical teaching. What I learned is not difficult to guess; when I had taken considerable trouble over the preparation of a clinic the student derived considerable benefit from it, but when conflicting interests or self-assurance had prompted me to teach on a patient whom I had not made the subject of careful study, however simple the condition—perhaps a straightforward valvular heart disease—the student's time and my own were largely wasted. I discussed with my friend some of the difficulties that students of medicine have, and there can be little doubt that one upsetting feature of teaching is the disharmony of view, it may be on nomenclature, on classification, or on the significance of a particular sign, on anything in fact that the student encounters in different teachers. When I say to myself "I do not agree with So-and-so's opinions or methods" I am putting a stumbling-block in the student's way, and there may be no obstacle to my acceptance of So-and-so but my own self.

My friend and I also shared a conviction that there is too wide a gulf between the teacher and the student. If, by aloofness which I hope will call forth respect, or by witticism at a student's expense, or by sarcasm, which I think is gentle but which he knows to be cruel, I help to establish and maintain that gulf, I cannot hope to send that man into the world at the end of his course equipped to build bridges across the hundred and one gulfs he will encounter between himself and his fellows. If I am teaching students and there is disharmony in my own life, their education, so far as I am responsible for it, will assuredly be neither complete nor generous. I cannot establish harmony between myself and my fellow, whether student or teacher, by condescension or patronage, but if he and I will allow our working day to be permeated by a spirit of fellow-discipleship of the Highest Teacher of all under His guidance we can play our part in helping our profession to take its appointed place in the rehabilitation of this tottering world.—I am, etc.,

Dundee, Sept. 5. JAMES M. STALKER.

Medical Records

SIR,—It would surely be of the utmost value to everybody concerned if a central record office could be established in London to pool information relating to investigations carried out upon patients in hospitals, operations performed, etc. At the present time a patient will often pass through an elaborate series of investigations in one hospital, and then in the course of months, or it may be two or three years later, will go to another hospital, where a similar series of investigations are carried out. Similarly, a patient may have a laparotomy performed for diagnostic purposes, and at a future date, as a result of a recurrence of the symptoms, may seek advice at another hospital where, lacking precise information as to the results of the former investigation, another laparotomy is performed. This is particularly true of the patient who has what may be termed a neurotic constitution with a tendency to autonomic and endocrine imbalance, which results in various forms of physical dysfunction with symptoms the exact significance of which it is extremely difficult to assess. Such patients have a tendency to wander from doctor to doctor and from hospital to hospital. It is obviously inadvisable to give the patient a written account of the results of investigations, operative procedures, and the like, as this in itself might constitute a basis for the development of a hypochondriacal outlook in a predisposed person, and would often cause unnecessary suffering.

All records, therefore, are at present buried deep in the files of the individual hospital. It is true that in theory at least it is possible to obtain some information by communicating with the registrar, but this is seldom complete, and when it has to be collected from various sources involves a delay which often renders it of little value. The existence of a central record office where a brief report of the investigations, surgical procedures, diagnosis, and prognosis could be filed and obtained by any general practitioner or any other hospital would be a labour-saving device of the first order. It would, moreover, form an invaluable body of information available for research purposes. The expense of setting up and maintaining such a central co-ordinating bureau would admittedly be considerable, but the saving to the hospitals using it would also be on a vast scale both *in time and money*, and the advantage to the public and to medical science generally would be incalculable. It could be financed partly by means of contributions from the hospitals using it, by payments made for information given in respect of individual patients, by trust and charitable funds, and possibly by Government and local authority grants.—I am, etc.,

London, W.1, Aug. 25. DORIS M. ODLUM.

Sulphanilamide in the Treatment of Gonococcal Infections

SIR,—When this remarkable drug, sulphanilamide, was discovered to have a specific action against infections due to the haemolytic streptococcus, the meningococcus, and some other bacteria, it was hoped that it might be effective against the gonococcus. As soon as it was available many authorities in England, Ireland, and on the Continent, including the original makers of the drug, tried its action on gonococcal infections and reluctantly concluded that it was unsatisfactory.

At the instigation of the Therapeutic Trials Committee of the Medical Research Council I tested two series of patients suffering from acute gonococcal urethritis: four cases with prontosil album, the original German preparation, and fifteen with a drug of British manufacture. The results were distinctly disappointing, and other venereologists in this country had similar experiences. More recently Dees and Colston (*J. Amer. med. Ass.*, May 29, 1937) refer to the use of sulphanilamide in gonococcal infections. They concluded that the drug will prove of great value in this disease. The prompt response to treatment in the majority of their cases (nineteen in all), the smooth clinical course, the fact that no complications occurred and that the infection had not progressed, together with the reduction in hospital expenses, impressed them profoundly. The possibilities of sulphanilamide in treating gonococcal infections also formed the subject of discussion at the recent meetings of the American Medical Association at Atlantic City, the American Neisserian Society, also at Atlantic City, and at the American Academy of Pediatrics in New York City. At these conferences many physicians expressed their opinion that the drug could be regarded almost as specific in gonorrhoea as it is in the treatment of haemolytic streptococcal infections.

As a smaller initial dose was given during my previous trials than that used by Dees and Colston, tests were repeated on a third series of twenty acute cases. The treatment outlined by these workers was followed exactly —that is, four divided doses a day, 4.8 grammes of sulphanilamide daily for two days, 3.6 grammes daily for three days, and then 2.4 grammes daily for from four to eight days. No other treatment, either local or general, was used, and, as before, the results were unsatisfactory. To summarize, my experience with sulphanilamide administered orally in the treatment of acute cases of gonorrhoea is that it is ineffective. The drug does not appear to act satisfactorily in combating the gonococcus, however good it may be in some other infections.—I am, etc.,

London, W.1, Aug. 25. T. ANWYL-DAVIES.

Treatment of Giant-cell Tumour of Bone

SIR,—I am grateful for Mr. R. C. Elmslie's letter (*Journal*, August 28, p. 431) on giant-cell tumours of bone, with much of which I am in agreement. There are, however, some points on which more precise information is required, and several inaccuracies must be corrected.

1. That a tumour of bone can only be diagnosed with certainty by a biopsy is self-evident. The practical point, however, is that when a first-class radiologist says that a tumour of bone is a giant-cell tumour the probability that he is correct is such that treatment based on his opinion is completely justified. At the Presbyterian Hospital a mistaken diagnosis is made in about 5 per cent. of cases. Will Mr. Elmslie, or the radiologists, tell us what percentage error they expect? Many do not regard the occasional error as a serious mistake, for the surgical results in such cases are so dismal.

2. It is pleasing to learn that there was agreement that a biopsy should be free and the sections made at leisure. As a pathologist I am acutely conscious that there is not general agreement on this point anywhere, though I believe it to be correct. Among the New York surgeons mentioned Dr. Auchincloss definitely disagrees. It is easy to name other leading surgeons here and abroad who also disagree. The greatest danger of a frozen section is that a diagnosis may be made which is not justified by the preparation, but that does not alter the fact that in many cases the diagnosis from the quick section is quite reliable.

3. I do not think anybody disputes that a giant-cell tumour can be cured by curetting, and it is pleasing that there is no dispute that they can equally be cured by radiotherapy. However, I will indeed be most surprised if there are many who will agree with Mr. Elmslie that surgery is safe and simple while radiotherapy is dangerous. Surely the reverse is true,

and is the reason why most patients will be disappointed that "most surgeons will prefer to keep to the knife." I will refuse to believe that there are competent radiologists who forget that there are such things as skin, muscle, etc., but it is delightful to learn that they can forget that women have genital organs.

Mr. Elmslie completely missed the point of the case I quoted. An accurate diagnosis was made from the original *x*-ray photographs and was acted on correctly. Quite a number, including James Ewing, said that an ideal result would have followed. The lesson learned was not that radiotherapy is dangerous, but that the radiographic appearance of giant-cell tumours undergoing treatment needs to be more generally understood. Radiotherapy is in its infancy compared with surgery, and these lessons have to be learned. Nevertheless, the elaborate follow-up system used by the Americans (which we so rightly admire) does seem to show that except for special cases radiotherapy is the treatment of election. Curetting is not condemned, but it has been observed that it is dangerous to use both local surgery and radiotherapy. Because it is difficult to explain this observation we must not doubt its truth; I have seen it convert a benign into a malignant giant-cell tumour myself. Dr. Haagensen is emphatic about the danger, and the observations were on cases which had a biopsy at the start—and a necropsy at the end. This danger is not an argument against radiotherapy at all. It is an argument for competent radiologists, and if one is not available or is not reasonably sure that the lesion is a giant-cell tumour then the surgeon should rely on himself alone for treatment. It should be needless to add that I did not say that merely cutting into an innocent tumour can render it malignant.

It is evident that there will be two schools of thought on this subject for some time. I have no doubt, however, how I would prefer to be treated myself.—I am, etc.,

Derby, Aug. 28. G. R. OSBORN.

SIR,—Had the summary of my remarks at the discussion which I submitted (on the forms provided) on July 26 been published or consulted in making up the report of the proceedings for the *Journal* of August 7 it would not have been necessary for me to reply to Mr. Elmslie's letter, in which he states that there was general agreement upon three points, for two of these are in direct opposition to the experiences which I there related—namely, (1) that a tumour of bone could only be diagnosed with certainty by means of a biopsy; (2) that an osteoclastoma is capable of cure by the simple and safe surgical procedure of curetting. To show how little agreement existed between us over these points I should like to criticize the report which was printed in the *Journal* of August 7, and for this purpose shall indicate the report in italics and follow each statement with my comments.

1. "*The clinician was becoming increasingly anxious to pass the responsibility of diagnosis on to the radiologist.*" What I said was that, while in some cases the diagnosis on radiographic evidence was definite and could be acted upon by adopting prompt radical surgical procedures, unfortunately there were cases in which the clinical, histological, and radiographic evidence was insufficiently convincing to the surgeon to warrant mutilating surgery, and owing to the poor results of the latter in bone sarcomata the clinician was more and more seeking the refuge of radiotherapy—at any rate until the nature of the lesion had revealed itself. It is well known that for some months following radiotherapy the radiographic appearances of an osteoclastoma suggest that the tumour is extending, but subsequent radiographs show increased consolidation. In spite of this apparent healing I stated that in my experience local resection of a simple tumour was preferable to either *x*-radiation or curetting: the former may leave the patient with destructive effects and pains more serious than the bone tumour, while even after thorough curetting malignant metaplasia of remaining tumour cells may occur. I have published an account (see *Proc. roy. Soc. Med.*, 1937, **30**, 9, and *Brit. J. Rad.*, 1937, **10**, N.S. No. 111) of such sequelae fifteen years after curetting; it has followed curetting of so-called localized fibrocystic disease; we have no proof that similar metaplasia will not occur if the only treatment is radiation. *X*-radiation is probably justifiable only in the case of inoperable tumours, and even with these the results are not very hopeful. The best American results in bone sarcomata were obtained by amputation or resection followed by the administration of Coley's fluid.

Regarding biopsy, I stated that it was in some cases dangerous and misleading, for following trauma, either accidental or surgical, malignant bone tumours appeared to show more rapid growth and metastases were to be detected soon after. In support of the more serious charge of "misleading" I exhibited the radiographs of a number of cases in which the radiographs indicated innocence, but the histology malignancy, and others in which the radiographs indicated malignancy whereas the histology favoured innocence and the subsequent histories had proved the radiographic evidence to be the correct.

2. "*The radiodiagnostic test was not dangerous unless the surgeon refused to intervene when radiation treatment failed.*" In this case the reporter's interpretation is absolutely wrong. When the radiodiagnostic test is applied to an endothelioma of bone (Ewing's tumour) the tumour in some cases responds and the bone may even take on the radiographic characters of normality. Such a response is regarded as evidence that the lesion is a sarcoma and calls for drastic surgical measures in spite of the apparently good response, which, alas, is only temporary and not curative. It can therefore hardly be said that the radiation has failed, or even succeeded, but if the apparent success (not failure) checks or delays surgical intervention the test introduces the element of danger. Surgery is not undertaken for bone sarcomata which have been undergoing frank radiation therapy (not a short test) and failed to respond, except for the temporary relief of pain and removal of a fungating mass: therefore failure to adopt surgical measures when radiation has failed cannot be regarded as dangerous.

Because I was able to show that in some cases either the clinical or the histological or the radiographic examination alone supplied the essential evidence, and that evidence from one or the other of these sources might be inconclusive or misleading, I pleaded for a more intimate co-operation of surgeon, pathologist, and radiologist in all cases.

—I am, etc.,

Birmingham, Aug. 30. JAMES F. BRAILSFORD.

*** It must be pointed out that Dr. Brailsford did not give the summary of his remarks to the reporter at the Meeting, as requested in the directions in the handbook of the Meeting. In the account given in the *Journal* of August 7 (p. 285) of Dr. Brailsford's remarks six of the nine points raised by him were correctly reported, two were records of the impressions of the reporter, and the third (No. 2 in Dr. Brailsford's letter) was apparently misleading.—ED., *B.M.J.*

Bilateral Artificial Pneumothorax

SIR,—While disagreeing with much that is said in Dr. Crocket's article in the *Journal* of August 7 (p. 261), particularly with the technique applied, I feel that he has done good service in drawing attention to bilateral pneumothorax. But as he has not given any figures perhaps those of bilateral pneumothorax undertaken at the Cheshire Joint Sanatorium might be of interest. The classification of bilateral artificial pneumothorax I adopted is as follows:

PRIMARY BILATERAL

(*a*) *Immediate.*—Cases with bilateral disease at the initial examination and in which a double artificial pneumothorax

(A.P.) is at once prescribed, both sides being collapsed as soon as possible. If one side cannot be collapsed the case is transferred to Choice 3 of unilateral A.P.

(*b*) *Delayed.*—Cases similar to group (*a*) but in which only the more severe side is collapsed at once and expectant or other treatment adopted for the contralateral lung. Later this lung is unaltered, or worse, and therefore collapsed, thus giving a bilateral A.P.

Primary Bilateral

Year of Induction	No. of Cases	Years since Induction	Alive		Alive, March, 1937	
			No.	Per cent.	No.	Per cent.
1930–4 inclusive	92	2	62	67.39	54	58.7
1930–3 „	65	2	41	63	33	50.76
		3	37	57		
1930–2 „	32	2	17	53	11	34.37
		3	15	47		
		4	12	37.5		

SECONDARY BILATERAL

A group of cases initially considered as a good selection for unilateral A.P., but later an acute spread in the contralateral lung occurs and this side is collapsed concurrently with the other.

Secondary Bilateral

Year of Induction	No. of Cases	Years since Induction	Alive		Alive, March, 1937	
			No.	Per cent.	No.	Per cent.
1929–34 inclusive	33	2	23	70	21	63.63
1929–33 „	26	2	16	61.54	14	53.84
		3	15	57 7		
1929–32 „	16	2	9	56.25	7	43.75
		3	8	50		
		4	7	43.75		

Primary and Secondary Bilateral (Combined)

Year of Induction	No. of Cases	Years since Induction	Alive		Alive, March, 1937	
			No.	Per cent.	No.	Per cent.
1929–34 inclusive	125	2	85	68	75	60
1929–33 „	91	2	57	62.63	47	51.64
		3	52	57.14		
1929–32 „	48	2	26	54.16	18	37.5
		3	23	47.91		
		4	19	39.58		

CONSECUTIVE OF SUCCESSIVE ARTIFICIAL PNEUMOTHORAX

Where an artificial pneumothorax has been completed on one side and later an A.P. has been established on the contralateral.

Consecutive

Year of Induction.	No. of Cases	Years since Induction	Alive		Alive, March, 1937	
			No.	Per cent.	No.	Per cent.
1926–34 inclusive	34	2	29	85 3	13	38.23
1926–33 „	32	2	27	84.37	11	34.37
		3	19	59.37		
1926–32 „	31	2	26	83.87	10	32.25
		3	18	58		
		4	14	45		
1926–31 „	30	2	26	86 6	10	33.33
		3	18	60		
		4	14	46 6		
		5	12	40		

CONTRALATERAL ARTIFICIAL PNEUMOTHORAX (A FREAK)

Artificial pneumothorax on healthy side with a view to controlling the diseased side.

—I am, etc.,

Cheshire Joint Sanatorium, Market Drayton, Aug. 30. PETER W. EDWARDS.

Ambulatory Artificial Pneumothorax

SIR,—We read with great interest the excellent article by Dr. James Crocket on artificial pneumothorax treatment in the *Journal* of August 7 (p. 261). We propose to comply with the implied invitation in the section on ambulatory artificial pneumothorax, and regret we have not been able to do so earlier.

During the past five years we have found it necessary to induce ambulatory artificial pneumothorax in thirty-six cases. In the majority of these the induction was carried out at the dispensary and a few in the patients' homes. The patients were conveyed by car or ambulance and screened before and after induction. They rested on a couch for two or three hours, as it was felt that any complication due to the induction would have manifested itself during this period. Nineteen of these patients were subsequently admitted to hospital after an average waiting period of three months. It is our opinion that the time of institutional treatment was definitely shortened by the artificial pneumothorax, and in the majority of these cases there is every probability that, had the treatment not been started at the dispensary, the disease would have progressed so that unilateral artificial pneumothorax might have been impossible. The remaining patients were treated entirely at the dispensary, and among these have been some of our most successful cases. One, a male aged 24, has gained over three stones in weight during his year's treatment, and radiologically there is marked clearing of the disease.

It will be a matter of interest to Dr. Crocket to know that we have also induced five cases of simultaneous bilateral artificial pneumothorax. One, we hope, is proceeding to ultimate cure. Having lost a stone the patient regained it after the second induction, and *x*-ray examination now shows little evidence of active disease. Two other patients, females aged 19 and 20, are doing very satisfactorily both clinically and radiologically, and in spite of their age group we are very optimistic regarding the prognosis; one of these cases was complicated by bilateral effusion. For differing reasons none of these three cases has received hospital treatment since the second induction. The other two patients died. One was a girl of 15, who, however, gained one stone after the second induction. The other, a young woman, suffered an extension of the disease to the opposite side following the birth of a child; she also made some initial progress following the second induction and gained 3 lb.

Full notes, films, and diagrams of screenings of all the cases are available, and we hope after the lapse of the necessary time to publish our results.—We are, etc.,

R. MELVILLE HILEY,
E. A. ASLETT,
Aug. 28. The King Edward VII Welsh National Memorial Association.

Chronic Disseminated Tuberculosis

SIR,—The book by Clifford Hoyle and Michael Vasey reviewed in the *Journal* of August 28 (p. 421), the paper by R. H. Fish in the *Archives of Diseases in Childhood* (1937, **12**, 1), and the invitation to Professor L. Sayé to read a paper on the subject before the Tuberculosis Association in April, 1936, are clear indications that chronic miliary tuberculosis is to be recognized in this country as an important clinical and pathological entity. It should be added, however, that chronic miliary tuberculosis is a somewhat protean condition, which justifies the substitu-

tion of the name "chronic disseminated tuberculosis" for "chronic miliary tuberculosis." It may appear as, or develop into, less recognized but not less important forms, which I demonstrated on the occasion of the visit of the Tuberculosis Association to the Papworth Village Settlement in March, 1934.

Chronic miliary tuberculosis may be "discrete"—that is, confined to the cortico-pleural, apical, or interlobar parts of the lung; it may produce miliary emphysema due to fibrosis of the nodules with subsequent distortion of the alveoli and small bronchi; or it may be associated with caseous pleurisy. The miliary nodules may be entirely fibrotic and form radiating scars, or they may be caseous, become confluent, and form infiltrations. These, after liquefaction, show the characteristic picture of "punched-out" cavities, sharply contrasting, because of their thin wall, with the cavities found in phthisis generally.

Chronic disseminated tuberculosis in its various forms is a chronic pulmonary lesion, haemic in origin, and associated with extrapulmonary manifestations, not seldom clinically latent; it is distinctly different from bronchogenic tuberculosis confined to the lungs. In the blood, serum substances retarding the growth of tubercle bacilli *in vitro* are often found in patients showing the haemic lesion, but are absent in those suffering from chronic isolated pulmonary phthisis. It should be remembered, however, that I was able at Papworth to produce in immunized animals the early forms leading to the isolated bronchogenic lesion by a haemic infection, which produced in a normal animal acute miliary generalization.

One point may be finally mentioned in connexion with the diagnosis of chronic miliary tuberculosis. In patients showing a chronic miliary spread it is often impossible to find evidence of tuberculosis, even on the post-mortem table. In such cases—without occupational history—I have several times found anthraco-silicotic changes near the hilum, and I regarded the miliary spread as silicotic rather than tuberculous in origin since, by experimental injection of silica, miliary nodules can be obtained identical with those mentioned. These doubts in the diagnosis of chronic miliary tuberculosis hold good in some cases recently described in the literature.—I am, etc.,

Papworth Village Settlement, Sept. 3. WALTER PAGEL.

Physical Disorder in Mental Hospitals

SIR,—The very interesting and suggestive paper entitled "Physical Disorder in 164 Consecutive Admissions to a Mental Hospital" by Dr. Robert Phillips in your issue of August 21 (p. 363) merits more than passing notice. It stirs an interesting memory of the time, many years ago, when I was in charge of the "mental" wards in the Edinburgh Royal Infirmary for nine years, during which period some fifty patients were annually certified and sent to Morningside Asylum. The fullest possible advantage was taken of the regulations of the hospital by which patients could be retained in the ward for two months' observation and treatment. Inspired by the valuable pioneer work on the blood by Dr. Lewis Bruce on the relation of physical disorder to mental disease, I directed my attention mainly to the presence of nutritional disturbances so far as these might be revealed by the examination of the urine, stools, and radiological examination of the *primae viae*. This investigation involved, *inter alia*, the careful examination of the urine for bacteria, presence of cells, etc., and of the state of the stools, notably the degree and persistence of foul odour, and general character of the flora on microscopical examination of stained films. The general conclusion drawn from lengthy observation and treatment based on its results was that a definite physical disorder was very much more common than was recognized, and that treatment of the physical condition was frequently remarkably successful in correcting the mental derangement. A record of the results was, at the instance of my friend the late Professor G. M. Robertson, the president of the Royal Medical Psychological Association, submitted at one of the annual meetings of the association in Edinburgh. At that time it was unreasonable, from the unusual nature of the lines of inquiry recommended, to expect a great deal of informed criticism. Many years' subsequent experience has not led to any material change in my opinion.

If my experience does not lead me to accept wholly Dr. Phillips's conclusions, the divergence of opinion may, I think, be explained by two points—one a question of "nomenclature," the other a varying interpretation of the word "necessity." In regard to the first, Dr. Phillips tells us that his series of cases included only five patients suffering from "alimentary *diseases*"—cancer, visceroptosis, and anorexia nervosa—and two patients suffering from "urinary *disease*"—renal calculus and cancer of the bladder. (The italics are mine.) I venture to assert that in any large series of mental cases the proportion of patients affected with notable *disorder* in these two systems is enormously greater than is recorded in his interesting series, and, further, that no sound conclusion as to causal connexion can be drawn until the physical disorder is corrected and the mental condition remains unchanged.

Regarding the second point, the limits of Dr. Phillips's paper did not allow for his presentation of data on points which are, in my view, essential in determining the correctness of the conclusion I drew from my own observations. And his statement that "the diagnoses of the cases reviewed have, when necessary, been confirmed by the consulting staff of the hospital, by laboratory methods, by *x*-ray examination, by operation, and in a few by necropsy" leaves the position unsatisfactory. Much obviously depends on the different views prevailing as to necessity.

A specially interesting point in Dr. Phillips's record is his description of fourteen cases classified as an acetonuric group. "A careful survey showed that all were in a debilitated state, with varying degrees of cachexia, exhaustion, cyanosis, furred and dried tongues, and foul stools." In relation to this, is it not a little doubtful whether Dr. Phillips is sound in his conclusion, which I assume he draws, when he states that while the general symptoms resulting in the ketosis were similar, the psychosis producing the symptoms varied, as illustrated by the names of *ten different psychoses*? (The italics are mine.)

Dr. Phillips's contribution is a noteworthy one. All will agree with his conclusions that "in a case presenting any abnormality the first essential is a thorough physical examination," and "the value of a well-equipped laboratory dealing with the problems of bacteriology, pathology, and biochemistry is emphasized." While not unmindful of newer teaching and practice, it is of value to emphasize equally the need for a wider outlook on the problem of nutrition of the mind and body alike, to cultivate the greater use of the unaided senses in diagnosis, and to remember the teaching of the ancients as revealed by the term "melancholia" for the large group of mental disorders in which a depressed state of mind is the leading feature.—I am, etc.,

Drem, N.B., Aug. 29. CHALMERS WATSON, M.D.

Insects and Disease

SIR,—In your issue of August 28 (p. 434) Dr. C. H. Foley contradicts my statement that the fever which afflicted Cromwell's army in Ireland was typhus, and asserts that the epidemic in question was plague. He mentions the outbreak of plague in Galway some weeks before Cromwell's arrival in Ireland, and the later involvement of Dublin. With these events I am familiar, like everyone else who has made any study of the history of epidemic diseases in Ireland. Had Dr. Foley been present at the lecture he would have realized that I concerned myself only with the main force commanded by Cromwell in person, which never approached Galway.

In the past no army subjected to the privations of a protracted campaign in Europe could hope to escape those twin plagues of war—dysentery and typhus—least of all in Ireland, where both diseases were normally endemic. The Lord Protector's army was no exception to this general rule. Boate, who was Cromwell's "Doctor of Physick to the State in Ireland," and who died there four months before Cromwell's return to England, says that two epidemic diseases were "very common". . . "in the English armies which since this bloody rebellion went over into Ireland"—namely, "the looseness" (dysentery) and "the malignant feaver"—under which usual name for typhus Boate gives a recognizable description of the infection. These two maladies he designates "reigning diseases" of Ireland. He tells us further, as we know from other sources, that because of its generality in Ireland the looseness is called by the English inhabitants "the country disease," and that the malignant fevers are "vulgarly in Ireland called Irish agues, because that at all times they are so common in Ireland, as well among the inhabitants and the natives, as among those who are newly come thither from other countries." Boate says nothing of plague in the Parliamentary forces. Indeed, he makes the general observation—based presumably on the fact that epidemic plague in Europe was in general a hot-weather disease—"The plague which so often and so cruelly infecteth England . . . is wonderfully rare in Ireland, and hardly seen once in an age." Nor does Cromwell himself refer to plague in his dispatches, and when commenting on his losses from disease he mentions only "the country disease" and "fever." Cromwell's lieutenant-general, Michael Jones, a fine soldier and a great man, died at this time of "contagious spotted fever." In justice to the distinguished historian whose error in confusing the Irish ague with malaria suggested my reference to Cromwell's army, I should point out that later in his account of the epidemic in question he names it correctly under one of its synonyms, and writes: "The weather was vile. The sickness among his troops was no longer malaria and dysentery but spotted fever, that plague which turned men's bones to water."

General and undefined mention of "plague" cannot be accepted as necessarily indicating bubonic plague, for the term was commonly used with even a wider application than our modern "epidemic." None the less, there seems to be no doubt that true plague was rife in several Irish towns after the Cromwellian occupation. But it is incredible that the generalized famine-pestilence which devastated the whole country could have been that disease. All the circumstances known to me of its incidence and distribution point to typhus. Unfortunately the contemporary accounts are scanty, but if the detailed descriptions of the later universal epidemics of famine-typhus in Ireland were condensed to the same compass they would give an identical picture. The medical history of Cromwell's army was repeated in the Williamite wars, thirty years later; but here, due chiefly to the industrious chaplain of Gower's regiment, we possess ample clinical details of the terrible ravages of dysentery and typhus—the latter in its most malignant form with gangrene of the extremities as a frequent complication—which reduced Schomberg's army to one-half of its initial strength.

Dr. Foley mentions the associated death of animals as excluding typhus. It is too late in the day, I suppose, to advise him to question survivors of the Irish famine-typhus of 1848 on the point. If this were possible, judging from my own experience in the past, he should have little difficulty in obtaining such accounts, the mortality in animals not being due to typhus but to the general circumstances of famine and pestilence. Nor does exalted rank confer any immunity from typhus, as witness the sad fate of the dignitaries of the High Court of Justice as late as the middle of the eighteenth century in England. Moreover, were not lice-infested senior officers one of the minor horrors of the Great War?

I suggest that Dr. Foley's "true facts," so far as Cromwell's own army is concerned, would amaze no one more than the Lord Protector.—I am, etc.,

London, Aug. 28. W. P. MACARTHUR.

The Vocal Cords in Singers and Speakers

SIR,—Mr. Victor Lambert, in his contribution to the discussion on the natural singing voice in your issue of August 28 (p. 432), seems to me to be on sound biological ground when he suggests that the difference between singers and non-singers lies in the brain and not in the larynx.

Having spent twenty-five years in contact with the natives of certain of the countries mentioned by Sir Milsom Rees, may I submit one or two observations that seem to me relevant. Writing of his experience of primitive African singing, Sir Milsom comments on its crudity and ugliness. But whatever its defects, it is admirably adapted to local requirements. To begin with, native custom and psychology offer little encouragement to singing for singing's sake, although the native can be genuinely appreciative of technical skill with either harp, drum, or flute. What is really important is power, and a European can but marvel at the carrying power of the voice in such tribes as the hillmen of Western Uganda. Group-singing among primitive natives means usually one of two things: either an arduous communal job of work or a "binge" with its attendant distractions, generally by the light of the glamorous African moon.

Before the native can grasp what singing means to us Europeans his outlook will have to change quite a lot. Missionaries have for years been teaching the African to sing. Wherever there is a school or a church—and they are everywhere nowadays—you may hear any and every day boys and girls of all ages and men and women making recognizable attempts at European tunes—that is, striving valiantly to imitate, solely by ear, sounds entirely foreign to their normal experience. The tribes along the shores of Lake Victoria do a great deal of singing in the course of their daily routine. Some of their songs are pleasing even to an ear untuned to the restricted range of primitive native music. Canoes frequently have to make long journeys across wide stretches of open lake. Singing helps the paddlers to swing together and to keep going. Without a song the men soon slack off and start talking. Certain individuals are recognized as experts. There may

be several in one crew to share the singing. The soloist shouts a line at the top of his voice and register, and then the crew grunt or yell a monosyllabic chorus, and so on for an hour or more at a stretch.

As to the rôle of the tom-tom in native singing, drums, besides adding to the noise, supply rhythm to regulate both the singer and his audience, be the responses vocal, hand-clapping, dancing, or all three. The travelling professional singer in Uganda—a true minstrel—always accompanies his song on either a small harp or a single-stringed violin. The main appeal of his performance appears to lie in the words, which are often appallingly obscene.

Singing for music's sake, the appreciation of a "good note"—or the production of one for that matter—do not, as far as I know, exist among primitive Africans. Nevertheless, the power to sing, as we Europeans sing, is there, latent in the native larynx. A visit to Namirembe Cathedral in Uganda or to the Trappist establishment at Pine Woods, near Durban, will satisfy the most exacting sceptic. Both these places possess native choirs capable of a finished rendering of the higher forms of choral music. Both will well repay a visit.

Mr. Lambert remarks, "The essence of the problem is whether there is a faculty lying dormant which can readily develop under the influence of a suitable environment." The East African evidence goes, I think, to show that there is. It is the organist, and not the organ, that is at fault.—I am, etc.,

Sussex, Aug. 31. H. LYNDHURST DUKE.

Unusual Cases of Cerebral Haemorrhage

SIR,—The following two cases of fatal cerebral haemorrhage, which occurred in my practice within twenty-four hours, may be of interest to readers of the *Journal* as the circumstances attending both cases were unusual.

CASE I

On August 22, 1937, a widow aged 69 was being driven by her grandson, aged 18, in the front passenger seat of his car from Bournemouth to Winchester, a distance of forty-one and a half miles. About five miles on the south side of the latter town the driver found himself in a long queue of cars all travelling at about fifteen miles an hour. A car towards the head of the queue braked violently, and those following did so in succession. That in which my patient was travelling succeeded in pulling up two feet behind the car in front, but an Austin Seven behind failed to stop in time and hit the back of the car in front of it with considerable force. The widow was thrown forward in her seat and then backwards, and her hat was jerked off on to the floor. She complained of nothing at the time except a pain in her right shoulder; this was inspected by a friend. All the occupants of both cars alighted, inspected the damage to the cars, exchanged names and addresses, and proceeded to Winchester.

Here my patient did a tour of the cathedral, where she complained of a headache. In the meantime the driver reported the accident to the police, who stated that as no one was apparently injured the report to the police had been unnecessary. The party remained about an hour in Winchester and then returned to Bournemouth, stopping on the wayside for a picnic tea, at which the widow took an aspirin tablet and a cup of tea and a sandwich. She arrived home about three hours after the accident, still complaining of nothing but the right shoulder.

Four and a half hours after the accident the patient vomited violently; an hour after this she vomited again, and half an hour later she became unconscious. She remained unconscious for an hour and a half before her relations realized the seriousness of her condition. When I arrived at 10.30 p.m. the patient was breathing stertorously, with extreme cyanosis. The left pupil was pin-point and the right almost so. The head, neck, arms, and upper half of the trunk were sweating profusely, while the lower half of the trunk and the legs and feet were cold. The pupils did not react to light; the knee-jerks were present and the plantar reflexes were flexor. There was incontinence of urine. I helped to remove her on a stretcher to a nursing home almost opposite her own house at midnight, where she died at 2.30 a.m.

The post-mortem examination revealed a heart weighing 14½ ounces (the normal female heart weighs from 10 to 12 ounces). There was advanced arteriosclerosis and marked atheroma of the coronary arteries. The vault of the skull was abnormally thick and heavy, and there was a linear fracture of the sphenoid bone extending from its left outer edge right across the base to the sella turcica. The whole of the surfaces of the left cerebrum and cerebellum were completely covered by blood clot.

No evidence was adduced at the inquest of the deceased having been seen to strike her head, and this point was gone into very thoroughly by the coroner; the patient herself did not complain of a blow on the head, but only of one on the shoulder. In view of the presumed absence of a direct blow on the head I put forward the suggestion, for what it is worth, that a normally thin sphenoid bone might possibly be fractured by a sudden violent jerk of the body when the base of the skull has to carry an abnormal weight of vault bone in a frail woman of 69. I made this suggestion to the coroner, and added that I thought it improbable. The jury brought in a verdict of accidental death and exonerated both drivers from blame.

The extraordinary features of this case to my mind are that the patient could have received such an extensive fracture of the base with such profuse haemorrhage into the vault with no history of a blow on the head; that she could have been driven forty-six and a half miles in a car and walked about for an hour with no complaint of head symptoms, except a headache, which does not seem to have inconvenienced her unduly; and that six hours elapsed before unconsciousness supervened.

CASE II

A garage fitter, aged 35, after helping to lift a heavy motor-coach engine, complained to the manager of "something having given way in his neck." As he seemed ill the manager sent him to the hospital, which is about seven minutes from the garage, in a car. Here he was examined, and nothing unusual was found. He complained to the house-surgeon that all he felt was a slightly stiff neck. He remained at the hospital for a short time and then returned to the garage, where he began work again. Ten minutes after his return he collapsed, and was again put in a car and brought to my house. I was called out to the gate to see him as he was too ill to move. I found him huddled up on the floor of the car with his head on the back seat, very cyanosed, with bounding and rapid pulse, and his breath coming in spasmodic gasps. I advised quick removal to hospital, but he died in the car on the way there. At the post-mortem examination the pathologist found one of several small aneurysms of the circle of Willis which was ruptured.

I also saw a third case of cerebral haemorrhage in the same week in which there were four or five fissured fractures in the central part of the frontal bone just above the frontal sinus. There was considerable haemorrhage into both eye sockets. This patient recovered.

These cases go to prove, I think, that one does not always find the classical signs of a fractured base—namely, haemorrhage from the ears, eyes, nose, or mouth—which one was taught as a student to look for; while in the third case one of these classical signs appeared in the case of a fractured vault.—I am, etc.,

A. E. COLLIE, M.A., L.M.S.S.A.

Bournemouth, Aug. 29.

Tennis Elbow

SIR,—Glad though I am to find Mr. G. K. McKee (*Journal*, August 28, p. 434) and myself in such complete agreement on the pathology of tennis elbow, I think the time is not ripe for changing its name to "traumatic periostitis at the origin of the extensor carpi radialis brevis." At the discussion of this subject in the Section of Orthopaedics at Belfast only two of the nine members who are reported as having spoken were in favour of this conception. Even Mr. G. P. Mills, whose manipulation consists in putting a sudden great strain on the extensor origin at the epicondyle, is so unimpressed by the theory of his very successful method of treatment that he attributes tennis elbow to an affection of the coronary ligament. Until, therefore, the majority of the profession have been converted to the idea of a traumatic periostitis by the, to my mind, conclusive arguments put forward by Mr. McKee in his letter and by myself in the article he refers to, it is premature to label tennis elbow with a name that precludes a difference of opinion on the pathology. For the present it would seem that the non-committal historical term will have to be retained.

In 1873 Runge described, but did not name, a case of inability to write associated with tenderness on the lateral humeral condyle. Morris, in 1882, noted a condition analogous to rider's sprain, which he called "lawn *tennis* arm." An annotation in the *Lancet* in 1885 drew attention to the number of sufferers from "tennis elbow," whose plaintive letters had recently appeared in the lay press. Remak (1894) and Bernhardt (1896) agreed with Runge that it was a periosteal tear due to occupational over-use of the extensor muscles of the forearm. *Couderc* (1896) called it a ruptured epicondylar tendon, Féré (1897) épicondylalgie, and Franke (1910) epicondylitis. *Osgood* (1922) suggested radio-humeral bursitis, thereby incriminating the bursa discovered by Monro in 1788. Schmidt (1921), on the other hand, believed the fault to lie in the subcutaneous epicondylar bursa, first described by Schreger in 1825. On the whole the more recent English writers have called it tennis elbow, while Continental writers have preferred epicondylitis, but all are agreed that tennis is by no means the only cause of the condition, and that the bony epicondyle is seldom, if ever, inflamed. However, until agreement becomes general ,the name "tennis elbow" will have to remain, since it does not imply the acceptance of any particular theory on the pathology. But I hope that this agreement will not be long delayed, so that Mr. McKee's excellent suggestion may become universally acceptable.—I am, etc.,

London, W.1, Sept. 1. J. H. CYRIAX.

A Case of Ether Convulsions

SIR,—Recent interest in this condition has prompted us to submit an account of a typical case which occurred while under our care.

The patient is a well-built boy, aged 16, who was admitted to hospital twenty-four hours after the onset of an attack of acute appendicitis. He was obviously toxic, with a temperature of 101° and a pulse rate of 90. Since operation his family history has been carefully investigated, and there is no hereditary disturbance or epileptic tendency.

The operation was performed on a very hot and thundery summer afternoon. Induction was started at 4 p.m., three-quarters of an hour after the hypodermic injection of omnopon 1/6 grain and scopolamine 1/300 grain, with an ether-chloroform mixture in the proportion of three to one. Induction was smooth and lasted ten minutes. It is interesting to note, first, that no atropine was given, and, secondly, that the ether had been in the drop-bottle since an emergency operation the previous night and so had presumably been exposed to more actinic light than usual, especially as the bottle was not amber-coloured. The operation had lasted half an hour when the anaesthesia was deepened preparatory to sewing the peritoneum. Throughout this time the patient had been breathing well and was a good colour, nothing abnormal being noted except that he was sweating profusely, which was in some measure due to the temperature of the day.

The first sign was a stiffening of the jaw, followed by twitching of the eyelids, which spread to the limbs and gave way to clonic movements of the whole body. The breathing, colour, and pulse were still good. The patient was then deeply anaesthetized with chloroform, and evipan was prepared but not used; it would have been quite impossible to give an intravenous injection in the presence of such violent convulsions. The convulsions became much less violent as soon as the chloroform was given, but were as frequent. The operation was hastily completed, and as the skin was being stitched the patient went into tonic spasm, including spasm of the larynx, becoming very cyanosed, with a marked change in the pulse, which became thin, thready, and rapid. Oxygen was administered and the spasm slowly passed off, the pulse improved, and the convulsions ceased. Convalescence was uneventful, although the temperature was raised for the first few days.

We have been able to trace thirty-two references to this condition in the literature, all published since 1927. Most writers are agreed that the condition carries a mortality of at least 50 per cent., and tends to occur in hot weather in young people who are suffering from an acute illness—often appendicitis. Many suggestions have been put forward to account for the condition, none of which are entirely satisfactory. Wilson, who originally described the condition, decided after exhaustive inquiries that it was due to impurities in the ether—acetaldehyde and "peroxides," which develop if the ether is exposed for any length of time to the action of light, especially actinic. Our case would appear to support this. Other suggestions have been that there is some personal or familial idiosyncrasy, or that the condition is due to the administration of atropine, the dose having been repeated in some cases following an unforeseen delay in starting the operation. In the case we have described no atropine was given at all.

Finally, it is interesting to note that the condition of the patient improved as soon as chloroform was administered. This is contrary to the general consensus of opinion, which advises the intravenous injection of evipan. Such an injection would have been technically impossible in the circumstances. There was no tendency to relapse or to cardiac failure after the cessation of the convulsions, as has been recorded after the use of evipan, following which death has been reported several hours after an apparent recovery.

We wish to record our thanks to Mr. E. S. Lee for his kind permission to publish this case.—We are, etc.,

D. N. MATTHEWS.
London, W.1, Aug. 29. EDWARD GEAL.

Anti-spasmodic Drugs in Labour

SIR,—The reference in the *Journal* of July 10 (p. 58) to an article by Drenkhahn in *Med. Welt* of March 20, 1937 (p. 394), states that the author arrives at his conclusions "on purely theoretical grounds." In his original paper Drenkhahn draws certain theoretical deductions, which, however, he bases upon the pharmacological experiments of C. v. Schindler and on the clinical observations of L. Alexander. The fact that atropine causes a relaxation

of the sphincter of the portio vaginalis of the uterus, while it has no or only a slight stimulating effect on the muscles of the body of the uterus, was already well known to a number of authors, who have proved this statement in several hundred clinical cases and have contributed a certain amount of work on the subject of the pharmacological action of the drug in obstetrics.

May I record the experiences I have had in more than forty obstetrical cases, using syntropan (Roche) instead of atropine. Syntropan is a synthetic ester of tropic acid, whereas atropine is a tropic ester of tropine. Syntropan has only a very slight action on the heart, circulation, secretory glands, pupil, and accommodation. It was therefore found to be harmless and well tolerated, no undesirable after- or by-effects (palpitation, rashes, sight trouble, dryness of the mouth) being observed.

The procedure in every case was to administer syntropan rectally when the pains came on regularly, and at intervals of not more than ten to twelve minutes. After one to one and a half hours another suppository of syntropan was introduced. The effect became apparent after about fifteen minutes, when the pain was alleviated, while the force of the uterus contractions in no way decreased. The patients soon felt much more comfortable. The dilatation of the cervix was hastened and no narcotics were used except, of course, a little ether at the end of the second stage. The first stage was shortened by two to four hours, as has also been recorded by several other authors, and the time of the confinement very much reduced. The patients in most cases were normal anatomically, but they included a preponderance of elderly primiparae, and in quite a number the foetal head was slightly overlapping. In no case was there a secondary uterine inertia, and, thanks to the relaxation of the painful spasms, the women developed sufficient reserve power and steadiness, so that the ultimate result was satisfactory for both mother and child without the necessity of operative intervention.

I made the same observations as Alexander, Kreis, Gammstadter, and several French authors, and I wish to confirm the conclusions of Drenkhahn—namely, that the employment of spasmolytics in obstetrics is useful, and that atropine has certainly a good influence in labour, even in normal cases. (Syntropan, having a similar action on the uterus, but being devoid of by-effects, is better tolerated and more to be recommended.) Syntropan brings about a marked relaxation of the sphincter of the cervix uteri and helps to increase the polarity of the womb. Atropine and syntropan are both parasympathetic depressants. "The uterus receives both motor and inhibitory fibres from the sympathetic. There is no supply by the sacral autonomic (Wright)."

The question as to how the polarity of the womb and the action of atropine and syntropan on the cervix and uterus body is brought about still remains open.—I am, etc.,

London, N.W.6, Aug. 24. F. E. HIRSCH.

N. J. Rousset (*J. Méd. Lyon*, May 23, 1937, p. 283) draws attention to the dangers of manicure. The main risk is an infection of the perionychial tissues caused by repeated slight injuries to the cuticle while it is being pushed back. These result in a staphylococcal infection of the nail matrix and of the surrounding tissues. The author distinguishes three forms of infection: (1) a purely inflammatory form, (2) a suppurating form, and (3) a mixed form. The nail itself is usually not affected, but in some cases transverse grooves may appear, and may be so deep as to cause complete separation between the different parts of the nail. The grooves then fill with a fleshy granulation not unlike botryomycoma. The differential diagnosis is usually easy, but certain forms of syphilitic, eczematous, inflammatory, and chemical dactylitis may closely simulate the affection described.

Obituary

GEORGE EDWARD LOVEDAY, M.A., M.B.

Director of the Clinical Laboratory, Royal Infirmary, Manchester; Reader in Clinical Pathology, Manchester University

We announce with regret the death of Dr. G. E. Loveday, which took place in tragic circumstances at Sheringham. He had apparently been in poor health for some months, although he had said nothing about it to his colleagues.

George Edward Loveday was born in 1876, and was educated at Giggleswick and Caius College, Cambridge, where he took his B.A. in 1898 and spent an extra year studying pathology in its general and clinical aspects. He completed his medical course at St. Bartholomew's Hospital, and qualified M.R.C.S., L.R.C.P. in 1902; in 1903 he proceeded to the M.B. and M.A. of Cambridge University. Hospital appointments followed at Addenbrooke's and the Salop Infirmary, and in 1905 he joined the staff of Sir Almroth Wright's laboratory at St. Mary's Hospital, London. Here he studied opsonins and therapeutic inoculation, and in 1906 was appointed to give instruction in Wright's methods for three months at the Manchester Royal Infirmary. Some time previously Loveday's sister had married Sir Arthur Schuster, the professor of physics at Manchester University, and it was probably this connexion which attracted him to the city in which he was destined to spend the rest of his life. Loveday's work so greatly impressed all with whom he came into contact that he was appointed director of the clinical laboratory within a year of his arrival, a position he still held with great distinction at the time of his death. It was an ideal post, for it gave him plenty of time and facilities for outside consultant work, and his services were freely used. At the time of his appointment the laboratory staff consisted of himself and a boy, but under his directorship it gradually grew to its present personnel of sixteen, and he became responsible for the administrative charge of a vast amount of work covering the whole scope of clinical and pathological practice of a large teaching hospital. In addition he held the readership in clinical pathology at the University, and taught clinical pathological methods to generations of students. His laboratories, too, had to be extended, and the designs and plans were largely his.

Throughout his life Loveday remained a devoted disciple of Wright and Wright's methods. His main interests were in the serological and bacteriological side of clinical pathology, but he was not greatly interested in biochemistry. He was expert in vaccine therapy, and devoted a large amount of his time to this particular study. He excelled in the application of serological and vaccine therapy as applied to each particular case, and as his clinical judgement and balance were good his opinion in cases of infection was extremely valuable. Loveday was a great believer in small doses, and his experience convinced him that the population of Manchester as a whole could not stand the doses usually recommended and employed in London. Careful records of the dates, dosage, and effects produced were kept, and these lay in neat piles around him on his desk. Woe betide anyone who disarranged them! The cares of a very busy practice unfortunately prevented the publication of much valuable statistical material. His work was characterized by its accuracy, neatness, and thoroughness. It was personal and painstaking to the last degree, and he never delegated important work to others. His technical skill was extraordinary, and nowhere was it

more evident than in the neatness of his blood transfusion work. He was something of a martinet, and would brook no interference in his laboratory from anybody. Freely consulted by everyone on the hospital staff, he liked nothing better than to discuss a slide or the treatment of a case with one of his colleagues, but should the latter betray the least ignorance on a pathological matter the scorn in Loveday's voice was unmistakable. It would quickly pass, however, and the visitor would leave the laboratory with much valuable information.

Loveday was a man of rare character and was respected by all, especially by the numerous people who learned their clinical pathology by working in his department and were able to recognize the charm of a character that was not always apparent on casual acquaintance. On the outbreak of the war he was appointed pathologist to the 57th General Hospital, at first in Manchester, but later, in 1917, in France. It was on the journey over that he first met the lady who became his wife. He had three children, who were unfortunately all delicate. In May this year his eldest son went as a King's Scout to the Coronation. Almost at once on his return to school he developed meningitis and died. It was a terrible blow to Loveday, and must have been the beginning of the end.

Professor Albert Ramsbottom writes: Dr. Loveday's tragic death has left a gap in our medical school which it will be difficult to fill, and has deprived many of us of a very staunch friend. The position he held at the Manchester Royal Infirmary was, I think, unique, so varied were his duties, and upon every branch he brought to bear a master mind. It is difficult to imagine a more efficient director of a clinical laboratory, for he combined a mastership of technique with an astonishing capacity for work, which he was ever ready to place at your disposal; his aid was eagerly sought by all who realized the value of his help in solving clinical problems. He had a shy and retiring temperament, which was apt to be mistaken for unfriendliness, but closer contact soon revealed his true kindly nature. In his early years in Manchester I am sure that his health was maintained by occasional fishing and skating holidays, to both of which pastimes he was devoted. The ever-increasing demands, however, of medicine upon the ancillary services made a greater call on his time, and, despite repeated warnings from his friends, led him gradually to restrict his leisure; as time passed it was noticeable to his colleagues that the ever-increasing strain of work was taking its toll of a constitution at no time robust. Coupled with this came the tragedy in May of the death of his elder son—a blow which plunged him into a grief from which he never recovered and ultimately led to his breakdown in health. He leaves a widow, a son, and a daughter, to whom our whole-hearted sympathy goes out.

CHARLES CARTER BRAINE, F.R.C.S.

We regret to announce that Mr. Charles Carter Braine, the distinguished anaesthetist, died on September 1, aged 78, at Grove End Gardens, N.W. He had been in ill-health for the past year or two, and had recently undergone an operation. He was educated at Charing Cross Hospital, taking the M.R.C.S., L.R.C.P. in 1887, and the F.R.C.S.Eng. in 1890. He filled for many years the position of anaesthetist at Charing Cross Hospital, and also at the Royal Dental and St. Peter's Hospital for Stone, following in all these appointments his well-known stepfather, F. Woodhouse Braine, F.R.C.S. He was during the great war anaesthetist to the King George Hospital, London.

Carter Braine's contributions to literature included "Artificial Respiration and Resuscitation," *Quain's Dictionary of Medicine*, third edition; "A Safety Junker Inhaler," *British Medical Journal*, 1892; "Position in Kidney Operations," ibid., 1900; "Experience of Anaesthetics in 200 Consecutive Cases of Prostatectomy," *Trans. Soc. Anaes.*, 1906. He was joint author with Arthur Underwood of *Notes on Anaesthetics in Dental Surgery*, second edition.

He was a man of great experience, and could be relied upon to deal with any emergency, imperturbability being his chief characteristic. Carter was a modest man and an agreeable colleague, and it was a lasting pleasure to call him "friend" and to know him intimately as "Chas." As an instance of his generous nature it may be mentioned that, hearing that the son of the writer of this note had suffered from whooping-cough, Carter insisted upon giving up his house at Bognor for the boy's benefit. He devoted much of his time to Freemasonry, and held many of the highest ranks in the craft—Grand Officer, Harvey Chapter, and member of La Chère Reine, Cavendish, and other lodges. Mrs. Carter Braine for more than forty years was a most devoted helpmate. She and the family of two sons survive. The elder, John Francis Carter Braine, M.D., F.R.C.S., is assistant surgeon to the actinotherapeutic department of Guy's Hospital.

DAVID CONNOR KIRKHOPE, M.D., D.P.H.,

Formerly Medical Officer of Health for Tottenham

The death occurred at a London nursing home on August 25 of Dr. D. C. Kirkhope, who, at the age of 65, had only recently retired from the post of medical officer of health for the borough of Tottenham.

Dr. Kirkhope received his early medical training at Queen's College, Belfast, and Glasgow University, and qualified M.B., Ch.M.Glas. in 1895, proceeding to the M.D. degree in 1906. After obtaining the D.P.H.Cambridge he was called to the Bar of Gray's Inn and the Middle Temple. In 1909 he was appointed assistant medical officer of health for the borough of Leyton, and in 1913 succeeded the late Dr. Butler-Hogan as medical officer of health for Tottenham, which position he held with marked distinction for twenty-four years until his retirement in May of this year.

During more than a quarter of a century of public health service Dr. Kirkhope took an active part in the growth of preventive medicine not only in Tottenham itself but in the service as a whole. As a member of the British Medical Association for more than twenty-five years Dr. Kirkhope was chairman of the North Middlesex Division in 1927–8, honorary secretary to the Section of Preventive Medicine at the Annual Meeting of the Association at Cardiff in 1928, and acted as representative in the Representative Body on seven occasions between 1925 and 1932. Dr. Kirkhope was a man of high principle and zeal, and at his retirement his long record of work in Tottenham brought forward from members of the town council and representative bodies and from colleagues many expressions of appreciation indicating his undoubted popularity and the esteem and respect in which he was held. He was looking forward to a world tour in September, during which he had hoped to visit two of his sons in Canada, and this must be an added grief to his surviving widow, two daughters, and three sons.

A colleague writes: The position of medical officer of health for a large borough such as Tottenham is a responsible one and needs moral courage and administrative ability in the man who occupies it. Dr. Kirkhope

possessed both these qualities. During his long term of office there was great development in the social services of the borough. The public health department, when his term of office expired in April last, embraced clinics for minor ailments and for the eye, ear, teeth, orthopaedics, and anti-diphtheria inoculation. The maternity and child welfare work was very well organized, extensive, and successful. Dr. Kirkhope was keen on his work and a friend to the members of his staff, medical and clerical. Because he was capable and straight he won their confidence and inspired their loyalty. He could make a good speech, and he wrote clear and good English, as can be seen from his annual reports. He was also a skilled musician. He will be missed especially by the older members of the community. Those of us who were regularly in touch with him will look back with gratitude to him for good advice, ready help, and friendliness.

MELVILLE MORTIMER ADAMS, M.B., B.S.,
Pretoria

The death on August 6 of Dr. M. M. Adams came as a great shock to his many friends. Dr. Adams was a Transvaaler by birth, being born in Lydenburg on November 26, 1884. He was at school in Pretoria, subsequently joining the King Edward Grammar School, Chelmsford, where he remained until he matriculated at London University. His medical studies were at Guy's Hospital, where he remained until he qualified with the English Conjoint diplomas M.R.C.S., L.R.C.P. In 1912, having taken the degrees of M.B., B.S.Lond., he returned to Pretoria and became house-surgeon to the Pretoria Hospital. At the outbreak of the great war he was with the South African Forces in South-West Africa. On the completion of that campaign in 1915 he returned to Pretoria for a short time, but in the same year he went to England and joined the R.A.M.C. as a lieutenant. He was sent to Gallipoli, and later was attached to Lovat's Scouts in Egypt. At the end of 1916 he was attached to the 2nd South African Infantry with the rank of captain. He was in France in June, 1918, and was present at the actions at Beaurevoir and Le Cateau. He was demobilized in Capetown in October, 1919, and returning to Pretoria went into general practice, which he continued to his death.

Dr. Adams was for many years on the honorary visiting staff of the Pretoria General Hospital and was honorary lecturer to the nurses there until his death. He was at one time president, and previously secretary, of the Pretoria Division of the S.A.M.A. (B.M.A.). He was a prominent Freemason and a Past Master of the Transvaal Lodge E.C. He was an enthusiastic golfer, and belonged to nearly all the golf clubs in Pretoria. His funeral was attended by a large contingent of the hospital nurses in uniform, by his colleagues of the visiting staff, and by representatives of all sections of the community.

H. P. V.

We announce with regret the death, at the age of 40, of Dr. William Melrose Cumming. Dr. Cumming took the M.B., Ch.B. at St. Andrews in 1922, and since his interests were even at that time in public health, and particularly in the treatment of tuberculosis, he went on to take the D.P.H. in 1925, the Ph.D. in 1926, and finally the M.D. with a gold medal in 1927. He was for a short time assistant to the Professor of Bacteriology at University College, Dundee, and later became assistant medical superintendent of the Fife and Kinross Joint Sanatorium. After that he was for a short time senior assistant medical officer to the Grove Park Hospital, Lee. He was appointed medical superintendent of the Grassington Sanatorium in May, 1926, and was succeeded by Dr. R. S. Donaldson in June, 1935. His publications included an article on the serology of the bovine type of tubercle bacillus, published in 1925, the results of some work done two years later on the pseudo-haemolytic streptococci isolated from the sputum in pulmonary tuberculosis, and more recently he contributed to a symposium on the infectivity of tuberculosis, which appeared in the *British Journal of Tuberculosis* in 1932.

The death of Dr. ANTOINE BÉCLÈRE robs France of one of her most gifted and versatile radiologists. As a young man he was already beginning to make his mark in bacteriology when Röntgen's discovery of the *x* rays induced him to throw all his energies into this field in which he played so distinguished a part that he became president of the Société de Radiologie de France. He was also at one time president of the French Academy of Medicine. Only a few years before his death Béclère took up with much enthusiasm the work of his younger days and published bacteriological studies, several of which were concerned with influenza.

The Services

DIRECTOR-GENERAL, A.M.S.

The War Office announces that Major-General W. P. MacArthur, D.S.O., O.B.E., M.D., D.Sc., F.R.C.P., F.R.C.P.I., Honorary Physician to the King, has been selected to succeed Lieutenant-General Sir James A. Hartigan, K.C.B., C.M.G., D.S.O., M.B., D.Ch., Honorary Physician to the King, as Director-General of Army Medical Services when the latter completes his tenure of office on March 1, 1938.

General MacArthur graduated in the Royal University of Ireland from Queen's College, Belfast, in 1908 and was commissioned in the R.A.M.C. in 1909. For his services in the great war he was awarded the D.S.O. in 1916 and the O.B.E. in 1919. Since then he has held the appointments of Professor of Tropical Medicine at the Royal Army Medical College, Consulting Physician to the Army, Deputy Director-General at the War Office, and Commandant and Director of Studies at the Royal Army Medical College, which appointment he now holds. He was appointed Honorary Physician to the King in 1930. He was elected Fellow of the Royal College of Physicians of Ireland in 1913 and of the London College this year. He is an honorary D.Sc. of Queen's University, Belfast. He was Thomas Vicary Lecturer before the Royal College of Surgeons of England in 1931, and Chadwick Medallist in 1935.

DEPUTY DIRECTOR-GENERAL, I.M.S.

Lieut.-Colonel E. G. Kennedy has been appointed Deputy Director-General, Indian Medical Service.

ARMY DENTAL SERVICES

The War Office announces that Colonel D. Clewer, Inspector of Army Dental Services in India, has been selected for appointment as Director, Army Dental Services, The War Office, in succession to the late Colonel J. V. M. Byrne.

DEATHS IN THE SERVICES

Colonel THOMAS EVELYN FIELDING, D.S.O., late R.A.M.C., died at Hindhead on August 9, aged 65. He was born on July 27, 1872, and educated at Trinity College, Dublin, where he graduated B.A., M.B., B.Ch., and B.A.O. in 1897. Entering the R.A.M.C. as lieutenant on April 25, 1900, he became lieutenant-colonel on December 26, 1917, and retired as colonel in 1930. He served in the South African War of 1900-2, when he took part in operations in the Transvaal, the Orange River Colony, and Cape Colony, served in the defence of Fort Itaka, on the Zululand border of Natal, in October, 1901, was mentioned in dispatches in the *London Gazette* of September 10, 1901, and January 17, 1902, and received the Queen's medal with three clasps and the King's medal with two clasps. In the war of 1914-18 he served as A.D.M.S. of the 28th

Division in the Salonika Force in the army of the Black Sea and in Constantinople; was mentioned in dispatches in the *London Gazette* of October 19, 1914, and June 25, 1915, and received the D.S.O.

Surgeon Captain WILLIAM BASTIAN, R.N. (retired), died in University College Hospital, after five weeks' illness, on August 2, aged 62. He was the third son of the late Dr. H. Charlton Bastian, F.R.S., and was educated at University College School, Hampstead, and at University College Hospital, and qualified M.R.C.S., L.R.C.P. in 1900. After qualifying he joined the Navy, became surgeon commander on August 2, 1914, and retired as surgeon captain on June 8, 1925. Captain Bastian was particularly interested in the problem of prevention of venereal disease in the Navy. He served during the war of 1914-18. He had been a member of the British Medical Association since 1907, and served on the Naval Medical Service Subcommittee in 1919-20. Since his retirement he had resided at Loughborough. He leaves a widow, one son, and two daughters.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

Titles of medical degrees were conferred by diploma on the following members of Girton and Newnham Colleges during July:

M.B., B.CHIR.—M. B. Billington, G. M. S. Caldwell.
M.B.—E. M. Wright.

UNIVERSITY OF LONDON

A course of lectures and clinical instruction for medical practitioners on problems connected with retarded and difficult children has been arranged by the University Extension and Tutorial Classes Council, in co-operation with the Central Association for Mental Welfare, and will be held from Monday, November 1, to Saturday, November 6. The course is open to those medical practitioners who have already attended the course on mental deficiency and allied conditions, or who have specialized experience approved for the purpose of the course. The lectures will be delivered at the University of London, Senate House, Montague Place, W.C., unless otherwise stated on the students' time-tables, and will be given from 10 a.m. to 12.30 p.m. each day. Detailed time-tables will be sent by October 26 to each person proposing to attend the course, and in order that the practical work may be satisfactorily arranged it is important that forms of application should be filled in and returned not later than October 9. The University will grant certificates of attendance to those who attend regularly taking both theoretical and practical work. The registration fee is 10s. 6d. and the fee for the course £3 3s. All communications should be addressed to Miss Evelyn Fox, c/o University Extension Department, University of London, W.C.1.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—J. B. Alexander, F. Bastawros, J. D. Buckner, I. W. Claiman, T. Gadian, J. B. Good, W. A. Groom, E. de C. Kite, B. W. S. Spurgin, A. T. Rogers, W. E. Young.

MEDICINE.—A. A. Beazeley, T. Gadian, O. D. Gilmore, H. W. John, K. G. Pascall, T. van der Walt.

FORENSIC MEDICINE.— A. A. Beazeley, T. Gadian, O. D. Gilmore, B. T. Jones, K. G. Pascall, T. van der Walt.

MIDWIFERY.—H. P. Anderson, A. Backman, J. A. W. Berryman, H. B. O. Cardew, D. H. Fowler, M. W. Hemans, D. C. Light, G. MacBain, T. van der Walt.

The diploma of the Society has been granted to A. A. Beazeley, I. W. Claiman, O. D. Gilmore, H. W. John, E. de C. Kite, K. G. Pascall, and T. van der Walt.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Royal Faculty of Physicians and Surgeons of Glasgow, held on September 6, with Professor Archibald Young, the president, in the chair, the following were admitted Fellows of Faculty: Paresh Nath Baruah, M.B., Alfred Finlay Brown, M.B., Ch.B., Enrique Eduerdo Krapf, M.D., Edwin Stewart Lawrie, M.B., Ch.B.

Medical News

The eleventh Congress of the Société Internationale de Chirurgie will be held in Vienna from September 19 to September 22, 1938, under the presidency of Professor Rudolph Matas of New Orleans.

All qualified medical practitioners interested in plastic surgery are invited to attend the second European Congress of Structive (Plastic) Surgery, which is to be held at the Royal Society of Medicine, London, on October 6 and 7. The office of the congress is at 149, Harley Street, W.1, to which acceptances of the invitation, accompanied by the congress subscription of £1 and requests to join in the discussions, should be forwarded not later than September 25.

The first world congress on the human voice will be held during the Paris Exhibition from September 19 to 28 in the Health of Jena and the Marcelin Berthelot centre. The programme will consist of two parts—namely, the production, accomplishments, and education of the direct voice, and the microphone voice.

An International Congress of Anaesthetics will be held at Chicago from October 25 to 28, and will be followed by a supplementary congress at the University of Wisconsin. Further information can be obtained from the general secretary, Dr. D. F. McMechan, 318, Hotel Westlake, Rocky River, Ohio.

The annual dinner of the old students of the Medical College of St. Bartholomew's Hospital will be held on Friday, October 1, in the College Hall, Charterhouse Square, at 7.30 p.m., with Dr. C. M. Hinds Howell in the chair.

The annual dinner of the Middlesex Hospital Medical School will be held at the Savoy Hotel on Friday, October 1, at 7.30 p.m.

The annual prize distribution of St. George's Hospital Medical School will be held in the board room of the hospital on Saturday, October 2, at 3 p.m., when Dr. W. R. Halliday, principal of King's College, London, will deliver the inaugural address.

The William Gibson Research Scholarship for Medical Women of the Royal Society of Medicine has been awarded to Dr. Nancy E. G. Richardson of London. Dr. Richardson proposes to carry out research on carbohydrate metabolism in pregnant and lactating women in relation to the principles secreted by the anterior lobe of the pituitary.

The *Proceedings* of the Staff Meetings of the Mayo Clinic of July 28 contains an announcement that the residence of Dr. and Mrs. W. J. Mayo is to be converted into an establishment to assist the educational aims of the Mayo Foundation and of the University of Minnesota. The residence and the east half of the block on which it stands will be transferred by deed for the Foundation to a board of trustees, and Dr. Mayo intends to endow the property sufficiently to prevent taxes and general maintenance becoming a burden on the Foundation.

A serious outbreak of infantile paralysis in Melbourne (Australia) is reported in the *Times* of August 30. Up to August 29 the total number of cases was 185, with thirteen deaths, including four adults. Over 100 schools have been closed, and special education broadcasts have been arranged for children kept at home by their parents. Country areas are demanding that children arriving from Melbourne shall be isolated, and Tasmania is making a similar stipulation. A police force has been sent from Sydney to patrol the Victorian border to prevent the entry into New South Wales of children without medical certificates of twenty-one days' isolation.

The issue of the *Journal de Médecine de Lyon* for August 20 is devoted to diseases of the alimentary system, that of the *Journal de Médecine de Paris* of August 19–26 to school medicine and physical education, that of *Bulletin Médical* of August 28 to biology, and that of *Paris Médical* for September 4 to ophthalmology, oto-rhino-laryngology, and stomatology.

The *Practitioner* publishes this month an extra number (price 1s.) to commemorate its move to a new home in the medical quarter of London at 5, Bentinck Street, W.1. This special issue is admirably produced. The Editor, Sir Humphry Rolleston, contributes a short foreword; Dr. C. H. Reilly, emeritus professor of architecture in the University of Liverpool, discusses the design of the new building; and Mr. Walter Goodesmith describes the installation, equipment, fitments, and furniture.

It was announced in the *Journal* of July 8, 1933 (p. 71) that a supply of serum obtained from patients convalescent from acute poliomyelitis would be issued by the Public Health Department of the London County Council. We are now informed by Dr. J. A. H. Brincker that serum from convalescent poliomyelitis cases is no longer available for issue from the Western Hospital.

On September 6 Lady Pearson, widow of Sir Arthur Pearson, the founder of St. Dunstan's, laid the foundation-stone of the new St. Dunstan's Home which is being erected at a cost of more than £100,000 on the cliffs at Ovingdean, near Brighton. Sir Ian Fraser, chairman of St. Dunstan's, presided at the ceremony, and after speeches of welcome by the Mayors of Brighton and Hove the scheme was explained by Colonel E. M. Ball, chairman of the building committee.

The postgraduate course on the modern treatment of fractures which has just been concluded at the Bristol Royal Infirmary was so successful that it is proposed to hold a similar course, lasting one week, in January, 1938.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Attiology Westcent, London.*
SECRETARY, *Medisecra Westcent, London.*

The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone 62550 Dublin).

QUERIES AND ANSWERS

Treatment of Mycosis Fungoides

"M. C." asks for advice on the treatment of a patient suffering from mycosis fungoides which has progressed rapidly in spite of treatment by *x* rays and malarial therapy.

Buccal and Lingual Ulcers

"PUZZLED" writes: A married woman, aged 27, who recently consulted me, states that she has had recurrent painful ulcers of the tongue and buccal mucous membrane since an attack of influenza five and a half years ago. I find that the Wassermann reaction is negative, scrapings of the ulcers show no evidence of a fungus, and examination of the blood excludes the anaemias. *X*-ray examination of the alimentary tract done some months ago was also said to be negative. I should be grateful for any suggestions as to the causation and treatment of this condition.

Splitting Finger-nails

Dr. R. A. GARDNER, in reply to Dr. Stiven (*Journal*, August 7, p. 306), writes: For the splitting of finger-nails, probably due to over-exposure to *x* rays fifteen years ago, some authorities recommended "durafix." If this is not obtainable in Cairo, ciné-film cement—celluloid dissolved in amyl acetate—would probably be efficient in filling the cracks and thus preventing their irritation. Although many of the essential facts regarding protection from radiation were known at the beginning of this century, the first safety recommendations were issued in England in the early twenties only. Even so late as the present year they had not been adopted fully by the principal hospital in Cairo. In this regard there is much to be said for the action of the Italian Government in requiring the licensing of *x*-ray installations. *X*-ray "screen" examination should be a harmless procedure, but unfortunately it gives no warning of the severe injury it is capable of producing under certain conditions to both doctor and patient.

LETTERS, NOTES, ETC.

Vagitus Uterinus

Dr. E. A. DOUGLAS writes from Lucknow: Vagitus uterinus appears to be a sufficiently exceptional condition to make it worth while reporting a case we had in the Kinnaird Hospital on February 17, 1937. The patient, a Mohammedan primipara of 32 years, married eighteen years, who had been attending the ante-natal clinic since her third month of pregnancy, was admitted to hospital on February 4, 1937, at almost full term. The presentation was transverse, the foetal heart good. The pelvic measurements were apparently normal, but there was cervical erosion and a vaginal discharge. Attempts to correct the position of the child failed. On February 7 the presentation was breech, but later reverted to transverse. On February 17, early in the morning, the patient passed a quantity of liquor amnii, but there was no pain until 9 a.m., when a vaginal examination was made. The os was two fingers dilated, the membranes were ruptured, and an elbow was presenting. It was not then possible to perform version. I first saw the patient at 12.30 p.m. the same day. The pains were strong; head was still lying in a transverse position, though not actually in the iliac fossa; the foetal heart was good. At 1 p.m. the patient was anaesthetized, and I found the os almost fully dilated, with both hand and foot presenting. Version was easy. The presenting foot, which proved to be the right, was brought down. I was about to put my hand into the vagina to bring down the second foot when the baby drew up its foot, and we heard a muffled sound coming from the abdomen. Five of us who were present in the labour ward definitely heard the cry. I brought down the second leg, and again the baby cried. There was no delay in delivering the shoulders, but the head stuck, and I quickly delivered with forceps on the after-coming head. The baby, a female weighing 5 lb., was born in a state of blue asphyxia, but very soon recovered.

Parathyroid Extract and Enlarged Prostate

Dr. F. O. TAYLOR (Coldingham, Berwickshire) writes: Mr. A. P. Bertwistle describes a dramatic "cure" "under the exhibition of parathyroid extract grain 1/2." If I had known of this treatment last year, and found it so successful, I should have been able to ease much suffering. As I should like to know more about this treatment, perhaps Mr. Bertwistle will state the manner in which he "exhibited" the 1/2 grain of parathyroid extract. These notes would be of much greater use if just a little more detail were given us to bite upon.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

188 Pyrexia in Myeloid Leukaemia

According to J. OLMER and J. BOUDOURESQUES (*Ann. de Méd.*, April, 1937, p. 265), although uncommon, cases have been recorded which bridge the gap between myeloid leukaemia and acute lymphatic leukaemia. They prove that these conditions, although different in their course and symptoms, are expressions of the same pathological process. A clear example of a transitional condition is acute myeloblastic leukaemia, in which an acute malady, usually with splenomegaly but without buccopharyngeal symptoms or general haemorrhages, coexists with a leukaemia in which the blood contains great abundance of young cells. These, however, are further differentiated than the undifferentiated cells of acute leukaemia. Seven such cases are summarized. The writers draw special attention to pyrexia in myeloid leukaemia. It is often stated that it does not occur, but it may be noted early in the disease, and there may be repeated acute febrile exacerbations, chronic pyrexia, or terminal pyrexia. Acute transitory pyrexia is less common than the preterminal; both are accompanied sometimes by the appearance in the blood of myeloblasts and even more immature cell-forms, and by a tendency to haemorrhage. In the former considerable improvement usually occurs after radiotherapy. Eight cases are summarized which show, however, that febrile attacks occur in some cases of myeloid leukaemia without any important myeloblastic reaction in the blood, spleen, or marrow. In one of the writers' cases pyrexia, thought to be due to tuberculosis, preceded the discovery of splenomegaly by eight months. The cause of the fever is obscure, since blood cultures have nearly always been negative; the tuberculous infection which coexists, according to some authors in two-thirds of cases, is probably secondary, and massive blood-cell destruction is not always present. In general, febrile cases of myeloid leukaemia, while preserving a fairly typical blood picture, approximate clinically to cases of acute leukaemia.

189 Fatal Asthma

R. W. LAMSON and E. M. BUTT (*J. Amer. med. Ass.*, May 29, 1937, p. 1843) present a clinical and pathological survey of 187 cases of "fatal asthma." Their findings are noticeably similar to those of an investigation carried out in 1932 on asthma and allied conditions for the Association of Life Insurance Medical Directors. An analysis of the case reports, on 98 of which there was a post-mortem examination, emphasizes an undue predominance of heart and lung disease. Approximately 40 per cent. did not survive four years after showing clinical symptoms, the percentage being even less favourable in females, and the highest mortality occurring at 45 to 55; this result disagrees with the clinical experience of true bronchial asthma. A closer analysis of the unpublished cases on which post-mortem examinations were performed shows that only 26 per cent. could be classified as cases of true bronchial asthma, and that heart and lung disease did not terminate this syndrome. It is difficult to distinguish clinically true bronchial asthma from the other classified types, but in true asthma pathological and microscopical examination of the lungs will show hyperplasia of the bronchiole epithelial lining with mucinous exudates, leucocytic infiltration, and eosinophilia. The writers stress the need for greater caution in employing the term asthma as including such cases as cardiac dyspnoea, tracheal obstruction, and pneumoconiosis, as this reflects unfavourably and inaccurately on the mortality statistics of true clinically recognizable asthma.

190 Tumour of the Right Auricle

A. CLERC *et al.* (*Arch. Mal. Cœur*, June, 1937, p. 361) describe the case of a woman aged 34 who was two months pregnant, and on whom a therapeutic abortion was performed on account of extreme cyanosis and a state of impending asphyxia. The cardiac rhythm was regular and there was no murmur, although there was a vague history of "heart trouble" of considerable duration, and the fingers were clubbed. Following the abortion she had several convulsive attacks, and developed a left hemiplegia, from which she died two weeks later. Necropsy disclosed general congestion of all organs and multiple cerebral haemorrhages. In the right auricle there was a myxomatous "tumour," ovoid in shape and measuring 4 cm. by 3 cm. It projected through the tricuspid valve towards the right ventricle. The authors state that such "tumours" are difficult to diagnose before necropsy, as there are no pathognomonic signs or symptoms. They also discuss the question whether such "tumours" are real neoplasms which have become secondarily vascularized, or whether they are thrombi which have undergone myxomatous degeneration.

191 Benign Bronchial Bleeding

F. FLEISCHNER (*Wien. klin. Wschr.*, June 18, 1937, p. 927) points out that haemoptysis occurs most commonly in pulmonary tuberculosis and bronchial carcinoma and less often in other pulmonary and bronchial conditions, or from laryngeal, pharyngeal, and oral lesions. The author has met with numerous cases of benign haemoptyses of bronchial origin in the past few years. Bleeding occurred while the patient was in good health or after a slight catarrh, and usually while at rest. The blood was bright red, fluid, and not mixed with sputum, and the haemorrhage recurred from time to time. No fever was present either before, during, or after the haemoptysis; and no tubercle bacilli were found in the sputum. Physical examination of the lung was negative, and no lesion could be demonstrated by *x* rays. In nearly all cases some abnormality of the bronchi was present, and calcified glands were found in the neighbourhood. Bronchoscopically the mucous membrane was seen to be granulated, varicose, or eroded. Recognition of this condition will prevent unnecessary or ineffective therapy, though it may also occur in early tuberculosis or bronchiectasis.

Surgery

192 Prolapse of Artificial Anus

F. HOWET (*Scalpel*, Liége, June 5, 1937, p. 720) draws attention to the danger of strangulation which is present when prolapse of an artificial anus occurs. The condition is similar to intestinal intussusception, but of less gravity. Prolapse of the colon is liable to occur when the artificial opening is in the transverse or descending colon, but it is most often seen in the distal segment of a sigmoidal anus. Invagination of the intestine may be slow and progressive, or it may take place within a few hours. In the first instance the eversion of the mucous membrane precedes the prolapse of the wall of the bowel, which it pulls after it. The physiological cause is generally an increase of intra-abdominal pressure due to strain, which may be produced by coughing, anti-peristaltic movements, or atony of the intestinal wall. The length of the mesentery is also a factor to be considered. In order to avoid prolapse it is important that the mesentery should not be too long at the point at which the bowel is brought to the abdominal wall, and also that the incision should avoid injury to the muscles. The wall of the bowel should be fixed to the

parietal peritoneum so that prolapse is impossible. Surgical treatment after prolapse has occurred consists in excising the injured portion of the bowel, careful haemostasis being essential. The mesentery is then shortened and fixed to the peritoneum by sutures, and finally the wall of the bowel is sutured to the skin, the whole operation being performed outside the peritoneum. Two cases are reported, in the first of which the prolapse had not recurred after three years, and the second was also successful but was of more recent date.

193 Primary Tumours of Lymph Glands

T. ANARDI (*Riv. Chir.*, May, 1937, p. 248), after describing the difficulties of classifying primary tumours of lymph glands other than in systemic diseases, divides them into three groups: (1) neoplasms of the parenchyma—lymphoblastoma, lymphocytoma, or lymphoma, according to the degree of cytological development; (2) neoplasms of the stroma—fibroma, lipoma, sarcoma, etc.; and (3) neoplasms of the blood or lymph vessels—endothelioma and perithelioma, to which it appears that the reticuloma (histiocytoma) must now be added. Although the third group is undoubtedly malignant, it is not rare for the growth to be slow, the tumour to remain localized, and for surgical removal, followed by *x*-ray therapy, to effect a cure. Two such cases are reported, one a perithelioma and the other an inguino-crural and a suprahyoid lymph gland endothelioma, which latter was difficult to distinguish from paradental phlegmon. The lymphoglandular perithelioma is rarer than the endothelioma, and seems most common in or near Scarpa's triangle; it may rapidly produce metastases.

194 Recurrent Dislocations of the Shoulder

C. VAN STAVEREN (*Nederl. Tijdschr. Geneesk.*, June 26, 1937, p. 3035) has treated ten cases of chronic dislocation of the shoulder-joint in elderly patients, and obtained good results without operation. In all but one case, in which it was axillary, the dislocation was subcoracoid. The treatment consisted in replacement under an anaesthetic by Cooper's traction method. All the cases were subsequently submitted to *x*-ray examination, and in only one was there any evidence of arthritis deformans.

Therapeutics

195 Pollen Therapy in Hay Fever

D. HARLEY (*J. Path. Bact.*, May, 1937, p. 589) reports a study of the effects of specific pollen therapy on the skin sensitivity as tested by both prick and intradermal methods of forty hay-fever patients who were grass-pollen sensitive. He also made immunological studies of a reaction-inhibiting substance (R.I.S.), which developed in the serum of grass-pollen-sensitive patients after treatment with grass-pollen extract and which inhibited the reaction of non-allergic skins to serum-pollen mixtures. After treatment with grass-pollen extract to a final dose of 100,000 units all the forty patients showed marked reduction in the size of the reactions produced by both prick and intradermal methods. At doses of 20,000 units the prick-test reactions were more greatly reduced than were the intradermal ones. The author concludes, therefore, that a decrease in the size of the specific skin reaction occurs if a sufficiently large dosage of pollen extract is given. Very considerable variations in skin-reactive potency were found in commercial grass-pollen extracts. Using sera from twelve of the patients, it was found that pre-treatment serum mixed with pollen extract failed to prevent a skin reaction in non-allergic test subjects, although at the site of the test pollen extract failed to evoke a reaction twenty-four hours after the first test. On the other hand, when mixed with pollen extract post-treatment serum stopped an immediate reaction but failed to prevent one at the site of the test after an interval of twenty-four hours and also failed to prevent a skin reaction in grass-pollen-sensitive subjects. The R.I.S. thus demonstrated did not destroy or inactivate the idioceptor or the idiotoxin, and appeared to be removed or rendered inactive after twenty-four hours. Anti-pollen precipitin was not found in any of the sera. Further tests showed that the inhibiting effect did not depend on any lengthy interaction between the R.I.S. and the idiotoxin *in vitro*, and suggested that it was the result of an action of the R.I.S. on the idioceptor preventing it from uniting with idiotoxin but not from attaching itself to cells. The interaction between R.I.S. and idioceptor did not appear to be very stable, since the R.I.S. was apparently removed from skin-test sites in twenty-four hours.

196 Antiketogenic Action of Dextrose

According to S. MARKEES (*Klin. Wschr.*, July 10, 1937, p. 985) the antiketogenic action of dextrose seems to be proved by its effects on diabetics and by the perfusion of the excised liver. This effect is more apparent than real; alimentary ketogenesis is not hindered, but ketone-body destruction in the tissues is favoured by the presence of dextrose. Markees has recently shown (*ibid.*, p. 841) that in healthy subjects intraduodenal exhibition of fats leads to their partial β-oxidation in the liver rather than to the transfer to fat depots—a fact which is contrary to expectation and general opinion, especially as glycerin is recognized as an antiketogenic agent. He now finds that in such persons simultaneous or previous administration of dextrose eliminates the resultant hyperketonaemia. That alimentary ketogenesis is preserved, however, is shown by adrenaline-interception tests. Dextrose therefore appears to be antiketogenic only in the sense that it improves the utilization of ketone bodies formed in physiological conditions from fats.

Diseases of Children

197 Pyloric Stenosis

M. KIRSCHNER (*Med. Klinik*, June 11, 1937, p. 785) reviews the present state of the operative treatment of pyloric stenosis in the newborn. He himself performed eighty-nine operations with a mortality of 5.6 per cent., and describes the technique employed. Statistics compiled by Ramstedt show an average mortality of 8.5 per cent., which is about the same as for those treated conservatively. The cases handed over to the surgeon, however, are those in which conservative treatment has failed, and the mortality statistics of the two methods are therefore not comparable. The author stresses the importance of combined surgical and medical treatment. He advises cool wards in the summer, a suitable diet, pre- and post-operative abundant subcutaneous and intravenous injections of liquids, and in grave cases blood transfusion.

198 Skull Fractures in Children

E. SORREL *et al.* (*Presse méd.*, May 22, 1937, p. 761) state that during the last four years they have observed 109 cases of fracture of the skull in children under the age of 15. They were surprised at the high percentage of recoveries even after severe symptoms had been present at the onset, at the speed with which this recovery took place, and at the absence of complications. Accidents in the street or falls from windows or trees were responsible for the majority of the fractures, eighty-six of which took place in children under the age of 10. The extent of the fracture as shown by radiography did not appear to bear any relation to the severity of the symptoms. Two cases are described in which very extensive fractures with haematomata were present; there was an accelerated pulse rate but no neurological signs, and in both instances

the children recovered completely without any after-effects. Meningo-encephalitic complications were fairly common, and there were four cases of extradural haematoma treated by operation. It was thought that this condition was present in other cases which recovered without operation after a period of coma lasting from ten to twenty-five days. There were nine instances of diffuse subdural haemorrhage. The pulse rate was a valuable sign as regards prognosis and treatment. If it rose to between 140 and 180 and then fell slowly, returning to normal in about a week, spontaneous recovery was probable; but if it remained fast, with signs of weakness or irregularity, intervention was usually necessary. Neurological signs, including convulsions, paralysis of the limbs or cranial nerves, hemianopsia, and aphasia, were indications for immediate operative treatment. This was also necessary in open fractures or when grave cerebral lesions were suspected; it was done within forty-eight hours if the pulse rate remained high, and it was carried out in all cases in which a short period of improvement was followed by the reappearance of symptoms. Of the 109 patients under review twenty-four died, nearly all within the first forty-eight hours. There were fifty-three patients who recovered spontaneously, and the remaining thirty-two did so after operation.

199 Osteomyelitis of the Maxilla

According to F. MARTILLOTTI (*Pediatria*, Naples, July, 1937, p. 616) acute osteomyelitis of the upper jaw, although rare, is often present during the first weeks of life. It has then given rise to many diagnostic difficulties and has been called antral empyema, orbital phlegmon, necrotic (dental) folliculitis, and false sinusitis, etc. The settling of a haematogenous infection in a primary dental follicle may be analogous with the common infection of the juxta-epiphyseal line—another region bearing a strain of growth. Martillotti's patient, at the age of 21 days, had had for a week a tender swelling over the left maxilla; *Staphylococcus pyogenes aureus* was found in pure culture in the pus exuding from the left nostril, the left alveolar sulcus, and later the main swelling. There was much tumefaction of the palatal arch on the left, and after twenty-seven days a bony sequestrum was discharged; both these points being against the alternative diagnosis of acute sinusitis, which had to be considered, for although the existence of the sinus at birth has been denied, Della Vedova has found it to be present in the seventh foetal month and to be 10 mm. long at birth. The literature describes numerous fatalities and occasionally sequestral exclusion of dental follicles and severe consequent deformities of dentition. *X*-ray examination is of little diagnostic help in restless and "toxic" infants, and according to Köhler the maxillary sinus is first radiologically distinguishable at the age of from 30 to 36 months. Radical measures have been advised, but Martillotti is satisfied with the excellent result of his conservative treatment, which consisted in local and parenteral exhibition of an autovaccine to the patient and of autovaccination of the nursing mother.

200 Tuberculosis in Children

T. K. WITH (*Acta paediatr.*, Stockh., 1937, **19**, 4, 482) states that the test used in his series of cases was the Mantoux, as he considers that it provides the best reaction for scientific purposes, since it is possible to give the exact doses. The doses varied from 1/1,000,000 mg. to 1 mg., and the varying proportions of redness and infiltration in the reacting area were studied. The sensitivity of the test in various types of tuberculosis was estimated; it was found to be highest in primary tuberculosis and lowest in cases of meningitis and miliary tuberculosis. The graduated intracutaneous test was therefore found to be of value in the routine clinical work of a children's department. In many cases the tests were performed several times during the course of the disease, as well as from six months to one year after the discharge of the patients from the hospital. In only a few cases were variations in sensitivity demonstrated during the disease, but by retesting later it was generally found to be considerably decreased. The proportion of redness and infiltration in this series bore no constant relation to the duration of the infection. A predominance of redness was seen only in a small number of the recent primary infections.

201 G. HERLITZ (*Acta paediatr.*, Stockh., 1937, **19**, Supplement 2) records his observations on 1,457 children of the Swedish working classes, aged from 0 to 15 years. About half reacted to the Pirquet test. The children were examined from five to twenty-three years later, the average time being 13.4 years, and the following conclusions were made. A child with a positive tuberculin reaction but free from any clinical symptoms of tuberculosis runs a greater risk of developing manifest tuberculosis and of dying from it within the next ten to fifteen years than does a child of the same age who responds negatively. In the case of the child with occult tuberculosis this risk outlasts childhood and persists into adolescence. Another conclusion was that it is more dangerous to be infected with tuberculosis during the first two or three decades of life than later on.

202 Pertussis

H. GOLD (*J. Pediat.*, May, 1937, p. 641) records thirty cases of whooping-cough in children aged from 19 months to 7 years who were treated by intramuscular injection of a specific soluble pertussis antigen which was chemically and biologically standardized. Out of twenty-eight cases treated seventeen responded with excellent results and seven with good results. The antigen specifically controlled the paroxysmal stage of pertussis after a few injections, but the treatment had to be continued in order to maintain the relief and to prevent recurrence. The earlier the treatment was given the better were the results.

Obstetrics and Gynaecology

203 Uterus Bicornis Unicollis and Abortion

According to P. CAFFIER (*Zbl. Gynäk.*, July 3, 1937, p. 1575) the uterus bicornis unicollis is often able to carry to term and expel normally a live foetus; it has indeed been confused with pelvic tumour arising in the puerperium, and its true nature has in many cases first been recognized at operation. Either one or both horns may carry successive pregnancies. On the other hand, it is sometimes a cause of habitual abortion, and the symptoms and signs of ectopic pregnancy may be so closely mimicked that laparotomy has on numerous occasions been done for supposed tubal gestation. The case is related of a woman, aged 26, who a year after a third-month abortion again had bleeding and pain after four months' amenorrhoea. From the external os a complete decidual cast, without foetal parts, was removed; a soft right adnexal tumour was regarded as a tubal pregnancy. The patient collapsed, and in preparatory anaesthesia for operation for supposed tubal rupture it was noted that the external bleeding was unusually copious for such a case and that the fundus, now more clearly palpable, was unusually high for ectopic pregnancy. Vaginal examination now showed the foetus projecting from the right gravid cornu into the cervix, and subsequently the left half from which the cast had been taken was identified. A confirmatory hysterosalpingography was carried out. In the prevention of habitual abortion due to uterus bicornis unicollis Caffier advises intensive folliculin therapy with a view to improving the nutrition and functional capacity of the uterus; plastic operation may also eventually be considered. K. HÜBSCHER (ibid., p. 1581)

was led to operate early in a fourth pregnancy with threatened abortion for supposed pelvic tumour or uterine deformity in a patient, aged 25, who had already had three abortions in the third month. He found, in addition to pregnancy in one horn of a uterus bicornis unicollis, a strongly developed retrovesical ligament, representing the remains of the urorectal septum. This was removed, as was also the non-gravid cornu and adnexa of the same side; the pregnancy went on uneventfully to term.

204

Lactation Statistics

P. FELDWEG (*Dtsch. med. Wschr.*, July 2, 1937, p. 1046) reports his observations on 1,352 women confined in a maternity hospital in Pforzheim. It was found that 20.6 per cent. yielded an insufficient supply of milk for their babies, 22.1 per cent. gave a sufficient supply, and 57.3 per cent. had more than enough. In 5.8 per cent. the amount of milk exceeded 800 grammes a day. The high average yield depended largely on the daily pumping of the residual milk after the infant had been fed. With regard to the 20.6 per cent. who did not yield enough, the cause of this insufficiency was only in part due to pathological conditions at birth; it often happened that perfectly healthy mothers who had undergone a normal confinement yielded insufficient milk, whereas mothers whose pregnancies had been complicated by eclampsia or Caesarean section commonly yielded more than was needed. The author assumes that not only in his own hospital but elsewhere in the world at least 50 per cent. of mothers yield more milk than their babies need. In a consecutive series of 242 cases lactation records were kept, after discharge from hospital, of more than 60 per cent. of the mothers who had yielded an ample supply of milk. Only three months after confinement half of these women had ceased to feed their infants, and in only 15 per cent. was the mother's milk the sole source of nourishment. The author traces this deplorable state of affairs to social and psychological rather than to anatomical and physiological factors, the urge to earn money or to play bridge leading in many cases to the cessation of breast feeding. In 1935 there were 86,227 deaths in the first year of life in Germany, and the author traces approximately half of these deaths to disturbances of nutrition due to the lack or inadequacy of breast feeding.

205

Ergobasin

T. ANTOINE (*Wien. klin. Wschr.*, July 2, 1937, p. 999) describes a new alkaloid of secale cornutum, which is marketed under the name of "ergobasin." This is a water-soluble alkaloid of low molecular weight, which has no effect on the autonomous nervous system, but which exercises a specific action on the uterus. It increases the tone of the uterus and gives rise to rhythmic contractions of an increased frequency. It may be given either by the mouth or by injection, and the effect is first observed about five to ten minutes after administration and lasts for six to twelve hours. This drug is useful mainly in assisting the expulsion of the placenta, during the puerperium, and in gynaecological haemorrhages, but it may also be used during the first two stages of labour.

206

Sterility

H. O. NEUMANN (*Med. Klinik*, June 25, 1937, p. 861) relates his experiences with hormone therapy in sterile women. He reports statistics according to which 10 per cent. of marriages in Germany remain sterile, thus reducing by 100,000 the number of births in a year. The author used mainly progynon B oleosum, and obtained variable results. He stresses the fact that there are no contra-indications from the eugenic point of view to the use of hormones in sterility.

Pathology

207

Cholesterin Metabolism

H. BEUMER (*Münch. med. Wschr.*, June 25, 1937, p. 1007) examined the cholesterin metabolism in a boy of 10. The patient was pale and fat; his build was infantile; he suffered from osteoporosis and had xanthomata on his eyelids, elbows, and toes. The liver was enlarged, and the spleen was not palpable. In childhood he had suffered from hypoglycaemic states, which had been relieved by the ingestion of sugar. Acetone was found in the urine. The blood sugar content was 60 mg. per 100 c.cm., and the amount of cholesterin in the serum on admission was 600 mg. per 100 c.cm. While in hospital the patient was given a vegetarian diet consisting of emulsion of almonds, bananas, apples, bread, and potatoes. He was fed for certain periods on food rich in cholesterin, alternating with periods in which the diet contained no fats or cholesterin. It was found that the cholesterin content of the serum was independent of whether the diet was rich or poor in cholesterin, but in cholesterin-poor periods the cholesterin balance was negative, and in the cholesterin-rich periods it was positive. There was no tendency to retention of cholesterin, nor was there any inability to excrete enterogenous cholesterin. The skin symptoms and the enlargement of the liver were not affected by a cholesterin and fat-free diet taken over a period of three months. The author is of the opinion that xanthomata do not depend on alimentary influences, but are due to an endogenous disturbance of the cholesterin metabolism, and that hypercholesterinaemia, which always occurs in simple glycogenesis, is due to endogenous factors.

208

Blood Coagulation by Snake Venom

H. EAGLE (*J. exp. Med.*, May, 1937, p. 613) reports investigations to determine whether the coagulative action of snake venom depends on their enzyme content, and whether it is of two types, one acting on prothrombin to form thrombin, and another acting directly on fibrinogen to form fibrin. Of seventeen venoms tested, nine coagulated citrated plasma, and of these seven coagulated purified fibrinogen. The coagulating action of these seven venoms was independent of calcium ions, tissue or platelet derivatives, and of prothrombin, and was not affected by antithrombin; fibrinogen was therefore attacked directly by these venoms. The optimum *p*H for this reaction was 6.5, the same as that for the action of thrombin on fibrinogen. Of the eleven venoms that did not coagulate fibrinogen, five rendered the protein non-coagulable by thrombin. Both the coagulation and destruction of fibrinogen appeared to be associated with the proteolytic activity of the venom. Five of the seventeen venoms were capable of converting purified prothrombin to thrombin. Of these five, three coagulated fibrinogen but the other two had no effect on it, so that their coagulating power was entirely due to their ability to convert prothrombin to thrombin. The activation of prothrombin by venom occurred in the absence of ionized calcium and of platelet or tissue derivatives, and was prevented by antithrombin; these venoms therefore acted directly on prothrombin. Although the activation of prothrombin took place over a wide range of *p*H, 5.6 to 8.3, the optimum *p*H for the coagulating action of thrombin formed from prothrombin by snake venom was 6.5, the same as for thrombin produced physiologically by calcium and platelets. Nine venoms destroyed prothrombin. Both the activation and destruction of prothrombin appeared to be associated with the proteolytic activity of the venom. There was no apparent correlation between magnitude of proteolytic activity and the type of effect produced on either fibrinogen or prothrombin, and in relation to both fibrinogen and prothrombin there appeared to be two types of enzymes, one destructive and one activating. The relation of the findings to the physiological process of coagulation is discussed.

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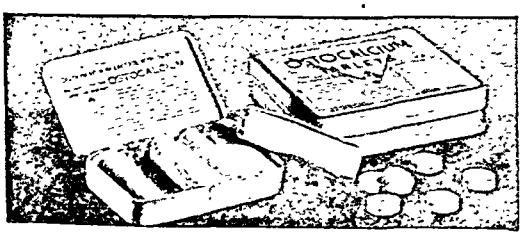
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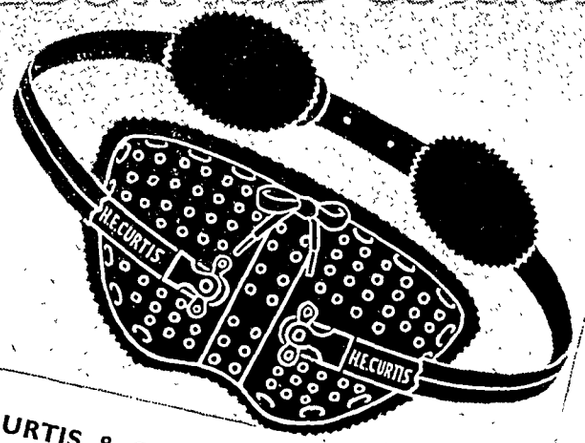
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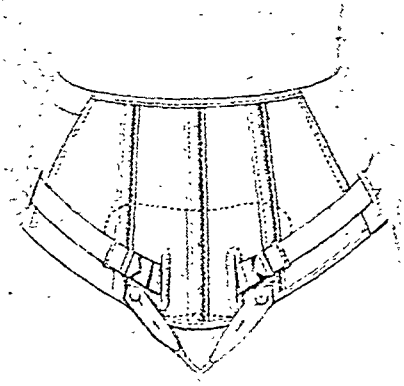
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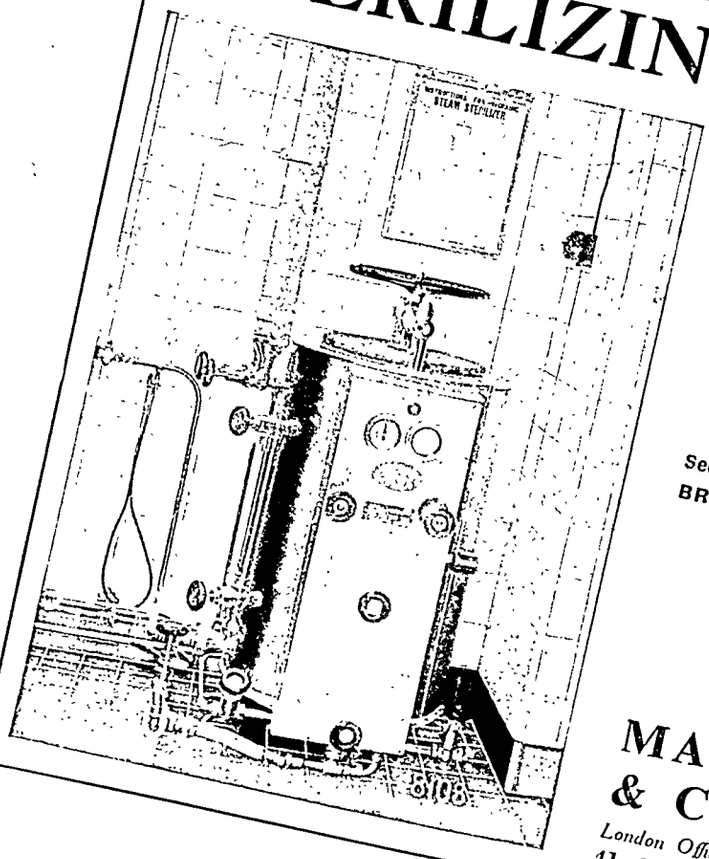


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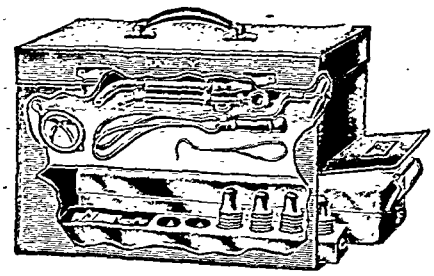
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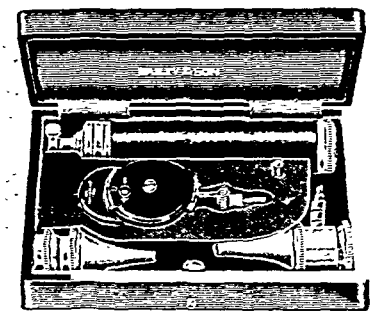
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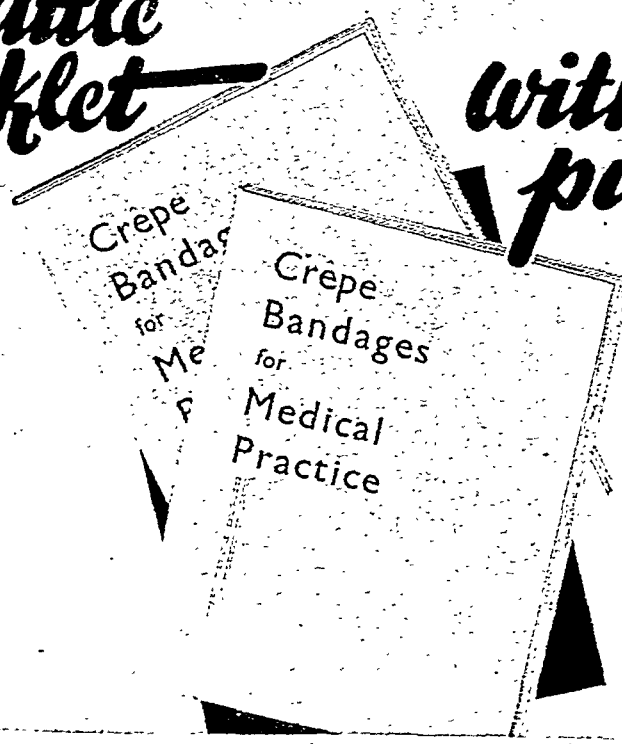
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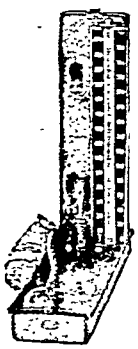
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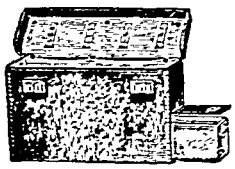
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A REGISTERED HOSPITAL for the CARE and TREATMENT OF LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L.M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 300 acres. Voluntary Patients of both sexes are also received for treatment. Special accommodation for Lady Voluntary Patients is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the Main Hospital. For particulars as to terms, etc., apply to—G. W. T. H. FLEMING, M.R.C.S., L.R.C.P., D.P.M., Medical Supt.
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Telegrams: "Alleviated, London." **Telephone: Rodney 2641-2642.**

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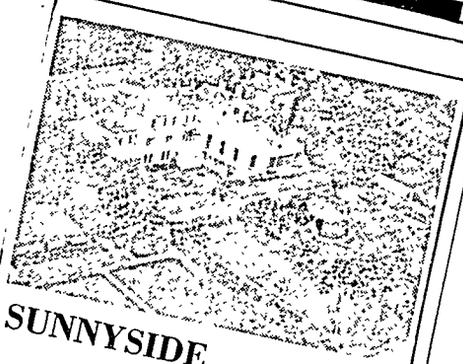
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THE INTENSIVE POST-GRADUATE COURSE will be held on SATURDAY, OCTOBER 24th, SUNDAY, OCTOBER 23rd, and

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Further particulars from the Secretary Post-Graduate Medical Association, The University, Glasgow.

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The appointment is a part-time one.

The salary proposed is £650.

Persons who desire to be considered for the office are requested to lodge their names with the Secretary to the University by September 15th, 1937.

The conditions of appointment may be obtained from the undersigned.

H. J. BUTCHART,
Secretary to the University of Aberdeen.

The University, Aberdeen.

UNIVERSITY OF LONDON

Applications are invited for the WILLIAM JULIUS MICKLE FELLOWSHIP which is of the value of at least £200, and is awarded by the Senate to the man or woman who, being resident in London and a graduate of the University, has, in the opinion of the Senate, done most to advance Medical Art or Science within the preceding five years. Applications must be made before October 1st, 1937. Further particulars should be obtained from the Academic Registrar, University of London, W.C.1.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.1.

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Applications are invited for the office of "WANDER" SCHOLAR (Clinical Pathologist and Registrar to the Children's Department). Salary £250 per annum. Duties to commence October 1st, 1937. Candidates must be registered medical practitioners who have held a resident hospital post and had some experience in pathology or in diseases of children. The office is a whole-time one and is tenable for one year. Applications (six copies), together with six copies of three recent testimonials, should be submitted to the undersigned (from whom further details regarding the duties of the office can be obtained), not later than Friday, September 17th, 1937.

By Order of the House Committee,
CHARLES M POWER, Secretary.

LONDON HOSPITAL MEDICAL COLLEGE.

DEMONSTRATOR OF ANATOMY.

Applications are invited for the appointment of Demonstrator of Anatomy. Salary £400 per annum.

Applications, with copies of three testimonials, will be received by the undersigned up to September 30th.

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Applications are invited from duly qualified medical men with a Public Health Qualification for the position of Deputy Medical Officer of Health.

Candidates will be required to carry out medical inspection of school children and child welfare work, and such other work as may be assigned by the Medical Officer of Health.

The person appointed will be required to devote his whole time to the duties, and will not be allowed to engage in private practice. Salary will be at the rate of £750 per annum, rising to £900 by £25 per annum.

A deduction of 5 per cent. will be made from the salary in accordance with the provisions of the Local Government and Other Officers' Superannuation Act, 1922, which has been adopted by the Council, and the appointment will be subject to passing the Council's medical examination in connection therewith. Canvassing will be a disqualification.

Copies of the application form and terms of appointment can be obtained from Dr. THOMAS ORR, Medical Officer of Health, Town Hall, Ealing, W.5, to whom applications, accompanied by copies of not more than three recent testimonials, must be delivered not later than September 30th.

Town Hall, R. H. WANKLYN,
Ealing, W.5. Town Clerk.

WORCESTERSHIRE COUNTY COUNCIL.

ASSISTANT TUBERCULOSIS OFFICER (MALE).

The above-mentioned Council are about to appoint a whole-time Assistant Tuberculosis Officer and applications are now invited for this post.

Applicants must be registered Medical Practitioners between the ages of 25 and 45 years. Special experience and qualifications in Tuberculosis will be necessary, as work under the County Tuberculosis Scheme will form the chief part of the Officer's duties. He should have (1) at least three years' experience in the practice of his profession, (2) spent in general clinical work a period of not less than eighteen months, of which not less than six months have been spent in a Hospital as Resident Officer in charge of beds occupied by general medical or surgical cases, and (3) received special training, for a period of not less than six months, in the diagnosis and treatment of Tuberculosis and in Artificial Pneumothorax treatment. A Diploma in Public Health is desirable. The officer who is appointed will work under the supervision of the Chief Tuberculosis Officer.

The person appointed will be required to reside in the southern half of the County.

The salary will be £600, rising by £25 per annum to £700, with an allowance of £140 per annum for use of his own motor car. The engagement will be subject to three months' notice on either side. The post is designated under the Local Government and Other Officers' Superannuation Act, 1922, and a medical examination will have to be passed by the successful candidate.

Applications (on forms to be obtained from the County Medical Officer, County Buildings, Worcester), accompanied by not more than three recent testimonials, must be received by 15th day of September, 1937, addressed to the County Medical Officer, County Buildings, Worcester.

Canvassing disqualifies, and neither the names of the members of the County Council nor of the Committee will be supplied

(Signed) C. H. BIRD,
Clerk of the County Council.

Shirehall, Worcester.
August 21st, 1937

(J. 133.)

GENERAL POST OFFICE

Headquarters Medical Branch.
(Female Staff.)

There will shortly be two vacancies for ASSISTANT WOMEN MEDICAL OFFICERS in the Headquarters Medical Branch. The appointments will be pensionable and will carry a salary commencing at £500 a year and rising by annual increments of £25 to £700 a year. The rates of salary are liable to review.

Each candidate must be a fully qualified medical practitioner, a natural-born British subject, and the child of a person who is or was at the time of death a British subject. Candidates must also be unmarried or widows. Preference will be given to candidates under 30 who have held one or more hospital appointments. The successful candidate will not be allowed to engage in private practice in addition to their official duties.

Applications, stating qualifications, age, etc., with copies of any recent testimonials, should be sent to the Chief Medical Officer, General Post Office, London, E.C.1, not later than September 20th, 1937.

Political influence should not be sought in support of applications; it would prejudice rather than assist the candidature.

The Female Medical Staff at Headquarters consists of a senior Woman Medical Officer and five Assistant Women Medical Officers. Information as to the duties can be obtained from the Chief Medical Officer.

Candidates may be required to attend for personal interview in London at their own expense.

INDIAN MEDICAL SERVICE

RECRUITMENT OF EUROPEAN OFFICERS

Applications are invited from Medical Men for Permanent Commissions in His Majesty's Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or of £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

British subjects of pure European descent who are under 32 years of age and who are registered under the Medical Acts in force in Great Britain and Northern Ireland are eligible to apply.

CAREERS.

The Indian Medical Service offers a permanent career with wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after one year's Indian Service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of Civil Officials and for general medical administrative purposes, to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

RATES OF PAY.

Years of Service.	Rank	Basic Pay Rs. per mensem	Overseas Pay. £ per month.	Total £ per annum.
1	Lieutenant.	450	15	585
2	Captain.	500	25	750
3	"	550	25	795
4	"	550	25	795
5	"	600	25	840
6	"	600	30	900
7	"	700	30	990
8	"	700	30	990
9	"	700	35	1050
10	"	700	35	1050
11	Major.	800	35	1140
12	"	800	40	1200
13	"	800	40	1200
14	"	800	40	1200
15	"	800	40	1200
16	"	950	40	1335
17	"	950	40	1335
18	"	950	40	1335
19	"	1100	40	1470
20	"	1100	40	1470
21	Lieut.-Col.	1350	40	1695
22	"	1350	40	1695
23	"	1350	40	1695
24	"	1500	40	1830
25	"	1500	40	1830

Note.—(1) The rupee is at present stabilized at a rate equivalent to 1s. 6d.
(2) An officer promoted to the rank of Lieut.-Colonel before completion of 20 years' service will receive pay at the rate of Rs. 1200 per mensem (basic) plus £40 per month overseas pay

Extras.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION.

Candidates possessing certain higher medical qualifications or holding the Diploma in Public Health may be granted an antedate in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period. The maximum period of antedate, secondment, or antedate and secondment combined, admissible under this paragraph, is limited to 18 months.

OUTFIT ALLOWANCE.

Officers on appointment will receive an allowance of £75 towards the cost of outfit.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

LEAVE.

Leave can be taken at reasonable intervals, and adequate rates of leave pay are provided. Extra leave (known as study leave), which may not exceed 12 months in all during an officer's service, may be granted to officers desirous of pursuing special courses of study of a postgraduate nature. During such leave, study allowance, at present fixed at the rate of 12s. a day in the United Kingdom, £1 a day on the Continent of Europe, and £1 10s. a day in the United States of America and Canada is granted to an officer in addition to ordinary rates of leave pay.

PENSIONS.

The rates of pensions are as follows:—

	Per annum.
After 17 years' service for pension	£372 0s.
" 18 " " "	£400 0s.
" 19 " " "	£428 0s.
" 20 " " "	£465 0s.
" 21 " " "	£502 0s.
" 22 " " "	£539 10s
" 23 " " "	£576 10s.
" 24 " " "	£614 0s
" 25 " " "	£651 0s.
" 26 " " "	£697 10s
" 27 " " "	£744 0s.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with free passage to India. The families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges. Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately three months, prior to their embarkation for India on first appointment. Information as to the rates of pay admissible during this period and subsequently up to arrival in India is contained in the memorandum referred to below.

A memorandum giving full details regarding these appointments and forms of application may be obtained from the UNDER-SECRETARY OF STATE FOR INDIA, MILITARY DEPARTMENT, INDIA OFFICE, LONDON, S.W.1. The Selection Committee will meet at the India Office early in October next, and the selected candidates will be required to join a course of instruction commencing about 1st November, prior to sailing for India in February, 1938. Applications should reach the India Office as soon as possible and in no case later than October 2nd.

INDIA OFFICE, SEPTEMBER, 1937

COUNTY COUNCIL OF MIDDLESEX.

The County (Tuberculosis) Sanatorium, Clare Hall, South Mimms, Middlesex.

RESIDENT ASSISTANT MEDICAL OFFICER (male).

Applications are invited for the above appointment. Candidates must be registered medical practitioners, not over 35 years of age, unmarried and of British nationality. They must have held resident hospital appointments. Practical experience in the diagnosis and treatment of tuberculosis will be an additional qualification.

Salary £400 per annum, rising by annual increments of £25 to £475, with board, lodging and laundry, valued at £100 per annum.

The officer appointed will work under the direction of the Medical Superintendent, and devote his whole time to his official duties.

The appointment, which will be subject to medical examination, will be held during the pleasure of the Council, and is terminable by one month's notice on either side.

The appointment, which does not carry any superannuation rights, is for a period of four years, at the end of which period the officer will leave the Council's service. In a special case the Council may decide to retain an officer on the established staff, in which case the salary will be increased to a maximum of £500.

Applications, stating age, qualifications and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than September 25th.

Relationship to any member or officer of the Council must be disclosed in the application. Application forms are not provided. Envelopes must be endorsed "Assistant Medical Officer, Clare Hall 'Z'."

Canvassing, directly or indirectly, will be a disqualification.

C. W. RADCLIFFE,
Clerk of the County Council.

Middlesex Guildhall,
Westminster, S.W.1
September 2nd, 1937.

CITY OF BIRMINGHAM

Public Health Department.
Little Bromwich Hospital for Infectious Diseases.

JUNIOR RESIDENT MEDICAL OFFICERS

Two Junior Resident Medical Officers (one male and one female) required. Candidates must be unmarried and must have held previous resident posts in General or Children's Hospitals.

Salary at the rate of £300 per annum, together with board, etc., valued at £150 per annum.

These appointments are limited to twelve months. The officers appointed will be required to pay to the Council all fees, allowances, and emoluments (other than the foregoing) received by them.

It is not feasible to attend classes for the D.P.H. in conjunction with these appointments.

Forms of application may be obtained from the Medical Superintendent, Dr. J. McGarrity, Little Bromwich Hospital, Birmingham, 9, and should be returned to him on or before September 18th.

The Council House, F. H. C. WILTSHIRE,
Birmingham. Town Clerk.

THE KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION

Applications are invited from duly registered medical practitioners for the posts of ASSISTANT RESIDENT MEDICAL OFFICER (male, single—one year appointment) at the following institutions:

(a) North Wales Sanatorium (247 beds for female pulmonary and male, female, and children non-pulmonary cases), Denbigh, North Wales.

(b) Glan Ely Hospital (196 beds for pulmonary and surgical tuberculosis in men, women, and children), Fairwater, near Cardiff.

Salary £200 per annum, plus maintenance.

Applications, stating age, qualifications, experience, etc., together with copies of three recent testimonials, should reach the undersigned not later than Wednesday, September 15th, 1937.

Memorial Offices, D. A. POWELL,
Wes gate Street, Principal Medical Officer
Aug 1st 30th, 1937 Cardiff.

BOROUGH OF WILLESDEN.

RESIDENT MEDICAL OFFICER

Applications are invited for the post of Resident Medical Officer at the Willesden Municipal (Fever) Hospital. The salary will be at the rate of £250 per annum with board, lodging and laundry, and the appointment is for a period of twelve months. The Hospital admits all the notifiable diseases.

Applications, stating age, qualifications and previous experience, with copies of three recent testimonials, to be sent to the Medical Superintendent, Willesden Municipal Hospital, Brentfield Road, Neasden, N.W.10.

E. A. PRATT,
Town Clerk.

September 6th, 1937

COUNTY OF DORSET.

Assistant County Medical Officer and Medical Officer of Health for the Wareham Borough, the Wareham and Purbeck Rural District, and the Swanage Urban District.

The Dorset County Council invite applications for the joint whole-time appointment of ASSISTANT COUNTY MEDICAL OFFICER AND MEDICAL OFFICER OF HEALTH for the Wareham Borough, Wareham and Purbeck Rural District, and Swanage Urban District (population about 25,000).

The salary for the combined appointment will be £800 per annum, together with a travelling allowance of £80 per annum and necessary out-of-pocket expenses according to the scales now in force.

Applicants must be qualified in accordance with Article 8 of the Sanitary Officers (outside London) Regulations, 1935, and hold the Diploma in Public Health or similar qualification.

The candidate appointed will, as regards his duties as Assistant County Medical Officer, act under the direction of the County Medical Officer of Health, and will be required to perform such duties as may be from time to time prescribed. As regards his duties as Medical Officer of Health, he will be subject to the control and direction of the District Councils concerned.

The post will be designated under the Local Government and Other Officers' Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination. He will also be required to reside within the area for which he is Medical Officer of Health and to take up his appointment on January 1st, 1938.

Candidates must apply in their own handwriting on the prescribed form, to be obtained, on receipt of a stamped addressed foolscap envelope, from the undersigned, by whom applications, accompanied by copies of not more than three recent testimonials, must be received not later than Monday, September 20th, 1937.

Canvassing in any form will be a disqualification.

County Offices, C. P. BRUTTON,
Dorchester. Clerk of the County Council.
August 21st, 1937.

LANCASHIRE COUNTY COUNCIL.

JUNIOR ASSISTANT MEDICAL OFFICER.

Wrightington Hospital, Appley Bridge.

Applications are invited for the post of Junior Assistant Medical Officer (male, unmarried) for the Wrightington Hospital, which contains 206 beds for non-pulmonary tuberculosis (adults and children) and 20 beds for "combined" pulmonary and non-pulmonary cases. Salary £200 per annum, together with board, residence and laundry.

The appointment will commence on October 1st or thereabouts, and will be for 12 months.

The medical staff consists of medical superintendent, two assistants, two consultant orthopaedic surgeons and other visiting surgeons. There are excellent facilities for reading for M.D.

Forms of application and conditions of appointment obtainable from Central Tuberculosis Officer, County Offices, Preston. Letters to be marked "Wrightington M.O."

Closing date September 17th, 1937.

County Offices, GEORGE ETHERTON,
Preston. Clerk of the County Council

THE CHRISTIE HOSPITAL AND HOLT RADIUM INSTITUTE, WITHINGTON, MANCHESTER, 20.

Applications are invited for the post of RESIDENT MEDICAL OFFICER to the above Hospital and Institute for duty with the Radiotherapy Department. Appointment is for six months in the first instance, but is renewable.

Salary at the rate of £150 per annum, plus residence (private suite), board, etc.

The appointment offers an excellent opportunity of obtaining experience in Radium and X-ray Therapy. Candidates must have had previous Medical and Surgical experience.

Applications, stating age, qualifications and previous experience, to be submitted immediately to the undersigned

PERCY N. GLASS,
Superintendent.

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

NEWCASTLE GENERAL HOSPITAL (800 Beds.)

ONE SURGICAL REGISTRAR (PART-TIME)

Applications are invited from duly qualified and registered Medical Practitioners for the above post.

The salary in respect of the appointment is £250 per annum.

Further particulars may be obtained from the Medical Officer of Health, Health Department, Town Hall, Newcastle-upon-Tyne, 1, to whom applications, accompanied by not more than three recent testimonials, should be delivered on or before September 18th, 1937.

August 27th, 1937.

COUNTY BOROUGH OF MERTHYR TYDFIL.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited from medical women (unmarried or widowed), under the age of 40, for the above post. The person appointed must be a registered Medical Practitioner, and registered in the *Medical Register* as the holder of a Diploma in Sanitary Science, Public Health, or State Medicine. Preference will be given to a candidate who:

1. has had at least three years' experience in the practice of her profession;
2. has held the appointment of Resident Medical Officer in a Maternity Department for a period of not less than six months;
3. has had not less than one year's continuous experience in some branch of obstetric work.

The duties will include School Medical Inspection; Supervision of Midwives; attendance at Ante-Natal and Infant Welfare Centres; and other Public Health duties as may from time to time be prescribed. The duties of the respective offices will be carried out under the general direction of the Medical Officer of Health.

The commencing salary will be at the rate of £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum.

Applications, together with copies of three recent testimonials, must reach the undersigned on or before September 16th, 1937.

Town Hall, T. H. STEPHENS,
Merthyr Tydfil. Medical Officer of Health.
August 30th, 1937.

LEIGH JOINT HOSPITAL BOARD.

Applications are invited from Medical Men (under 45 years of age) for appointment as MEDICAL SUPERINTENDENT of the BOARD'S INFECTIOUS DISEASES HOSPITAL, situate at Astley.

The salary assigned to the office is at the rate of £800 per annum, together with the usual residential allowances.

He will be required to reside in the residence provided (unfurnished) by the Board.

The post is designated under the Local Government and Other Officers' Superannuation Act, 1922, and the emoluments for the purpose of the Act are valued at £150.

Preference will be given to applicants who have held resident medical appointments, since qualification, at an Infectious Diseases Hospital and are experienced bacteriologists.

The appointment will be terminable by one month's notice on either side.

Forms of application may be obtained from, and must be returned when duly completed to, the undersigned by noon on Thursday, September 16th, next.

Canvassing, either directly or indirectly, will disqualify.

The Sanatorium, ERNEST WILIAMS,
Astley, Nr. Manchester. Clerk to the Board
August 22nd, 1937.

CITY OF BIRMINGHAM

PUBLIC ASSISTANCE COMMITTEE.

ERDINGTON HOUSE

ASSISTANT RESIDENT MEDICAL OFFICER

The Public Assistance Committee invite applications from fully qualified medical practitioners for appointment as Assistant Resident Medical Officer at Erdington House.

The Institution, which is approved for the purposes of the D.P.M. has accommodation for upwards of 1,800 inmates and is set apart for the reception of all classes of mental and nervous disorder. The admission rate is 1,500 per annum.

Parts of the Institution are certified under the provisions of the Mental Deficiency Acts, 1913/1927. There are facilities for research on the pathological and biological side, and the appointment gives opportunities for postgraduate study.

The Officer appointed will be required to assist in the general medical work of the Institution under the supervision of the Senior Medical Officers. Four weeks' leave of absence will be granted to the successful candidate during the term of office.

The appointment will be for a period of twelve months, and the salary attached to the appointment will be at the rate of £300 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance).

The appointment will be subject to one month's notice on either side.

Any further particulars as to the Institution and/or duties may be obtained upon application to the Medical Officer of the Institution, Dr. H. F. Kirkland, to whom applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, should be forwarded so as to reach him not later than 10 a.m. on Wednesday, September 16th, 1937.

Canvassing in any form, oral or written, direct or indirect, will be regarded as a disqualification.

Council House, F. H. C. WILTSHIRE,
Birmingham, 1. Town Clerk
August 26th, 1937

LONDON COUNTY COUNCIL.

PUBLIC HEALTH DEPARTMENT.

Applications are invited for two vacant positions of PART-TIME OBSTETRICIAN AND GYNAECOLOGIST. Appointments will be to the hospital service of the Council, but in the first instance one of the appointed officers will be allocated to DULWICH and ST. GILES' (Camberwell) Hospitals and the other to ST. MARY, ISLINGTON, ARCHWAY (Highgate) and HIGHGATE Hospitals. Remuneration £800 a year and £600 a year respectively. Each officer will be responsible, subject to the general administrative supervision and control of the medical superintendents, for the whole of the obstetric and gynaecological work at the hospitals to which he is attached (there are no maternity beds at Archway and Highgate Hospitals). Each officer will be required to live within a reasonable distance of these hospitals and to visit them daily and as required (weekly and as required in the case of Archway and Highgate Hospitals).

Application forms containing further particulars (stamped addressed envelope necessary) from the Medical Officer of Health (S.D.6), County Hall, Westminster Bridge, S.E.1. Forms returnable by September 24th. Canvassing disqualifies.

LONDON COUNTY COUNCIL.

INFECTIOUS HOSPITALS.

Applications invited from medical practitioners for appointment as ASSISTANT MEDICAL OFFICERS (Grades I and II) at various hospitals for infectious diseases. Salaries are:—Grade I, £350-£25-£425 a year; Grade II, £250 a year, both inclusive of board, lodging and washing. Candidates for Grade I positions should have had experience in a resident appointment in a general hospital, and must have had fever experience. Appointment as assistant medical officers, Grade II, are for one year only in first instance (renewable for a second year under certain conditions), but officers are eligible for promotion to Grade I after a minimum period of six months' service.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 2), County Hall, S.E.1, returnable by September 15th. Canvassing disqualifies.

LONDON COUNTY COUNCIL.

Applications invited from Medical Practitioners with appropriate qualifications for the appointment of ASSISTANT PATHOLOGIST in the Council's pathological service. Salary £650-£25-£800.

For appointments in the Group Laboratories candidates should have special experience in one or more branches of pathology in relation to the diagnosis and treatment of disease.

For the appointment at the Central Histological Laboratory advanced experience in morbid histology and post-mortem work is essential.

Forms of application and further particulars (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 2), County Hall, Westminster Bridge, S.E.1, returnable by September 24th, 1937.

Canvassing disqualifies.

LONDON COUNTY COUNCIL.

ASSISTANT MEDICAL OFFICER (man or woman) required for mental services. Candidates (under 35 years of age) must (I) be registered to practise both in medicine and surgery in England; (II) be of at least one year's professional standing; and (III) have held residential position in general hospital for six months, or comparable general experience. Salary £470 a year, rising by £25 to £570 (additional allowance of £50 to holders of D.P.M.) No emoluments. Charges for board, lodging, etc. (at present £2 9s a week) if required to be resident. Pensionable. In the case of women, marriage terminates contract of service.

Application form, returnable by September 22nd, obtainable from Chief Officer (B), Mental Hospitals Department, Shell Mex House, Strand, W.C.2. Canvassing disqualifies.

COUNTY BOROUGH OF WEST HAM. PLAISTOW FEVER HOSPITAL. (210 Beds.)

Applications are invited for the post of JUNIOR ASSISTANT MEDICAL OFFICER (male) at the Plaistow Fever Hospital.

Salary £300 per annum, together with residence, board and laundry. The appointment is for one year.

Preference will be given to candidates who have held a resident appointment in a general hospital. Good facilities for post-graduate study are available.

Application forms can be obtained from the Medical Officer of Health, Municipal Health Offices, Romford Road, Stratford, E.15, and should be returned, together with copies of not more than three recent testimonials, to the Town Clerk, Town Hall, West Ham, E.15, not later than September 20th.

HULL CORPORATION HEALTH DEPARTMENT.

ASSISTANT MEDICAL OFFICER OF HEALTH FOR PORT SANITARY WORK.

Applications are invited from duly qualified medical men, under the age of 40 years and of not less than three years' standing in their profession, for the appointment of an ASSISTANT MEDICAL OFFICER OF HEALTH, at a salary of £660 per annum, rising by annual increments of £25 to £700 per annum.

Candidates must hold a registered degree or diploma in State Medicine or Public Health.

The person appointed will be engaged primarily on routine Port Sanitary Work, Medical Inspection of Aliens, Bacteriological Work, and the Control of Infectious Diseases, but may be called upon to do work in any other department of the Public Health Services in accordance with the Corporation's scheme for the interchange of medical staff.

Experience in Port Sanitary Work and Infectious Diseases will be considered important qualifications for the appointment.

The appointment may be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922.

Applications, on forms to be obtained from the undersigned, with copies of not more than three recent testimonials, are returnable not later than noon on Thursday, September 23rd, 1937.

Health Department. NICOLAS GEBBIE, M.D.,
Guildhall, Hull. Medical Officer of Health.
September, 1937.

PALMERSTON NORTH HOSPITAL, NEW ZEALAND.

RESIDENT MEDICAL OFFICER AND REGISTRAR.

Applications are invited for the post of Resident Medical Officer and Registrar at the above Hospital.

Salary £450 per annum.

Applicants should be single. The appointee will be required to live in. The duties of the position, apart from the medical registry work, include supervision of medical wards and supervision of outpatients.

Further details may be obtained from the Office of the High Commissioner for New Zealand, New Zealand Government Offices, 415, Strand, London, W.C.2.

Applications to furnish a detailed statement as to age, qualifications and experience, and to be accompanied by copies only of testimonials, close with the undersigned on October 30th, 1937.

A. J. PHILLIPPS,
Managing Secretary.

COUNTY BOROUGH OF BRIGHTON.

BRIGHTON MUNICIPAL HOSPITAL.

THIRD RESIDENT ASSISTANT MEDICAL OFFICER (male).

Applications are invited for the above post at the Brighton Municipal Hospital, which is a General Hospital containing 620 beds.

Salary £300 per annum, with board, residence and laundry provided.

The appointment is a whole-time one, and will be for a period of one year.

Candidates must have held a house physician's appointment at a recognized hospital, and preference will be given to those who, in addition, have had practical experience of anaesthetics and maternity work.

The candidate must be single.

The post is designated under the Local Government and Other Officers' Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination before being appointed to the position.

Particulars and forms of application can be had from the undersigned.

Latest date for receipt of applications September 27th 1937.

IAS. H. ROTHWELL,
September, 1937. *Town Clerk.*

HOUNSLOW HOSPITAL, HOUNSLOW, MIDDLESEX.

APPOINTMENT OF RESIDENT MEDICAL OFFICER.

Applications are invited from registered medical practitioners (male) for:—

R.M.O. Salary £250 per annum, with full board, etc., and extras of approximately £150-£200 per annum. Previous Hospital experience essential. Appointment for an initial term of six months, with possibility of further extensions.

Applications, stating age, nationality, qualifications, and previous experience, together with copies of three recent testimonials, must reach the Secretary by Thursday September 23rd, endorsed "Appointment."

HORACE W. CARPENTER,
Secretary.

COUNTY BOROUGH OF SMETHWICK.

SENIOR ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Council invite applications from qualified medical men for the combined post of Senior Assistant Medical Officer of Health and Assistant School Medical Officer. The officer will rank next in seniority to the Deputy Medical Officer of Health.

The salary will be at the rate of £650 per annum, rising by £25 per annum to a maximum of £800 per annum. The officer will be required to reside at the Isolation Hospital, and a deduction of £150 per annum will be made in respect of board, residence and laundry.

The officer appointed will work under the general supervision and control of the Medical Officer of Health and School Medical Officer, and will be required to render assistance in the general work of the department. The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the selected candidate will be required to pass a medical examination.

Forms of application may be obtained from the Medical Officer of Health, Public Health Department, Hales Lane, Smethwick, to whom application endorsed "Senior Assistant Medical Officer of Health and School Medical Officer," and accompanied by copies of three recent testimonials, must be delivered not later than first post on September 25th, 1937.

Canvassing, directly or indirectly, will disqualify.

Council House, FRANK CHAPMAN,
Smethwick. Town Clerk.
September 6th, 1937.

CITY OF MANCHESTER.

MONSALL HOSPITAL FOR INFECTIOUS DISEASES. (600 Beds.)

APPOINTMENT OF TWO RESIDENT ASSISTANT MEDICAL OFFICERS.

The Public Health Committee invites applications from registered medical men for the post of Resident Junior Assistant Medical Officer (grade 2) at the Monsall Hospital.

Preference will be given to applicants who have held resident surgical and medical posts in a general hospital, and have taken the diploma in Public Health, or have special experience in bacteriology, and who have had previous experience in fevers.

The salary for the appointments is £250 per annum with board, residence and laundry in addition, subject to the Manchester Corporation conditions of service.

The appointments will be made in the first instance for a period of six months, renewable for a further six months, but not renewable thereafter.

Full information and forms of application may be obtained from the Medical Officer of Health, Sunlight House, Quay Street, Manchester, 3, and applications for the post must be received by him not later than September 25th, 1937.

F. E. WARBRECK HOWELL,
TOWN CLERK.

Town Hall, Manchester, 3.
September 6th, 1937.

HOSPITAL OF ST. CROSS, RUGBY. (120 Beds.)

Applications are invited for the post of ONE MALE RESIDENT MEDICAL OFFICER (three R.M.O.'s).

Salary to commence at the rate of £100 per annum for the first three months, £125 per annum for second three months, and at the rate of £150 per annum for subsequent months. Full board, washing, etc., provided.

Six months' appointment and eligible on completion of service for further extension of six months.

Candidates must be prepared to commence duties on Monday, October 4th, 1937.

The practice of the Hospital offers excellent opportunities for wide experience.

Certificates and other fees shared by R.M.O's.

Applications, stating age, nationality, and full details, with copies of three recent testimonials, to be sent to the undersigned.

(Signed.) W. COCKBURN,
Superintendent and Secretary.

ACTON HOSPITAL, W.3.

CASUALTY OFFICER (male, unmarried) required to commence duties October 1st, 1937, for a three months' appointment, with promotion to Resident Medical Officer for a similar period if approved. Salary £150 per annum, with board, residence and laundry.

Candidates must be fully qualified and registered. Application stating age, nationality and qualifications should be sent with copies of three testimonials, to the Secretary, and should arrive not later than first post Monday, September 20th.

DONALD C. D. SWORD,
Acton Hospital, Secretary.
Gunnersbury Lane, Acton, W.3.

BURY INFIRMARY (LANCS).
(127 Beds.)

RESIDENT SURGICAL OFFICER (MALE).

Applications are invited for the above post from those holding the Fellowship of one of the Royal Colleges of Surgeons.

The appointment is for a term of one year, with provision for an extension of a further twelve months, and the successful candidate will be expected to commence duties immediately.

Salary will be paid during the first twelve months at the rate of £300 per annum, and will be increased to £350 per annum during the second twelve months in the event of an extension of the appointment being agreed upon. In addition to this salary the post includes the provision of board, residence and laundry.

Applications, stating age, qualifications, and nationality, together with copies of three recent testimonials, are to be addressed to the undersigned, and should be forwarded as soon as possible endorsed "R.S.O."

H. WILKINSON,
Superintendent.

VICTORIA HOSPITAL, BURNLEY.
(150 Beds.)

HOUSE SURGEON (male)

Applications are invited for the above post, which will become vacant on September 30th next. The appointment is for six months in the first instance, at a salary of £150 per annum, together with board, residence and laundry. At the end of this period, reappointment may be applied for, and, if confirmed, the salary for the second six months will be at the rate of £200 per annum. Applications, with full details of qualifications and experience, and stating nationality, together with copies of recent testimonials, should be addressed to the undersigned forthwith.

J. E. WHEATCROFT,
Secretary.

ROYAL SURREY COUNTY HOSPITAL, Guildford.
(216 Beds.)

Wanted, October 1st, 1937, HOUSE SURGEON (male).

Six months appointment; recognized for F.R.C.S. Duties: General, Surgery, and Ophthalmic. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age and essential particulars, with copies of not more than three testimonials, to reach the Secretary-Superintendent not later than September 13th, 1937.

ROYAL SURREY COUNTY HOSPITAL, GUILDFORD.
(216 Beds.)

WANTED, OCTOBER 1st, 1937, HOUSE PHYSICIAN (Male).

Six months' appointment: duties House Physician and part-time Casualty Officer. Salary £150 per annum, with board, residence and laundry.

Applications, stating age and essential particulars, with copies of not more than three testimonials, to reach the Secretary-Superintendent not later than September 21st, 1937.

HARROGATE AND DISTRICT GENERAL HOSPITAL.
(132 Beds.)

Applications are invited for the post of ONE HOUSE SURGEON and ONE HOUSE PHYSICIAN to take up duties on October 1st for six months.

Salary to be at the rate of £150 per annum.

Candidates (male) must be of British nationality, unmarried, and possess registered qualifications.

Applications should be made as soon as possible on forms obtainable from the undersigned.

FRANK A. THROWER,
Secretary.

ROYAL LANCASTER INFIRMARY.
(140 Beds.)

ONE SENIOR, salary £175 per annum, and two JUNIOR HOUSE SURGEONS (male, British, single). Salary £130 per annum, with board, residence and laundry, required for October 1st, 1937. The appointment is for six months. Applications, with copies of testimonials, should be addressed to the Hon. Secretary, Royal Lancaster Infirmary, Lancaster.

VICTORIA HOSPITAL, BLACKPOOL.
(182 Beds.)

HOUSE SURGEON (male) required immediately. Appointment is for six months; salary at the rate of £200 per annum, with board, residence and laundry.

Applications, with copies of three recent testimonials, should be sent to the General Superintendent.

NEW KENT AND CANTERBURY HOSPITAL.
(181 Beds—4 Resident Appointments.)

Applications are invited for the post of HOUSE SURGEON (male) to the Special Departments (Ear, Nose and Throat, Ophthalmic and Genito-Urinary). Appointment is for six months, and duties will commence as soon as possible after September 6th. Salary £125 per annum, with board, residence, and laundry.

Applications, together with copies of recent testimonials should be forwarded immediately to the undersigned.

S. I. WARD,
Secretary.

SOUTHEND-ON-SEA GENERAL HOSPITAL
(235 Beds—7 Residents—Hon. Specialist Staff of 19 Members.)

Applications are invited for the post of HOUSE PHYSICIAN; duties to commence on October 1st, 1937. The appointment is for six months. Salary at the rate of £100 p.a., with board, etc., provided. Candidates must be registered (male) practitioners.

Applications, together with copies of two recent testimonials, should be sent to the undersigned not later than September 16th.

P. H. CONSTABLE,
Secretary.

KING GEORGE'S SANATORIUM FOR SAILORS, LIPHOOK, HANTS.
(Seamen's Hospital Society) For the Treatment of Pulmonary and Non-Pulmonary Tuberculosis.

ASSISTANT MEDICAL OFFICER (single, male or female) required as from October 15th for six months. Salary at the rate of £200 per annum in the first instance. Applications, with copies of not less than three testimonials, to be sent in on or before September 24th to the undersigned.

F. A. LYON,
Secretary, Seamen's Hospital Society, Greenwich, S.E.10.

Greenwich.
August 27th, 1937.

HARTLEPOOLS HOSPITAL, HARTLEPOOL.
(96 Beds.)

Applications are invited for the post of HOUSE SURGEON (male). Salary £175 p.a., with board, residence, and laundry.

The appointment is for six months (subject to renewal) Duties to commence September 1st.

Applications, stating age, nationality, and qualifications, should be addressed to the undersigned

NORMAN O. DEANS,
Secretary.

STOCKTON AND THORNABY HOSPITAL, STOCKTON-ON-TEES.
(140 Beds.)

SENIOR HOUSE SURGEON (male) required for a period of at least six months. Duties to commence on or about October 1st, 1937. Salary £175 per annum, with board, residence and laundry.

Candidates must be duly qualified and unmarried.

Applications, stating age, nationality, and experience, together with copies of three testimonials, to be sent to the undersigned.

J. WILKINSON,
Secretary.

THE CHESTER ROYAL INFIRMARY.
(225 Beds.)

Applications are invited for the post of HOUSE SURGEON (male), to take up duty October 1st, 1937. Salary £150 per annum, with board, lodging, and laundry. The appointment is approved in connexion with the M.S. (London University) and F.R.C.S. (Eng.) Examinations. Application list closes September 15th, 1937. Application forms may be obtained from:

W. H. GRACE, M.D., M.R.C.P.,
Hon. Sec. Medical Committee.

NOTTINGHAM GENERAL HOSPITAL.
(386 Beds.)

A HOUSE PHYSICIAN (male) is required at the above Institution. The appointment is for six months, with salary at the rate of £150 a year, with board, residence, and laundry. Applications, stating age, qualifications, and experience, together with copies of testimonials to be sent to the undersigned. Duties to commence on or about October 24th.

PETER M. MacCOLL,
House Governor and Secretary.

BRADFORD CHILDREN'S HOSPITAL.

HOUSE PHYSICIAN (lady) required October 1st. Fully qualified. Salary £150, with board, residence, and laundry.

Applications, with recent testimonials and stating age, no later than September 15th to

J. W. LONGLEY, Secretary-Supt.

ROYAL BUCKINGHAMSHIRE HOSPITAL, AYLESBURY.
(In course of extension to 120 Beds.)

Applications are invited for the following posts:
(1) SENIOR RESIDENT MEDICAL OFFICER. Salary £200 per annum.
(2) JUNIOR RESIDENT MEDICAL OFFICER. Salary £150 per annum.

Board, Residence and Laundry provided.

Candidates must be fully qualified and registered. Previous experience in Hospital appointment desirable, as well as in administration of Anaesthetics.

Senior appointment vacant October 1st, and Junior appointment vacant about October 30th, each for six months and renewable.

Junior eligible to fill Senior post when vacant.

Applications, stating age, qualifications and experience, with copies of not more than three testimonials, should be sent to the undersigned by September 20th.

F. G. DAWES,
Secretary.

NORTH STAFFORDSHIRE ROYAL INFIRMARY, STOKE-ON-TRENT.
(390 Beds.)

HOUSE SURGEON (GENERAL).

The Committee invite applications for the above post.

Salary at the rate of £150 per annum, with board, residence, and laundry.

The appointment will be made for six months, renewable.

Previous hospital surgical experience essential

Applications, stating age and experience, with copies of two recent testimonials, to be sent to the undersigned immediately.

By Order,
W. STEVENSON,
Secretary and House Governor.

August 30th, 1937.

NORTH STAFFORDSHIRE ROYAL INFIRMARY, STOKE-ON-TRENT.
(390 Beds.)

HOUSE SURGEON (ORTHOPAEDIC)

The Committee invite applications for the above post.

Salary at the rate of £150 per annum, with board, residence, and laundry.

The appointment will be made for six months, renewable

Previous hospital surgical experience essential and Orthopaedic experience desirable.

Applications, stating age and experience, with copies of two recent testimonials, to be sent to the undersigned immediately.

By Order,
W. STEVENSON,
Secretary and House Governor.

August 30th, 1937

PEMBROKE COUNTY WAR MEMORIAL HOSPITAL.
Haverfordwest, Pembrokeshire.
(64 Beds, to be increased to 100 Beds.)

RESIDENT HOUSE SURGEON.

Applications are invited for the post of Resident House Surgeon (male, unmarried) from duly qualified registered Medical Practitioners with previous resident experience, to commence on October 1st, 1937. Salary £200 per annum, with residence (private bungalow), board, and laundry.

Applications, stating age and accompanied by copies of not more than three recent testimonials, to be sent to the undersigned at the above address not later than first post Monday, September 13th, 1937

F. W. BARNETT,
House Governor and Secretary.

ST. MARY'S HOSPITALS, MANCHESTER.

Two HOUSE SURGEONS for the Whitworth St. West Hospital (Maternity) and one for the Whitworth Park Hospital (Gynaecological Dept.), each for a period of six months from November 1st next. Salaries at the rate of £50 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned on or before the 16th instant.

R. RATCLIFFE,
Secretary.

MANCHESTER EAR HOSPITAL, GROSVENOR SQUARE, ALL SAINTS.

The Board invite applications for the post of RESIDENT HOUSE SURGEON (31 beds). Salary £120 per annum. Candidates must be duly qualified and registered. Applications, with copies of four recent testimonials, to be forwarded to Mr. Reginald S. Milford (Hon. Sec., Manchester Ear Hospital), c/o Mr. W. J. Ellam, 17, Brazennose Street, Manchester, 2.

WOOLWICH AND DISTRICT WAR MEMORIAL HOSPITAL,
Shooters Hill, London, S.E.18.

General Hospital—112 Beds.

RESIDENT SURGICAL OFFICER.

The Board of Management invites applications from suitably qualified male candidates for appointment as RESIDENT SURGICAL OFFICER. Applicants must have special knowledge of surgery. This appointment (which is recognized by the Royal College of Surgeons of England for the six months' training required of candidates before admission to the Final Examination for the Fellowship) will be for twelve months, with effect from October 1st, 1937, at a salary of £175 per annum plus board, residence, and laundry, and subject to extension for a further twelve months at £200 per annum if approved by the Board of Management.

The closing date for the receipt of applications, which should be made on the prescribed form (obtainable from the undersigned), is September 18th, 1937, and short-listed candidates will be required to meet the Appointments Committee on Thursday, September 23rd, 1937, at 4.45 p.m.

R. S. G. HUTCHINGS,
Secretary.

THE PRINCESS BEATRICE HOSPITAL, EARL'S COURT, LONDON, S.W.5.
(General Hospital, 81 Beds.)

HOUSE PHYSICIAN AND CASUALTY OFFICER (male or female) required for a period of six months as from October 1st, 1937; also CASUALTY OFFICER AND OBSTETRIC HOUSE SURGEON (male or female) required for a period of six months as from October 1st, 1937.

The following details apply to both posts. Salary at the rate of £110 per annum, with board, residence, and laundry (together with £10 to cover all duties during the six months relating to private patients). Previous residence experience desirable but not essential. Full particulars may be obtained from the Secretary-Manager, by whom applications, with copies of three recent testimonials, should be received not later than 9 a.m., September 14th, 1937.

THE PRINCESS BEATRICE HOSPITAL, EARL'S COURT, LONDON, S.W.5
(General Hospital, 81 Beds.)

RESIDENT SURGICAL OFFICER (male) required for a period of six months in the first place from October 1st, 1937, eligible for re-election. Salary at the rate of £200 per annum, with board, residence, and laundry (together with £25 to cover all duties during the six months relating to Private Patients). Previous resident experience and F.R.C.S. essential.

Full particulars may be obtained from the Secretary-Manager, by whom applications, with copies of three recent testimonials, should be received not later than 9 a.m., September 14th, 1937

THE PRINCESS BEATRICE HOSPITAL, EARL'S COURT, LONDON, S.W.5.
(General Hospital, 81 Beds.)

Applications are invited for the post of HONORARY ASSISTANT OBSTETRIC PHYSICIAN AND GYNAECOLOGIST to the above hospital. Applicants must be Fellows of the Royal College of Surgeons of England. Full particulars may be obtained from the Secretary-Manager, by whom applications with copies of three recent testimonials, should be received not later than 9 a.m., September 14th, 1937.

ST. BARTHOLOMEW'S HOSPITAL

OFFICE OF OPHTHALMIC SURGEON

Notice is hereby given that a meeting of the Electors Committee will be held on Tuesday, October 19th, 1937, at 4 o'clock in the afternoon, to elect an OPHTHALMIC SURGEON to the Hospital.

Candidates, who must be Fellows of the Royal College of Surgeons of England, are required to lodge fifty copies of their applications and testimonials with the undersigned on or before Saturday, September 25th, 1937.

THOMAS HAYES,
August 21st, 1937. Clerk to the Governors

THE WILLESDEN GENERAL HOSPITAL,
Harlesden Road, N.W.10

Applications are invited from fully qualified and registered candidates (unmarried) for the appointment of a Resident Officer, to hold the appointment of CASUALTY OFFICER for a period of three months from October 1st, 1937, followed by a six months' appointment as HOUSE PHYSICIAN (total nine months).

Salary at the rate of £100 per annum.

Applications to be received by the Secretary not later than first post on Tuesday, September 14th, 1937.

August 27th, 1937.

WEST LONDON HOSPITAL,
Hammersmith, W.6. (239 Beds.)

Required: one HOUSE PHYSICIAN, one HOUSE SURGEON, and one HOUSE SURGEON (with Throat, Nose, and Ear duties). The duties of the House Physician include some work in the Children's Department, one House Surgeon will have some work in the Genito-Urinary Department, and the House Surgeon (with T., N., and E. duties) will also act as Resident Casualty Officer. These three appointments (males) are tenable for six months from October 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodgings, and laundry allowance. Candidates must be registered under the Medical Act.

Applications (which must be made on the printed forms obtained from me) must reach me not later than the first post on Thursday, September 16th. Selected candidates will be required to call upon such members of the medical staff as directed, to be in attendance at the Medical Council Meeting on Friday, September 24th, at 4.30 p.m., and the House Committee Meeting, at 5 p.m., the same day, when the appointments will be made.

H. A. MADGE,
Secretary.

WEST LONDON HOSPITAL,
Hammersmith Road, W.6. (239 Beds.)

Required, one RESIDENT ANAESTHETIST (male). The appointment is tenable until March 31st, 1938, subject to one month's notice on either side. Salary at the rate of £100 a year, with board, lodging, and laundry allowance.

Candidates must be registered under the Medical Act. Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Thursday, September 16th. Selected candidates will be required to call upon such members of the Medical Staff as directed; to be in attendance at the Medical Council Meeting on Friday, September 24th, at 4.30 p.m., and the House Committee Meeting, at 5 p.m., the same day, when the appointment will be made.

H. A. MADGE,
Secretary.

THE ROYAL CANCER HOSPITAL (FREE)
(Incorporated under Royal Charter),
Fulham Road, London, S.W.3.

Applications are invited for the post of ASSISTANT RADIUM THERAPIST (full-time).

Applicants must be registered medical practitioners, who hold a Diploma in Radiology.

The appointment will be for one year (subject to renewal) commencing October 1st, 1937, at a salary at the rate of £500 per annum.

Applications, to be made on a form which will be supplied by the Secretary, together with copies only of three recent testimonials, should be sent to the Secretary not later than the first post Monday, September 13th, 1937.

CLEMENT COBBOLD, Secretary

HOUNSLOW HOSPITAL, STAINES ROAD, HOUNSLOW, MIDDLESEX.

APPOINTMENT OF RESIDENT PHYSICIAN AND CASUALTY OFFICER

Applications are invited from registered medical practitioners (male) for:

Junior House Physician and Casualty Officer, salary £100 per annum with full board etc., and extras.

Applications, stating age, nationality, qualifications and previous experience, together with copies of three recent testimonials, should be forwarded to the Secretary, endorsed "Appointment."

ELIZABETH GARRETT ANDERSON HOSPITAL, EUSTON ROAD, N.W.1

Applications are invited from qualified women for the resident post of THIRD HOUSE SURGEON.

The appointment is for four months, with a possible extension for a further six months. Duties to begin October 1st, 1937. Salary at the rate of £5f per annum, with board, residence, and laundry. Further particulars can be obtained from the undersigned, to whom applications with copies of three testimonials should be sent on or before September 17th.

JEAN R. MURRAY,
Secretary

PRINCESS LOUISE KENSINGTON HOSPITAL FOR CHILDREN.
St. Quintin Avenue, W.10 (81 Beds.)

HOUSE PHYSICIAN (either sex) required for six months from October 1st, 1937. Salary at the rate of £120 p.a. for the first three months and £150 p.a. for the second three months, with board, residence, and laundry. Applications, with copies of three recent testimonials, must be submitted on a form to be obtained from the undersigned, and must reach him not later than Saturday, September 18th, 1937.

H. J. ELEY,
Secretary

THE HOSPITAL FOR SICK CHILDREN,
Great Ormond Street, London, W.C.1.

Applications are invited for the post of RESIDENT SURGICAL OFFICER, which becomes vacant on November 1st, 1937. Salary £200 per annum.

The appointment is tenable in the first instance for one year, but may be held for a period of two years, subject to annual re-election.

Candidates must be unmarried, possess a legal qualification to practise, and must have held a responsible hospital appointment at a general hospital.

Applications must be received by noon on Monday, September 27th, 1937, and candidates must be prepared to attend for interview at the hospital on Wednesday, October 6th, 1937, at 4.45 p.m.

Full details of the appointment and forms of application are obtainable from the undersigned.

HERBERT F. RUTHERFORD,
August, 1937 Secretary

THE HOSPITAL FOR SICK CHILDREN,
Great Ormond Street, London, W.C.1.

A RESIDENT HOUSE PHYSICIAN (male) and a RESIDENT HOUSE SURGEON (male) are required. Duties to commence on October 18th, 1937.

The appointments are tenable for six months. Salaries at the rate of £100 per annum.

Candidates must be unmarried, possess a legal qualification to practise, and have held a responsible appointment at a general hospital.

Applications must be received by noon on Monday, September 27th, 1937, and candidates must be prepared to attend for interview by the Joint Committee at 4.45 p.m. on Wednesday, October 6th, 1937.

Further particulars and forms of application are obtainable from the undersigned.

HERBERT F. RUTHERFORD,
August, 1937. Secretary

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, PLAISTOW, E.13.

HONORARY DERMATOLOGIST.

The Committee will shortly proceed to the appointment of an Honorary Physician in charge of the Skin Department. Attendance on one afternoon only each week. Applicants should be graduates of a University and Fellows or Members of the Royal College of Physicians, London.

Applications should be addressed before September 13th in the first place to the undersigned.

A. ERNEST WILKES,
August 23rd, 1937. Secretary.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL

Applications are invited for the posts of HOUSE SURGEONS (2, male, unmarried) for a period of six months commencing October 1st, renewable for a further period of six months on the recommendation of the Medical Board. £150 per annum, with full board, quarters, and laundry. Applicants should be registered Medical Practitioners.

Applications, with copies of testimonials, should be sent to the House Governor, 234 Great Portland Street, W.1, not later than September 14th.

DREADNOUGHT HOSPITAL, GREENWICH, S.E.10 (Seamen's Hospital Society)

Applications are invited for the non-resident post of RECEIVING ROOM OFFICER (male), for six months from October 18th. Salary £200 per annum, with lunch and tea. Hours of attendance week-days 9 a.m. to 5 p.m., Saturdays 9 a.m. to 12 noon. Applications, stating age, nationality, and experience of previous house appointments, accompanied by copies of testimonials, to be sent immediately to the undersigned.

F. A. LYON,
August 26th, 1937. Secretary

THE NATIONAL TEMPERANCE HOSPITAL,
Hampstead Road, N.W.1

Applications are invited for the following post—CASUALTY OFFICER (male). Salary £120 per annum, board, residence, and laundry allowance being provided.

The appointment is for a period of six months, as from October 1st. Preference will be given to those who have held resident posts. Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Wednesday September 15th, addressed to the Secretary.

NATIONAL TEMPERANCE HOSPITAL,
Hampstead Road, N.W.1.

Applications are invited for the post of HONORARY DERMATOLOGIST. Applicants should have the degree of Member of the Royal College of Physicians, or be graduates of a university. Twenty copies of applications, giving full particulars, with copies of three recent testimonials, should be sent to the Secretary by Wednesday, September 15th.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL), City Road, London, E.C.1.

REFRACTION ASSISTANT, L.C.C. SCHOOL DEPARTMENT

Applications are invited for the post of REFRACTION ASSISTANT to the L.C.C. SCHOOL DEPARTMENT to attend on Wednesdays and Fridays at 1.30 p.m.

Candidates must be registered Medical Practitioners. Salary will be at the rate of £160 per annum.

The Refraction Assistant will be appointed for a period of one year and will be eligible for reappointment.

Copy of Regulations governing the appointment can be obtained on application.

Applications, with testimonials, stating age and qualifications, must be received not later than October 2nd 1937

A. J. M. TARRANT,
Secretary.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL) City Road, London, E.C.1.

Applications are invited for the post of SENIOR RESIDENT OFFICER. Candidates must be Registered Medical Practitioners and must be prepared to begin duties on November 1st, 1937. Salary at the rate of £150 per annum with board and residence in the Hospital. Additional income will accrue to this post, the care of Private Patients being included in the duties.

In the event of the First House Surgeon being appointed, other Candidates are requested to state whether they would accept the office of First House Surgeon at the rate of £150 per annum: Second House Surgeon at the rate of £125 per annum, or Third House Surgeon at the rate of £100 per annum

The appointments are for a period of six months Applications, with testimonials stating age and qualifications must be received not later than September 30th 1937, by

A. J. M. TARRANT,
Secretary.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL) City Road, London, E.C.1

Applications are invited for the post of OUT-PATIENT OFFICER to attend on Wednesdays and Saturdays (mornings) each week.

Candidates must be registered Medical Practitioners. Salary will be at the rate of £100 per annum

The out-patient officer will be appointed for a period of one year, and will be eligible for reappointment. Copies of regulations can be obtained on application

Applications, with testimonials, stating age and qualifications, together with photograph, must be received by the undersigned not later than September 30th 1937.

A. J. M. TARRANT,
Secretary

KING EDWARD MEMORIAL HOSPITAL EALING (131 Beds)

Applications are invited for the posts of RESIDENT MEDICAL OFFICER (male) Six months' appointment with possibility of re-election for a further period Salary £275 per annum. with usual residential emoluments Applicants must have had good experience (at least two years) in House appointments

CASUALTY HOUSE SURGEON (male) (with which is combined the duty of deputising for the House Physician) Six months' appointment with possibility of re-election for a further period Salary £150 per annum with usual residential emoluments

Applications, stating age, experience, and qualification, and accompanied by copies of two recent testimonials to be sent to the undersigned immediately

R. A. MICKELWRIGHT,
House Governor

THE LONDON LOCK HOSPITAL, 283 Harrow Road, W.9.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (either sex) to the Female Departments. Candidates must be doubly qualified and duly registered The appointment is for six months, commencing October 13th. Salary at the rate of £175 p.a., with furnished rooms, full board and laundry. Preference will be given to candidates having previous obstetric experience

Applications, enclosing copies (only) of three recent testimonials, must be in the hands of the undersigned by first post on Thursday, September 30th, and from whom a copy of the Bye-Laws, relating to the appointment, or any further particulars, can be obtained.

Setpember 1st, 1937. J. F. MORTON,
Secretary.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, High Holborn, London, W.C.1.

Applications are invited for the appointment of THIRD HOUSE SURGEON (male) required for six months.

Salary at the rate of £100 per annum, with board, residence and laundry.

At the end of this period of six months the appointed candidate will be promoted to the next higher grade, then for a further six months as First House Surgeon and R.M.O. to the Staff, if recommended by the Medical Committee.

NOTE.—Candidates must be duly qualified medical practitioners, registered in this country, and must have had experience in Ophthalmology. Intending candidates should call upon the members of the Honorary Staff at the Hospital.

Applications, accompanied by copies of testimonials, are to be sent to the Secretary (from whom further particulars can be obtained) on or before September 30th, 1937.

THE ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Road, S.E.1.

RESIDENT CASUALTY AND ORTHOPAEDIC HOUSE SURGEON.

Applications are invited from qualified male practitioners for the post of Resident Casualty and Orthopaedic House Surgeon to work in the Out-Patient Department with care of Orthopaedic beds, vacant on October 1st, 1937, at £150 per annum. Candidates for this post should have held a previous appointment. The appointment is in the first instance for a period of six months.

Applications, with copies of testimonials, should be forwarded not later than September 23rd to the Secretary at the Hospital, from whom further particulars can be obtained.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, WIGAN. (180 Beds.)

Wanted for twelve months, commencing October 1st, 1937, RESIDENT MEDICAL and SURGICAL OFFICER and REGISTRAR. Candidates must have held previous Resident appointments at a Hospital. Preference will be given to those possessing the F.R.C.S. or M.S. Degree. The salary is at the rate of £250 per annum, with board, residence and laundry. Applications, giving proof of registration and not more than three testimonials, to be sent to the undersigned as soon as possible.

A. STANLEY BRUNT,
General Superintendent and Secretary.

August 12th. 1937.

ST. JOHN'S HOSPITAL, LEWISHAM, S.E.13.

Applications are invited from registered medical practitioners to fill the office of CLINICAL ASSISTANT to the Medical Officer in Charge of the Electrical and Massage Department. The successful applicant will be required to attend the hospital on three half-days a week at an honorarium of 50 guineas p.a.

Applications should be received by the undersigned, who will be pleased to give further particulars

J. G. GILBERT,
Secretary-Superintendent

ST. JOHN'S HOSPITAL, LEWISHAM, S.E.13.

Applications are invited for the post of MEDICAL REGISTRAR (male) to attend the Out-Patient Department on two half-days a week, namely Monday afternoons and Thursday mornings. Honorarium of 50 guineas will be paid.

Applications, with copies of testimonials, should be received by the undersigned, who will be pleased to give further information.

J. C. GILBERT,
Secretary-Superintendent

THE INFANTS HOSPITAL, Vincent Square, Westminster.

Applications are invited for the post of HOUSE PHYSICIAN (either sex). Salary at the rate of £100 per annum with board, residence and laundry. The appointment is for six months from November 1st.

Applications, with copies of testimonials, to be forwarded to the undersigned not later than September 30th.

ALFRED J. SMALL, Secretary.

THE INFANTS HOSPITAL, Vincent Square, Westminster

Applications are invited for the post of PATHOLOGIST. The appointment will be a full-time one. Salary at the rate of £700 per annum. An Assistant will subsequently be appointed.

Applications, with copies of not more than three testimonials, should reach the undersigned not later than October 8th.

ALFRED J. SMALL,
Secretary.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, WESTMORELAND STREET, MARYLEBONE, W.1.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer (male). The appointment is for a period of six months from November 1st, but may be renewed for a further period not exceeding six months. Salary at the rate of £150 per annum, with board, residence and washing.

Candidates, who must be duly registered medical practitioners, will not be expected to call on the Honorary Medical Staff, but should send their applications, with copies of three recent testimonials, to me at the Hospital, not later than Monday October 4th.

ROBERT G. E. WHITNEY,
Secretary.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, WESTMORELAND STREET, MARYLEBONE, W.1.

OUT-PATIENT MEDICAL OFFICER.

Applications are invited for the post of Out-Patient Medical Officer (non-resident, male). The appointment is for a period of six months from November 1st, but may be renewed for a further period not exceeding six months. Salary at the rate of £125 per annum. Candidates, who must be duly registered Medical Practitioners, will not be expected to call on the Honorary Medical Staff, but should send their applications, with copies of three recent testimonials, to me at the Hospital, not later than Monday, October 4th.

The Out-Patient Medical Officer will be required to assist the Honorary Medical Staff on five afternoons weekly, or four afternoons and one morning, as may be arranged.

ROBERT G. E. WHITNEY,
Secretary.

ELIZABETH GARRETT ANDERSON HOSPITAL, EUSTON ROAD, N.W.1.

The Managing Committee invite applications from qualified medical women for the appointment of:

HONORARY PHYSICIAN to the Children's Department Applicants must hold the M.D. degree, and be Members of the Royal College of Physicians.

Fifteen copies of applications, giving full particulars, with copies of three recent testimonials, should be sent to the undersigned before October 1st. 1937.

September 3rd, 1937 JEAN R. MURRAY,
Secretary.

ELIZABETH GARRETT ANDERSON HOSPITAL EUSTON ROAD, N.W.1.

Applications are invited from fully qualified medical women for the post of MEDICAL Registrar—Non-Resident. Honorarium £100 per annum.

Particulars can be obtained from the undersigned, to whom applications, with testimonials, should be sent before October 1st, 1937.

September 3rd, 1937 JEAN R. MURRAY,
Secretary.

ELIZABETH GARRETT ANDERSON HOSPITAL, EUSTON ROAD, N.W.1.

Applications are invited from fully qualified medical women for the posts of HONORARY CLINICAL ASSISTANTS in the Medical and Surgical Departments Particulars of the posts vacant can be obtained from the undersigned, to whom applications should be sent.

September 1st, 1937. JEAN R. MURRAY,
Secretary

KING GEORGE HOSPITAL, ILFORD (Nr. London). (207 Beds.)

HOUSE PHYSICIAN and RESIDENT ANAESTHETIST required for six months from October 1st. Previous experience desirable. Salary at the rate of £150 p.a.

Forms of application may be obtained from the undersigned, to whom they should be returned, duly completed, not later than Wednesday, September 22nd.

G. AUSTIN HEPWORTH,
Secretary and Superintendent.

THE SALVATION ARMY, The Mothers' Hospital, Lower Clapton Road, Clapton, E.5.

Applications are invited from Medical Women for the pos. of JUNIOR RESIDENT MEDICAL OFFICER—vacant October 1st, 1937. Salary £90 per annum with board, residence and laundry. The appointment is for six months.

Applications, with testimonials, must be sent to the Secretary on or before Monday, September 20th, 1937

EDGAR DIBDEN,
Secretary.

APPOINTMENTS—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C. 1 (in the case of Scottish appointments, with the Scottish Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE	CONTRACT PRACTICE—*(contd.)*	CONTRACT PRACTICE—*(contd.)*
ABERTYSSWG MEDICAL AID SOCIETY. *(Medical Officer.)*	LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL. *(Medical Officer.)*	MID-RHONDDA MEDICAL AID SOCIETY. *(Assistant Medical Officer.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C. 1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES *(All Friendly Society Appointments.)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney, N.S.W.	**VICTORIA** *(All Institute or Medical Dispensaries.)*	The Honorary Secretary, Victorian Branch, *British Medical Association*, Medical Society Hall, Albert St., East Melbourne, Victoria.	**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association "Shell House," 205, St. George's Terrace, Perth, Western Australia.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec. Queensland Branch, British Medical Association, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17.				

September 8, 1937 By Order of the Council. G. C. ANDERSON, *Secretary.*

CARDIFF ROYAL INFIRMARY
(Associated with the Welsh National School of Medicine).

HONORARY ASSISTANT OPHTHALMIC SURGEON REQUIRED.

Applications are invited for the vacancy arising in the Office of Honorary Assistant Ophthalmic Surgeon.

A candidate for the office must be "a Doctor of Medicine or Master of Surgery in one of the Universities of the United Kingdom, or a Fellow of one of the Royal Colleges of Surgeons in the United Kingdom, or a Fellow or Member of the Royal College of Physicians of London or a Fellow of one of the other Royal Colleges of Physicians in the United Kingdom, and he shall confine himself in his practice to his speciality."

Each candidate is required to send fifty copies of his application and testimonials (for circulation amongst the members of the Election Committee and Medical Board), stating age, qualifications, appointments held, etc., and endorsed "Honorary Assistant Ophthalmic Surgeon," *to reach the* undersigned on or before 12 noon on Tuesday, September 21st, 1937.

LEONARD D. REA,
September 3rd, 1937. Secretary.

BURSLEM HAYWOOD & TUNSTALL WAR MEMORIAL HOSPITAL, TUNSTALL, STOKE-ON-TRENT.
(66 Beds. Two Residents.)

Applications are invited for the post of SENIOR RESIDENT HOUSE SURGEON. Salary £175 per annum, with residence and laundry.

Surgical experience necessary; good opportunity for Surgical and Orthopaedic work. The appointment is for six months in the first instance, reappointment may be applied for.

Applications, stating age and experience, with names of three testimonials, to be sent to the undersigned immediately.

C. E. LOWNDES,
Secretary.

THE CHILDREN'S HOSPITAL, KING EDWARD VII MEMORIAL, BIRMINGHAM, 16.

RESIDENT MEDICAL OFFICER, ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited for the above posts. Candidates for the post of Resident Medical Officer must be qualified and registered, and have held a responsible Resident appointment at a teaching Hospital. The salary is at the rate of £175 per annum, with board, residence and laundry. The appointment is tenable for one year, as from *December 1st, 1937*, and the Officer is eligible for re-election for a second year.

Candidates for the post of Assistant Resident Medical Officer must be registered and qualified, and have had previous experience in the diseases of children. The duties may include assistance in the Pathological Department. The salary is at the rate of £125 per annum, with board, residence and laundry, and the appointment is tenable for one year as from November 1st, 1937.

Candidates should forward their applications, with Certificate of Registration, and any credentials which they may desire to offer, to the undersigned on or before October 2nd, 1937.

HAROLD F. SHRIMPTON,
September, 1937. House Governor.

PRESTON AND COUNTY OF LANCASTER ROYAL INFIRMARY.
(General Hospital, 405 Beds.)

Applications are invited for the post of HOUSE SURGEON (male or female) to the EYE, EAR, NOSE AND THROAT DEPARTMENT (Special Wards and Clinics).

Salary £150 per annum, with board, residence and laundry.

Applications, stating age, qualifications, and experience, together with copies of recent testimonials, to be forwarded as soon as possible to Mr. John Gibson, Superintendent and Secretary, Royal Infirmary, Preston.

September 6th, 1937.

THE GUEST HOSPITAL, DUDLEY.

(General Hospital—107 Beds—shortly to be increased to 160 Beds.)

The Resident Staff consists of a Resident Surgical Officer and two House Surgeons.

TWO HOUSE SURGEONS *(male) required.* One to enter upon his duties on October 1st, and the other to commence on November 2nd. Salary at the rate of £100-£130, according to experience, with furnished apartments, board and laundry. Candidates must be fully qualified and registered. Duties include Medical, Surgical, Ear, Nose and Throat, Ophthalmic, Orthopaedic, Gynaecological work, etc.

Applications, stating age, qualifications and experience, accompanied by copies of testimonials, to be sent to the undersigned.

H. RAYMOND HURST,
House Governor and Secretary.
September 3rd, 1937.

STANNINGTON CHILDREN'S SANATORIUM.
(310 Beds.)

RESIDENT ASSISTANT MEDICAL OFFICER (female).

Applications are invited from duly qualified medical women for the above post. Candidates must have held a resident hospital appointment since qualifying, and have had experience in the diagnosis and treatment of Tuberculosis and Bacteriology.

The Sanatorium deals with all forms of Tuberculosis, surgical and medical, in children, and is fully equipped for the work.

Salary £250-£300 p.a. according to experience, with full residential emoluments.

Applications, marked R.A.M.O., with copies of testimonials, should be sent not later than September 25th to the Secretary, Mr. ISAAC NIXON, 21, Eldon Square, Newcastle-upon-Tyne, 1.

(Advertisements continued on p. 59)

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Applicants must be medical practitioners of not less than 10 years' standing, and should have had experience of general practice. Age 35 to 50 years. Commencing salary of £1,250 per annum.

A superannuation scheme on a contributory basis will be arranged. According to the Articles of Association the appointment is an annual one, and is confirmed each year at the Annual General Meeting of the Society.

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NEAR KING'S CROSS, W.C.—WELL-ESTABLISHED Mixed-class PRACTICE. Receipts average £1,000 p.a., panel 1,034. Surgery accommodation on rental. Premium £2,000.—Apply, PEACOCK AND HADLEY, LTD., 67/68, Chandos Street, Strand, W.C.2.

SCOTLAND. — FASHIONABLE SUMMER resort on East Coast. Good general PRACTICE for sale. Average £900-£950. One and a half years' purchase. Established 40 years. Small panel. Seller retiring and retaining his house. Address, No. 306, B.M.A. House, Tavistock Square, W.C.1.

SHEFFIELD.—PANEL AND PRIVATE. CENTRAL. Panel 1,326. Receipts last year £1,957 including club £60, increasing. Premium 1½ years. Health reasons.—Address, No. 215, B.M.A. House, Tavistock Square, W.C.1.

W. OF ENGLAND.—COUNTRY TOWN PRACTICE. Over £1,300 a year in delightful part. Panel over 600. Cottage hospital. Good house, garden and garage for sale. Excellent surgical opening. All sports. Premium 2 years' purchase.—Address, No. 307, B.M.A. House, Tavistock Square, W.C.1.

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DETACHED MODERN HOUSE FOR SALE. Unique opportunity for a Doctor. Key position; best part of town on high ground. Lounge hall, two reception, breakfast room, four bedrooms, bathroom, every convenience. Garage. Nice garden. Near golf. Freehold £1,500. No agents.—BRAINTREE, 9, Pettits Lane Romford, Essex

HARLEY STREET AND DISTRICT.—A NUMBER of excellent CONSULTING ROOMS are available for full and part-time use at moderate rents. Particulars on application.—ELGOOD & CO., 10, Henrietta Street, Cavendish Square, W.1. Lang. 2601

LEATHERHEAD, SURREY. — SPACIOUS, modernised, easily-run HOUSE, perfect in planning for all requirements, ideal situation in centre of residential district. Suitable as nursing home or for reception of private patients. Low rent.—Cook, 64, Fitzjames Avenue, East Croydon

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PARK LANE (MARBLE ARCH.) DENTAL practitioner has one or two CONSULTING ROOMS to let. Rent from £200 p.a., includes use of waiting-room and usual services.—Address, No. 2627, B.M.A. House, Tavistock Square, W.C.1.

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THE SECRETARY.
BRITISH MEDICAL JOURNAL,
B.M.A. HOUSE, TAVISTOCK SQ.,
LONDON, W.C.I

APPOINTMENTS—Contd.

BECKETT HOSPITAL AND DISPENSARY, BARNSLEY. (153 Beds.)

Applications are invited for the post of RESIDENT SURGICAL OFFICER (male). Vacant October 7th. Fellowship degree of the Royal College of Surgeons, England, Edinburgh, or Dublin, will be deemed a recommendation.

Salary £300 per annum, together with board, residence and laundry.

Applications, stating age, qualifications and experience, with copies of testimonials, should be addressed to the undersigned immediately.

ARTHUR L. BOURNE,
September 7th, 1937. Secretary-Superintendent.

NEW SUSSEX HOSPITAL FOR WOMEN, WINDLESHAM ROAD, BRIGHTON.

Applications are invited from qualified medical women for the post of HONORARY MEDICAL REGISTRAR; also for the post of CLINICAL ASSISTANT *in the Eye Department.*

Applications, together with copies of three recent testimonials, to be sent on or before September 25th to Mr Percy F. Spooner, Secretary.
September 6th, 1937.

CRICHTON ROYAL, DUMFRIES.

HOUSE PHYSICIAN (male or female) required for the above Mental Hospital. Salary £200 per annum Yearly appointment. Excellent opportunities for postgraduate work. The Hospital provides facilities for treatment in all its aspects, and is equipped with up-to-date laboratories.

Applications, together with copies of three recent testimonials, to be forwarded to the Physician Superintendent, Crichton Royal, Dumfries.

THE BUCHANAN HOSPITAL, ST LEONARDS-ON-SEA. (103 Beds.)

HOUSE SURGEON (female) required to commence duties October 1st, 1937. Salary from £125 per annum according to experience.

Candidates must be duly registered medical practitioners, and applications, which should include three copies of recent testimonials, should be sent to the undersigned immediately.

FRANK HART,
Secretary

WREXHAM AND EAST DENBIGHSHIRE WAR MEMORIAL HOSPITAL. (124 Beds.)

RESIDENT HOUSE SURGEON (male or female) required for Special Departments (Aural, Ophthalmic, and Casualty), to commence duty on October 1st. Appointment is for six months. Salary £150 per annum, with board and lodging.

Applications, stating age, nationality, experience, and qualifications, to be sent to the undersigned, together with copies of three recent testimonials, immediately.

LESLIE SPENCER,
August 30th, 1937. Secretary.

THE ROYAL CRIPPLES HOSPITAL, BIRMINGHAM.

Applications are invited for the post of RESIDENT HOUSE SURGEON (male), vacant September 1st, 1937. Salary £200 per annum. The appointment, which is for a period of six months, is renewable on the discretion of the Medical Board, and is terminable by one month's notice on either side.

Candidates must be unmarried, and preference will be given to those with previous experience in General and Orthopaedic Hospitals.

Applications, with copies of three recent testimonials, to be sent at once to the General Secretary, Royal Cripples Hospital, 80, Broad Street, Birmingham.

HOSPITAL OF ST. JOHN & ST. ELIZABETH, 60, Grove End Road, N.W.8.

Applications are invited for the post of RESIDENT HOUSE SURGEON (male). The post is recognized for the degree of M.S. London University. *The appointment will be for six months* from November 1st, 1937. Salary at the rate of £75 per annum, with full board.

Applications, together with copies of three testimonials, should reach the undersigned on or before Tuesday, September 28th.

F. DUDLEY HOBBS, B.A.,
Secretary.

GENERAL INFIRMARY, SALISBURY. (*Voluntary Hospital, 191 Beds, now in course of extension to 225 Beds.*)

HOUSE SURGEON (male) required to commence duty at the end of September.

The appointment is for six months, with the right of applying for reappointment for a further period of six months. Candidates must be unmarried, fully qualified and registered.

Salary £125 per annum, with board-residence.

Applications, with copies of testimonials, to be *sent to the House Governor and Secretary, from* whom a copy of the rules may be obtained.

SCARBOROUGH HOSPITAL, YORKSHIRE. (140 Beds.)

Wanted, TWO FEMALE HOUSE SURGEONS, one to take up duties on October 18th, 1937, and one to take up duties on November 1st, 1937. The appointment to be until April 30th, 1938. Salary at the rate of £150 per annum, together with board residence, laundry, etc.

Applications, stating age and experience, together with copies of not more than three recent testimonials, to be sent to the Hon. Secretaries no later than the first post on September 21st, 1937

DONCASTER ROYAL INFIRMARY. (185 Beds.)

HOUSE PHYSICIAN (male) required immediately. Six House Surgeons are resident. Salary at the rate of £175 per annum, with residence, board and laundry. This large industrial area offers excellent opportunities for gaining experience.

Applications, accompanied by not more than three testimonials, to be sent to the undersigned immediately.

R. LANCASTER,
Secretary-Superintendent.

EAST SUFFOLK AND IPSWICH HOSPITAL. 350 Beds—8 Residents.

WANTED, September 15th, HOUSE SURGEON (male, British) to the Ear, Nose and Throat Surgeon and to an Assistant General Surgeon. Salary at the rate of £144 per annum with board, apartments and laundry.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, to be sent to the undersigned immediately

ARTHUR GRIFFITHS,
The Hospital, Ipswich. Secretary
September 11th, 1937.

KENT COUNTY OPHTHALMIC AND AURAL HOSPITAL, MAIDSTONE.
(109 Beds.)

Applications are invited for the posts of SENIOR and JUNIOR OPHTHALMIC HOUSE SURGEONS, which become vacant on October 1st next. Each appointment is for six months. Candidates must be duly qualified and registered medical practitioners, single, and of British birth and nationality, and should have experience of refractions. Salary at the rate of £250 and £200 per annum respectively, with board, residence and laundry. The Hospital is recognized by the Examining Board for the D.O.M.S.

Applications, stating age and qualifications, together with copies of not more than three testimonials, should be sent to the undersigned.

JOHN W. STRICKLAND, Secretary.

HOVE GENERAL HOSPITAL, HOVE.
(50 Beds.)

Applications are invited for the appointment (vacant October 1st) of SENIOR RESIDENT MEDICAL OFFICER (male); salary £150 p.a., with board, apartments and laundry. The appointment offers excellent opportunities for surgical experience.

Applications, stating age and qualifications, together with three recent testimonials, to be forwarded to the undersigned as soon as possible.

K. C. BOOKER,
Secretary-Superintendent.

HOVE GENERAL HOSPITAL, HOVE.
(50 Beds.)

Applications are invited for the appointment immediately of JUNIOR RESIDENT MEDICAL OFFICER (male); salary £120 p.a., with board, apartments and laundry. The successful applicant will be eligible to apply for the senior post advertised above.

Applications, stating age and qualifications, together with three recent testimonials, to be forwarded to the undersigned as soon as possible

K. C. BOOKER,
Secretary-Superintendent.

HARLOW WOOD ORTHOPAEDIC HOSPITAL, near Mansfield, Notts. (155 Beds.)

Applications are invited for the post of HOUSE SURGEON (male). The salary is at the rate of £200 per annum, with board, residence and laundry. The duties may include attendance at the associated Hospitals and Out-patient Clinics, and commence on November 1st, 1937. The appointment will be for six months, and may be renewed for a further six months.

Applications, stating age and experience, with copies of testimonials, should be received by the Secretary not later than September 22nd, 1937.

JERSEY GENERAL HOSPITAL AND POOR LAW INFIRMARY.

Applications are invited for the post of HOUSE SURGEON, duties to commence on October 1st next. The appointment is for six months, at a salary of £175 per annum, subject to reappointment. Board, residence and laundry are provided.

Applications, stating age, nationality and qualifications, with copies of recent testimonials, should be addressed to the Secretary-Accountant, from whom all further particulars may be obtained.

H. S. PLYMEN,
Secretary-Accountant.

THE LADY CHICHESTER HOSPITAL, HOVE, FOR FUNCTIONAL NERVOUS DISEASES.
(60 Beds.)

SENIOR HOUSE PHYSICIAN required. Six months' appointment at £100 per annum all found. Also JUNIOR, at £50 per annum. Valuable experience for Diploma in Psychological Medicine. Duties to commence immediately. Applications, with testimonials, to be sent to the Secretary, Mr. P. F. Spooner, 33, West Street, Brighton.

SWANSEA GENERAL AND EYE HOSPITAL.

Applications are invited for the post of LOCUM HOUSE SURGEON to the E.N.T. and Ophthalmic Departments for a period of six to eight weeks, commencing September 14th. Salary £5 5s. per week, with board, residence and laundry.

Applications, stating age, qualifications, experience, and nationality to be forwarded to the Secretary-Superintendent.

BIRMINGHAM MATERNITY HOSPITAL.

HOUSE SURGEON (man or woman) wanted for six months from November 1st, 1937, (3 months on District and 3 months in Hospital). Salary to be at the rate of £75 per annum.

Applications, with full particulars and copies of testimonials, to be sent not later than September 27th to HUGH C. ASTON, 45, Newhall Street, Birmingham 3.

THE ROYAL INFIRMARY OF EDINBURGH.

Applications are invited for appointment as CLINICAL ASSISTANT (Non-Resident) in the Ear, Nose and Throat Department, which will shortly become vacant. Candidates must be duly qualified and registered.

A salary at the rate of £100 per annum is attached to the post, for candidates with suitable experience, and which affords valuable experience for graduates wishing to take the Fellowship of the Royal College of Surgeons of Edinburgh with special subject.

Applications should be addressed to the undersigned at the Royal Infirmary.

HENRY MAW,
Secretary and Treasurer.

WARNEFORD GENERAL HOSPITAL.
(164 Beds.)
LEAMINGTON SPA.

Required a HOUSE PHYSICIAN, also a HOUSE SURGEON. The appointments are for six months each. Salary £150 per annum, with board and laundry. The Hospital is recognized by the Royal College of Surgeons of England under paragraphs 21 and 23 of the Fellowship regulations.

Applications for the above posts from qualified registered Medical Practitioners (single men only) should be sent, together with three recent testimonials, to the undersigned on or before Monday, September 20th, 1937.

EDWARD L. WIRGMAN,
House Governor and Secretary.

WARNEFORD GENERAL HOSPITAL, LEAMINGTON SPA.

CASUALTY OFFICER and JUNIOR HOUSE SURGEON (combined post) required. Duties to commence at once. Six months' appointment, renewable. Salary £150 per annum, with board, residence and laundry.

Candidates must be qualified, registered under the Medical Acts and unmarried.

Applications, stating age and experience, together with copies of recent testimonials, should be sent to the undersigned.

EDWARD L. WIRGMAN,
House Governor and Secretary.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

Applications are invited for the post of HOUSE PHYSICIAN. The appointment will be for six months from October 1st, 1937, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 per annum, with board residence and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications; stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Tuesday, September 21st.

J. A. BEARDSALL,
Secretary-Superintendent.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

Applications are invited for the post of RESIDENT ANAESTHETIST and EMERGENCY OFFICER (male). The appointment will be for three months. Salary at the rate of £130 per annum, with board, residence and laundry. Candidates, who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four recent testimonials, to the undersigned on or before Monday, September 13th.

J. A. BEARDSALL,
Secretary-Superintendent.

MINEHEAD & WEST SOMERSET HOSPITAL, MINEHEAD, SOMERSET.

Applications are invited for the post of RESIDENT HOUSE SURGEON (male or female) to this Hospital. Duty to commence on October 1st, 1937. Appointment for a period of six months. Salary £150 per annum, with board, residence and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than September 25th, 1937.

W. H. P. RODDA,
Secretary.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.

Wanted, an ASSISTANT MEDICAL OFFICER (male) for the Crossley Sanatorium, Delamere Forest, Cheshire (110 Beds). Salary £200 per annum, with board, apartments and laundry. Candidates must be registered.

Applications, stating age, with copies of testimonials, to be sent not later than September 21st to W. HUNT, Secretary, Hardman Street, Manchester, 3.

THE DEWSBURY AND DISTRICT GENERAL INFIRMARY, DEWSBURY.

The Post is a recognised one by the Royal College of Surgeons (England).

Applications are invited for the post of SENIOR HOUSE SURGEON (male). Salary £200 per annum, with board, residence and laundry.

The Infirmary is a new Voluntary Hospital of 100 Beds, and has the usual Special Departments, with Visiting Consulting Specialists in attendance.

Applications, stating age and hospital experience, together with copies of recent testimonials, to be sent as immediately as possible to my office.

FRED SMITH,
Secretary-Superintendent.

WEST SUFFOLK GENERAL HOSPITAL, BURY ST. EDMUND'S.
(112 Beds.)

Applications are invited for the post of HOUSE SURGEON. Duties include charge of the Surgical beds. Salary £180 per annum, with board, lodging and laundry.

One other Resident Medical Officer.

Applicants must be registered Practitioners. Applications, stating age, experience and nationality, with three copies of three recent testimonials, to be sent to the Secretary. Applications to be in by September 21st, 1937. The vacancy occurs October 1st, 1937.

E. E. HARDWICKE,
Secretary.

September 4th, 1937.

CLAYTON HOSPITAL, WAKEFIELD.

There is a vacancy for one HOUSE SURGEON (male, British) from September 22nd for six months (renewable). Salary £200 p.a., plus board and laundry.

Applications, with copies of two testimonials, to be sent to the undersigned immediately.

T. F. W. MACKEOWN,
Secretary.

GLASGOW CORPORATION MENTAL Hospitals Service. JUNIOR ASSISTANT PHYSICIAN wanted for Hawkhead Mental Hospital. Salary commencing £325, with board, apartments and laundry. The Hospital is in outskirts of Glasgow and offers excellent facilities for research work. Apply to Medical Superintendent, Hawkhead Mental Hospital, 510, Crookston Road, Glasgow, S.W.2.

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5. LINCOLNSHIRE.—PARTNERSHIP, HALF-SHARE in good town practice. Panel 1,200. Receipts £2,450. Premium 2 years' purchase. House on lease. £68 p.a.
6. LONDON, S.E.—Mixed PRACTICE. Panel 577. Receipts about £750 p.a. Premium 1½ years. House (10 rooms), sale or let. Only English or Scot.
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11. W. OF ENGLAND.—OPHTHALMIC PRACTICE. Receipts about £1,250 p.a. Premium £1,500. Good house for sale.
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LANCS. — TOWN. OLD-ESTAB. Average £1,300 p.a. Select panel of 807. Scope for Surgery and X-Ray. Premium 1½ years' purchase. Nice house on rental, £70 p.a.—11.

LONDON, S.W.—AVERAGE £1,600 p.a. Panel 700. Old-estd. Premium £2,600. Accommodation on rental.—12.

LONDON, S.E.—RESIDL. AVERAGE £700 p.a. Panel 600 Old-estd. Fees 3/6 to 10/6. Premium 1½ years' purchase. Corner house, 5 bed., etc., £1,200, or offer.—13.

KENT.—WITHIN EASY REACH OF town. Nucleus £4/500, with ample scope. Estd. only 20 months. Panel now 220. Premium only £500 incl. equipment. Suitable house to rent.—14.

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Practices and Partnerships for Disposal.

1 S. MIDLANDS.—PARTNERSHIP (with succession in three years) in old-established Practice in good town. Receipts, 1936, £1,433. Panel about 900. Visits 5/- upwards, medicine extra. Premium one-half share (including one-half share of fittings, drugs, etc., etc.), £1,400.

2 CHANNEL ISLANDS.—Well-established mixed-class PRACTICE averaging nearly £1,250 p.a. No midwifery. Good house (6 bedrooms, etc.), in best residential part, for sale or rent. Good introduction. Premium £2,000. Hospital.

3 S. WALES.—Old-established PRACTICE, £765 p.a., in country district near coast. Appointments worth nearly £100 p.a. and panel about 360. Specially built house (5 bedrooms, etc.), with garage and garden, for sale. Very good prospects of increase. Premium one and a-half years' purchase.

4 NEW ZEALAND.—S. ISLAND.—Old-established PRACTICE in prosperous coast town. Receipts average £1,450 p.a. Appointments about £450. Suitable house (3 bedrooms) for sale. Also interest in X-ray plant. Surgery on lease. Rent 30/- per week. Premium £1,250.

5 S. MIDLANDS.—Old-established PRACTICE averaging over £1,060 p.a. in rapidly growing and prosperous market town. Panel 1,318. Choice of houses. Ample scope. Premium two years' purchase.

6 EASTERN COUNTIES.—PARTNERSHIP in good middle-class Practice, £2,450 p.a., in county town. Panel 1,200. Good house (5 bedrooms), in perfect condition, to rent. Premium one-half share two years' purchase.

7 S. MIDLANDS.—PARTNERSHIP in Practice nearly £6,000 p.a., in residential country district. Panel about 3,000. Visits 3/6 to £1 1s. House, with garage and garden, to rent. Share worth £800—£1,000 p.a. at two and a-quarter years' purchase. Short preliminary Assistantship.

8 MIDLANDS.—PARTNERSHIP in increasing Practice in pleasantly situated country town. Good appointments and panel. Visits 3/6 to £1 11s. 6d., medicine extra. Suitable house obtainable. Incoming partner must be good surgeon—English or Scottish—aged 30-35. Small well-equipped hospital. Share worth about £1,500 p.a. at two years' purchase.

9 NORTHERN IRELAND.—Middle and working-class PRACTICE, over £900 p.a., in suburb of important seaport. Panel nearly 1,200. Visits 2/6 to 10/-, without medicine. Well-situated house (5 bedrooms), garage, etc., to rent. Scope for increase. Premium £1,400.

10 S. MIDLANDS.—PARTNERSHIP in steadily increasing Practice, £2,500 p.a., in good town. Panel 1,846. Good house (3 bed and dressing rooms), to rent. Partner should be aged about 35, experienced in gynaecology, and preferably hold the F.R.C.S. or M.C.O.G. Premium one-third share two years' purchase.

11 N.E. COAST.—Old-established and easily worked middle-class PRACTICE, over £1,150 p.a., in seaport town. No panel. Residence facing sea, for sale. Premium (to include furnishings and fittings of consulting rooms, small X-ray plant, etc.), £1,000.

12 LONDON, N.W.—Increasing PRACTICE in growing district, 30 minutes from Piccadilly. Receipts last year, £764 (new appointment value £40 p.a. not included). Panel 560. No midwifery. Semi-detached double-fronted freehold corner residence (4 bedrooms), garage and garden, for sale. Scope. Premium £1,450.

13 KENT AND SUSSEX BORDER.—Old-established and steadily increasing PRACTICE in beautiful country district. Cash receipts, 1936, £628. Panel over 500. House (4 bedrooms, etc.), garage and good garden, main drainage, etc., to rent. Scope. Premium two years' purchase.

14 ISLE OF WIGHT.—PARTNERSHIP in well-established middle-class Practice of nearly £2,650 p.a. Panel 1,200. Visits 3/6 to £1 1s., medicine extra. House with 4 bedrooms, etc., garage and garden. Good society and sport of all kinds. Premium one-half share two years' purchase.

15 N.E. COAST.—PARTNERSHIP (after preliminary Assistantship) in mixed Practice, about £3,300 p.a., in seaport town. Panel 2,600. A suitable house could be obtained. One-third share at first to suitable man at two years' purchase (or near offer), with option to increase to two-fifths in three years and to four-ninths later.

16 LONDON, W.1.—DEATH VACANCY.—SPECIAL PRACTICE in SKIN DISEASES. Cash receipts year ended 31st March, 1937, £1,815. Consultations two and three guineas. Accommodation for professional and residential purposes, if required, to rent.

17 HOME COUNTY.—PARTNERSHIP in practice averaging over £2,350 p.a. in attractive country district near the coast. Panel 1,400. Good house (5 bedrooms, etc., etc.) in excellent state of repair, with garage and large garden, to rent at £85 p.a. Premium one-half share £2,500.

18 S.W. OF ENGLAND.—PARTNERSHIP in practice averaging over £2,050 p.a. in beautiful country district. Panel 920. Charming old two-storied house (7 bedrooms) with garage and good garden, in all about two acres, to rent at £52 p.a. Premium one-half share two and a-quarter years' purchase to include share of book debts, drugs, surgery fittings, etc., etc.

19 S. COAST.—Well-established good middle-class non-dispensing PRACTICE in residential town and health resort. Receipts 1936, £940. No panel or midwifery. Fees mostly 10/6 and 7/6. Nice house (4 bedrooms) with garage and garden, for sale. Scope. Premium £1,500.

20 S.E. COAST.—PARTNERSHIP in old-established Practice, averaging £4,100 p.a. in growing resort. Panel 3,000. Modern corner house (3 bedrooms, etc.) for sale or to rent. Premium for one-fourth share, two years' purchase.

21 W. OF ENGLAND.—Non-panel PRACTICE in an inland watering place. Cash receipts average £830 p.a. House or flat could be obtained. Premium one and a-half years' purchase.

22 ISLE OF WIGHT.—Well-established PRACTICE about £1,200 in seaside resort. Panel over 725. Good corner house (5 bedrooms) with central heating, garage and small garden for sale or rent. Good scope. Premium £2,250.

23 SUFFOLK.—Old-established country PRACTICE about £1,100 p.a. Panel 832, returning for 1936, £582. Good house (3 bedrooms), garden and garage. Rent £40 p.a. Premium one and three-quarter years' purchase or near offer.

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Practices and Partnerships for Disposal (continued).

24 LONDON, E.—Old-established PRACTICE of £1,793 p.a. in populous district. Panel 2,500. House (6 bedrooms, etc.), to rent. Premium two years' purchase.

25 S. OF ENGLAND.—PHYSIO-THERAPY PRACTICE of £1,000 p.a. in an important town. Fees, 10/6 to £1 1s. Premium £1,250 (including certain equipment).

26 N. WALES WATERING PLACE.—PARTNERSHIP in old-established Practice of £6,000 p.a. Panel 2,600. Nice flat with garage. Welsh must be spoken. Premium for one-fifth share one and a-half years' purchase.

27 E. ANGLIA.—PARTNERSHIP in an old-established Practice in country district. Cash receipts year ended 30th June, 1937, £3,321. Panel 1,400. House to rent at £30 p.a. One-third or two-fifths share at first.

28 E. ANGLIA.—PARTNERSHIP in an old-established Practice of £2,800/£2,900 p.a. in prosperous country district. Panel 1,530. Double-fronted house (6 bedrooms), garage and garden. Freehold for sale or to rent. Premium for one-third share one and three-quarter years' purchase.

29 LONDON, W.C.—Old-established mixed PRACTICE, £2,360 p.a., in desirable part. Panel over 3,000. No midwifery. Well-situated residence to rent on lease. Great scope. Premium, to include lease, goodwill, some furniture and fittings, etc., £5,000.

30 LONDON, E.—Middle-class PRACTICE of over £2,400 p.a., in outlying district. Panel 2,870. House in good repair. Garage and garden. Freehold for sale. Premium two and one-quarter years.

31 W. OF ENGLAND.—PARTNERSHIP in old-established Practice of £6,600 p.a. in a beautiful country district. Panel 4,500 and appointments worth £1,325 p.a. Centrally situated house (5 bedrooms), for sale. Premium for one-fifth share, £2,750.

32 MIDDLESEX.—PARTNERSHIP (with preliminary Assistantship) in a steadily increasing Practice in a very good residential district on the Thames. Cash receipts, 1935, £4,844; 1936, £5,465; 1937, £6,264. Panel 2,700 and appointments £727 p.a. Premium for one-fifth share two and a half years' purchase

33 LONDON, S.E.—PRACTICE of about £500 p.a. Panel 533. House with surgery accommodation to rent, or rooms next door. Premium one year's purchase, or offer.

34 W. OF ENGLAND.—Country PRACTICE doing about £1,400 p.a., in picturesquely situated village. Panel over 600. Good stone-built slate roof house (4 bedrooms, dressing-room, etc.), garage and charming garden, about ¼ acre, for sale. Hunting, fishing, shooting. Premium £2,800.

35 LONDON, W.2.—Old-established PRACTICE in residential district. Receipts last year, £1,440. Panel 1,000, about. Good house to rent at £130 p.a. Premium two years' purchase.

36 MID-DEVON.—Increasing Country PRACTICE about £800 a year, in delightful part. Appointments and panel return over £350 p.a. Excellent house (6 bedrooms, dressing-room, etc.), in 1½ acres of grounds. Separate surgery accommodation. Electric light and main water. Garage and stabling. Freehold for sale. Scope. Premium £1,200.

37 DEATH VACANCY.—SOUTH WALES.—Panel and Contract PRACTICE returning about £1,550 p.a. Large compact residence (6 bedrooms), in excellent condition, with two garages and pleasure and kitchen gardens, to rent.

38 LONDON, E.15.—Old-established PRACTICE averaging £1,670 p.a., in populous suburban district. Panel 1,990. Small house in excellent repair. Rent £50 p.a. Good scope. Premium two and a quarter years' purchase.

39 S. MIDLANDS.—PARTNERSHIP (short preliminary Assistantship) in Practice, over £5,000 p.a., in first-rate town. Panel nearly 5,000. House with 4 bedrooms, garage and garden, to rent. One-fifth share at first at two years' purchase.

40 LONDON, S.E.—Old-established and increasing PRACTICE of £2,500 p.a. in suburban district. Panel 2,000. Detached double-fronted house (5 bedrooms, etc.), garage and garden. Freehold for sale. Premium two years' purchase.

41 S. MIDLANDS.—Old-established PRACTICE of over £1,000 p.a. in beautiful country district on Bucks and Northants borders. Panel 536. Attractive house (6 bedrooms, etc.), Freehold for sale, or rent. Premium two years' purchase.

42 S. OF ENGLAND.—PRACTICE of about £300 p.a. carried on by a medical woman in a cathedral town. Panel 100. House (2 bedrooms, etc.), to rent. Premium £500.

43 AUSTRALIA.—Old-established PRACTICE of £1,400 p.a., in agricultural township. Good house (3 bedrooms, etc.), for sale. Premium £1,600 and £250 for X-ray plant.

44 MIDLANDS.—Old-established PRACTICE in beautiful country district. Cash Receipts last year £1,280, including appointments worth about £60, and a panel between 650 and 700. Visits 2/6 to £1 1s. without medicine. Nicely situated house (4 bedrooms, dressing-room, etc.), with nice garden and two garages. Rent about £80 p.a. Premium two years' purchase.

45 N. WALES BORDER.—PARTNERSHIP (with early succession) in old-established County Practice, about £2,500 p.a., in important town. No panel. Surgery premises could be purchased or rented. The private residence is available if required. A share up to one-half would be sold at first with early succession. Premium two years' purchase.

46 LONDON, S.W.1.—SPECIAL PRACTICE for catarrhal conditions, nasal catarrh, hay fever, asthma, etc., etc., about £1,000 p.a., in commanding position in *Grosvenor* Place. Consultations 1-3 guineas. Special terms for series of treatments. Excellent accommodation to rent at £100 p.a., on lease. Scope. Premium one and a-half years' purchase.

47 SEASIDE TOWN WITHIN AN HOUR OF LONDON.—Very old-established PRACTICE. Receipts average £625 p.a. Panel about 300. Nice detached house (5 bedrooms), with garage and garden, for sale or rent. Good scope. Premium £1,000.

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B. EDINBURGH.—Receipts £800. Panel 1,000. Suitable house for sale. *Premium*—Practice and house, £2,200.

C. LONDON, N.—CONSULTING ROOMS with SMALL NUCLEUS in large residence along with, if required, part of the house. Excellent opportunity for Doctor to build up practice. Moderate rent.

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LINCOLNSHIRE.—PARTNERSHIP in good mixed-class Practice in pleasant town. Average cash receipts £2,450 p.a. Panel 1,200. Appointments £190 p.a. Scope. Nice house in good condition, 2 reception, 5 bedrooms, garden. Rent £68 p.a. Premium—half share—2 years' purchase.—No. 1013.

MANCHESTER.—Old-established Private and Panel PRACTICE. Cash receipts last year £1,222. Panel 800. Scope. Good house, 2 reception, 5 bedrooms, 2 Professional rooms. Premium—Practice—1¼ years' purchase.—No. 1,009.

DERBYSHIRE.—Old-established mixed-class PRACTICE, near beautiful country and within easy reach of large town. Average cash receipts £1,100 p.a. Panel 970 and transferable appointments £200 p.a. Scope. Nice detached house, 2 reception, 6/7 bedrooms, garage and large garden. Freehold. Premium—1¼ years' purchase.—No. 991.

MANCHESTER.—TWO PARTNERS required in sound old-established mixed Panel and Private Practice. Average cash receipts £5,500 p.a. Panel over 4,500 and appointments £760 p.a. Good houses available to rent. Premium—3/9th or 2/9th—2 years' purchase (to include share of book debts, drugs, etc.).—No. 1001.

NORTH WALES.—PARTNERSHIP (after short Assistantship) in old-established middle-class Practice in pleasant Coast town. Knowledge of Welsh desirable. Cash receipts last year £6,717. Panel 2,600. Well-equipped Hospital. Incoming partner would be required to live in flat. Premium —1/5th share—1¼ years' purchase.—No. 988.

CUMBERLAND.—Old-established and practically unopposed Seaside and Country PRACTICE in delightful district. Cash receipts last year £868. Panel 225 and transferable appointments £255 p.a. Excellent house, garage and garden. For sale, freehold. Premium Practice—1¼ years' purchase.—No. 998.

NEAR MANCHESTER.—Very old-established mixed-class PRACTICE capable of much increase owing to building developments. Cash receipts last year £1,006. Panel 470. Nice detached house, 2 reception, 5 bedrooms, garage and large garden. Separate entrance to surgery. Price £650. Premium—Practice—1 year's purchase. Vendor retiring.—No. 875.

LANCS TOWN.—Very old-established mixed Panel and Private PRACTICE; in present hands 35 years. Cash receipts last year £916. Panel 1,223. Scope. For sale, or would rent on lease. Premium—1¼ years' purchase. Vendor retiring.—No. 1,004.

CHESHIRE/DERBYSHIRE BORDER.—Old-established PRACTICE in Country district. Cash receipts last year £700 (increasing). Panel 862. Great scope. Excellent house, 2 reception, 4 bedrooms, 3 Professional rooms (separate entrance), garage and good garden. Premium—£1,000.—No. 989.

LANCS TOWN.—Old-established Panel and Private PRACTICE in large town. Average cash receipts £1,360 p.a. Panel 900. Scope. Good house, 2 reception, 4 bedrooms, garage. Rent £60 p.a. Expenses low. Premium—1¼ years' purchase.—No. 987.

SUFFOLK.—Old-established Country PRACTICE, practically unopposed. Cash receipts last year £1,081. Panel 835 (yields £582 p.a.). Scope. Good house, 2 reception, 3 bedrooms, garage and nice garden. Rent £40 p.a. Premium —best offer.—No. 993.

DEATH VACANCY. — SHEFFIELD. — Very old-established mixed-class PRACTICE in late incumbent's hands 20 years. Cash receipts last year £1,664. Panel 1,200. Scope. Good house, 2 reception, 6 bedrooms, 3 Professional rooms, garage. To rent. Premium, best offer.—No. 999.

NORTH-WEST COAST.—Well-established PRACTICE in Seaside town. Cash receipts £500-£550 p.a. Panel 450. Modern flat to rent at £80 p.a. inclusive of rates. Premium—1¼ years' purchase.—No. 1,005.

LEEDS.—Small PRACTICE in present hands 54 years. Cash receipts over £500 p.a. Panel 400. Scope for energetic man. Suitable house for sale or rent. Premium—1 year's purchase.—No. 1014.

DERBYSHIRE.—Old-established PRACTICE in pleasant district near large town offering great scope for increase owing to building developments. Suitable for two men in partnership. Cash receipts last year £3,436. Panel 3,394. Two good houses, with ample accommodation and modern conveniences, each with garage, garden and tennis court. Premium—2 years' purchase.—No. 955.

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LANCS TOWN.—Old-established mixed-class PRACTICE in large town about 6 miles from Manchester. Cash receipts £1,800 p.a. Panel 1,500. Scope. Good house, 3 reception, 6 bedrooms, 3 Professional rooms, garage. Rent £72 p.a. Premium—1¼ years' purchase.—No. 996.

CHESHIRE TOWN.—PARTNERSHIP (after short Assistantship) in mixed-class Practice. Cash Receipts last year £2,020. Panel 1,800. Good house available to rent. Premium—1/3rd share—2 years' purchase.—No. 1008.

NEAR MANCHESTER.—Sound middle and working class PRACTICE. Average cash receipts £2,692 p.a. Panel over 2,500. Scope. Detached corner house, 2 reception, 4 bedrooms, 3 Professional rooms, garage and garden. Premium—1¼ years' purchase.—No. 952.

YORKSHIRE (W.R.).—PARTNERSHIP in old-established mixed-class Practice in important city. Average cash receipts £5,429 p.a. Panel 3,200. Scope. Convenient house available for incoming partner. Rent £50 p.a. Premium—1/4th or 1/5th share—2 years' purchase.—No. 997.

MONMOUTHSHIRE.—Old-established Panel, Contract, and Private PRACTICE in prosperous district. Cash receipts last year £1,400. Panel 1,200, plus Contract work, yields £1,230 p.a. Good house, 2 reception, 5 bedrooms. Professional rooms (separate entrance) and garage. Rent £40 p.a. Expenses low.—Premium—£2,000.—No. 970.

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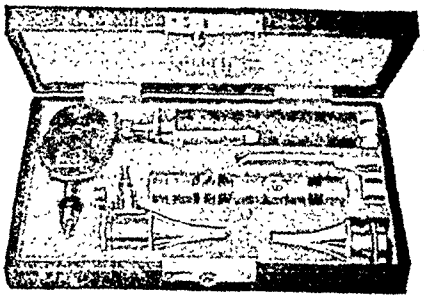
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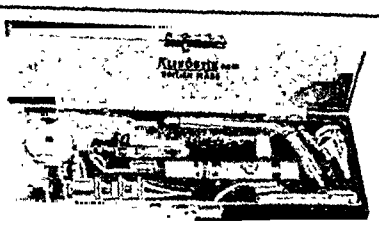
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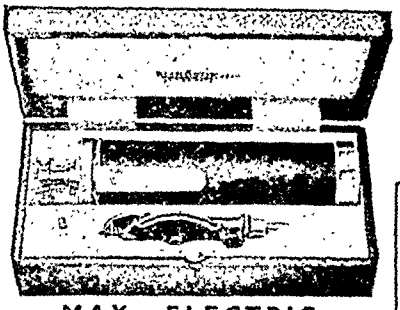
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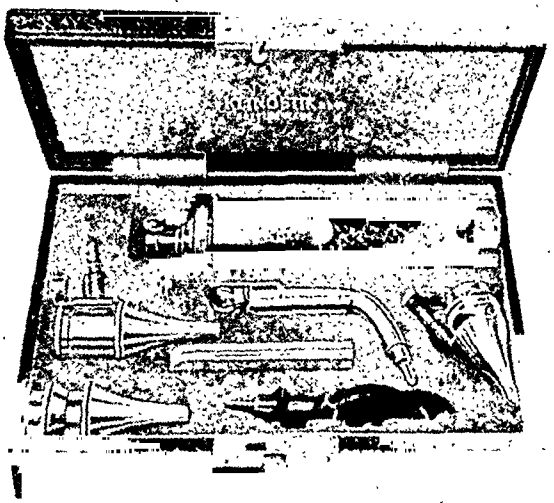


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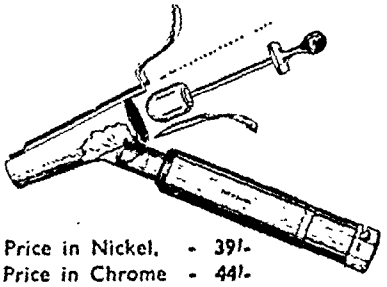


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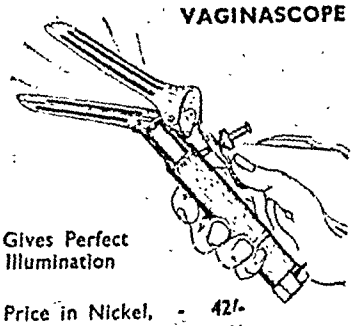
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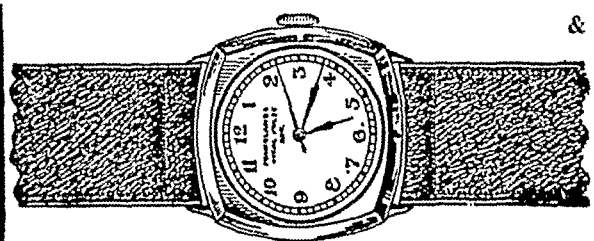
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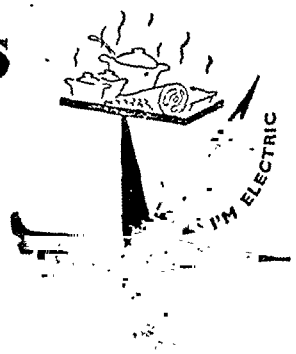
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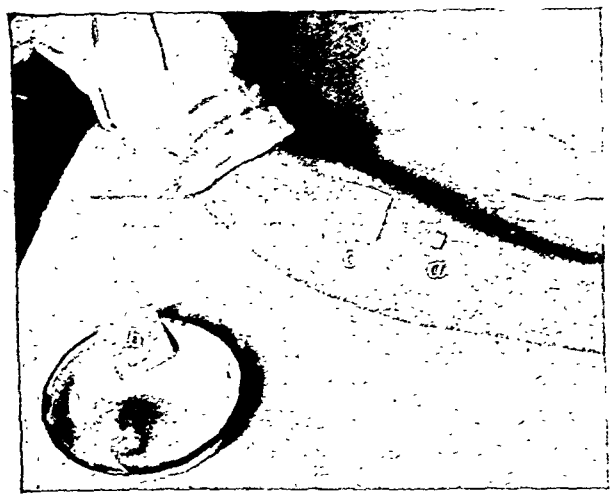


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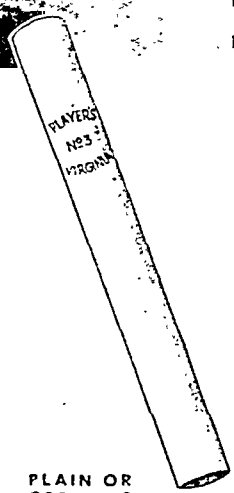
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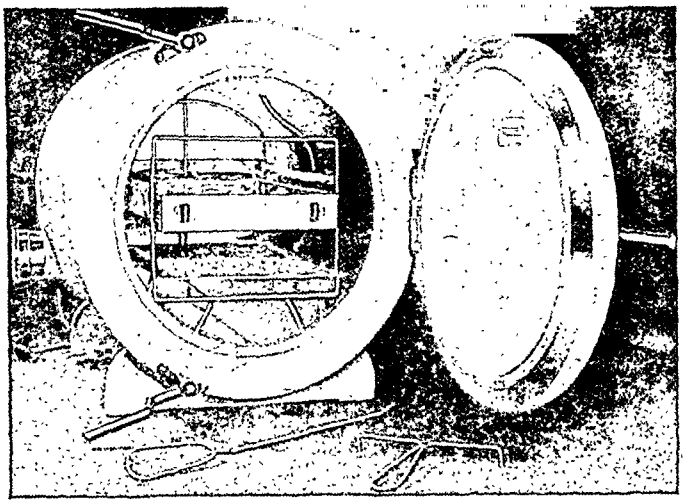
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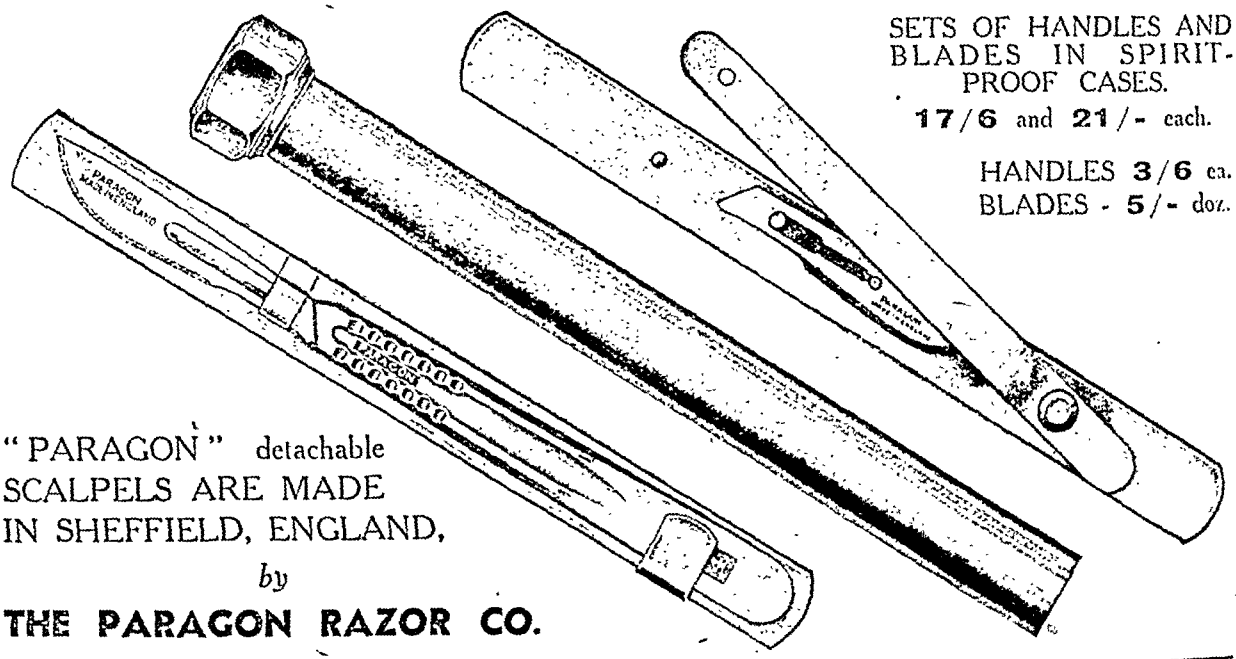
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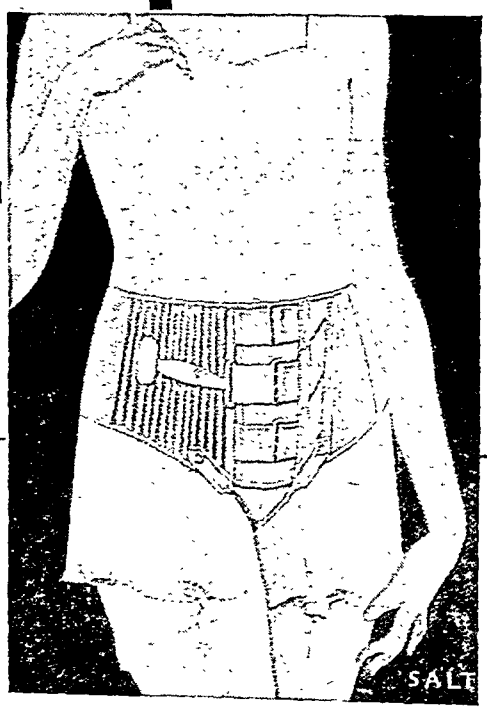
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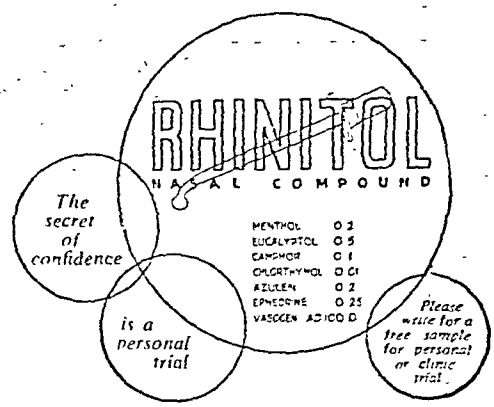
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Medical Press and Circular, May 20th, 1936, p. 454.

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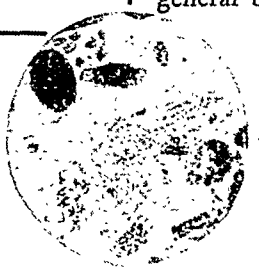
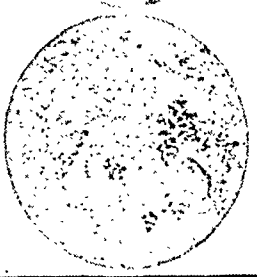


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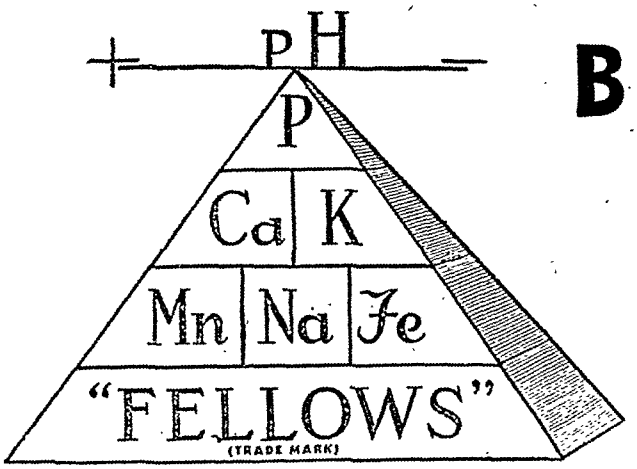
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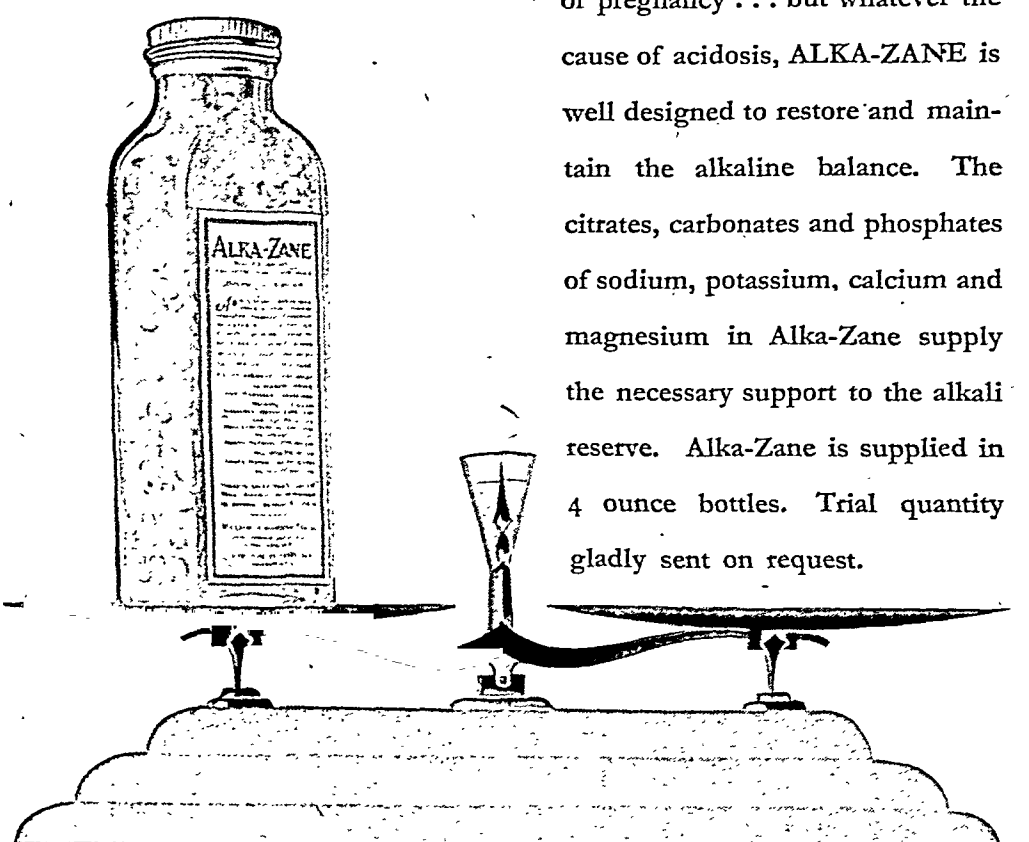
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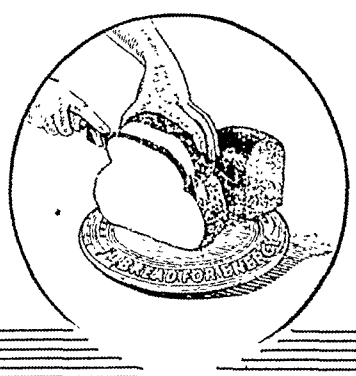


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Whenever liver is indicated give

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Active Liver Principles with Iron in Palatable Granule form

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1 Produces no irritation or toxic effects.

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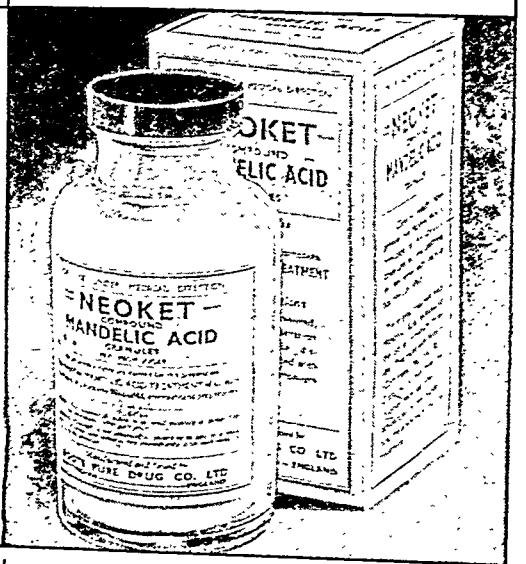
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Aristotle. Problem 43.
(Quoted by Paul of Aegina)
384-322 B.C.

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M. catarrhalis	200	million
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Streptococci	200	,,
B. Friedlander	100	,,
B. septi	100	,,
Staphylococci (alb. et aur.)	200	,,
M. tetragoni	100	,,
B. influenzæ	100	,,

per cc.

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(No. 1, for Treatment)

M. catarrhalis	50	million
Diplococci pneumoniæ	50	,,
Streptococci	50	,,
B. Friedlander	25	,,
B. septi	25	,,
Staphylococci (alb. et aur.)	50	,,
M. tetragoni	25	,,
B. influenzæ	25	,,

per cc.

DOSAGE—PROPHYLACTIC (Vaccine No. 3)

As different patients vary in their reaction to vaccine treatment, it is only possible to suggest the average procedure. A brochure which deals fully with the question of dosage will be sent on application. In general, a series of three injections (given before the season during which the person is usually susceptible) is recommended. The initial dose is 0.25 cc. followed by 0.5 cc. after an interval of seven days, and a further 1 cc. after another week or so.

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In acute conditions an initial dose of 0.1 cc. or 0.2 cc. and in chronic conditions 0.25 cc. The initial dose may be repeated after three days. If no reaction is produced, subsequent injections can be larger.



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Boxes of 3 × 1 cc. Ampoules, No. 3 Vaccine (Prophylaxis) .. 7/6 per box
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Also in 5 cc., 10 cc. and 25 cc. bottles and in single Ampoules

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BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 18 1937

A STUDY OF DIET IN RELATION TO HEALTH

DARK ADAPTATION AS AN INDEX OF ADEQUATE VITAMIN A INTAKE

TECHNIQUE AND PRELIMINARY RESULTS

BY

J. R. MUTCH, M.D., D.O.M.S.

AND

H. D. GRIFFITH, B.A.

(Under the supervision of Sir J. B. Orr, M.D., F.R.S., Rowett Research Institute, Aberdeen)

The power that the eye has of accommodating itself to alterations in illumination is called adaptation. When an individual comes out of bright sunlight into a dimly illuminated room surrounding objects at first are invisible; as adaptation takes place first the general outline and then details of surrounding objects can be clearly seen. The time necessary for adaptation was first measured by Aubert in 1865, and since then has been studied by many observers. The sensitivity of the retina to light increases rapidly during the first ten minutes, a much slower but gradual increase taking place up to forty minutes. At the end of that time the retinal sensitivity to light has increased several thousand times. When a person leaves a darkened room and enters bright sunshine a feeling of dazzle is experienced. Rapid adaptation, however, takes place, sensitivity being enormously reduced in twenty seconds (Adams, 1929; Lythgoe, 1926). Failure of adaptation in reduced light is known as night-blindness, hemeralopia, or nyctalopia.

Association with Vitamin A

The association of night-blindness with diet is not the result of recent advances in knowledge of vitamins, but was accepted and quite extensively studied before vitamins were known or any theory could be advanced as to the nature of the relationship. Defective dark adaptation has always been common among poor people living chiefly on plant foods. Liver has been used as a cure since 1500 B.C., and was recommended for this purpose by Hippocrates (Aykroyd, 1930; Tansley, 1931). The frequent discussion of the defect during the last century shows that it must have been common throughout Europe. The peak of incidence seems to have been during the Lenten fasts in the Danubian and Eastern Mediterranean countries and in Russia. After the description by Bitot in 1863 of xerosis conjunctivae combined with hemeralopia, Netter pointed out that night-blindness can occur without xerosis, and it became evident later that the two are stages in the same disease process, night-blindness coming first (Fridericia and Holm, 1925).

Towards the end of the century Lohmann (1913) wrote: "Malnutrition is the cause of the frequent hemeralopia which occurs in poorhouses and orphan asylums. . . ." "Hemeralopia is rare in England but common in Ireland. . . ." It is clear that it must have been common in England also, earlier in the century at least, since in the report of the medical officer of the Privy Council for 1862, where the health of the unemployed Lancashire cotton operatives is discussed, the passage occurs: "Ulceration of the cornea was inquired for but was only heard of *with special prevalence* . . ." in certain areas. It must therefore have been common at all times, and it would certainly have been preceded and accompanied by night-blindness. (See also Berry, 1886; Forbes, 1811; Snell, 1876; Spicer, 1892.) After the discovery of visual purple it was suggested that this pigment was responsible for vision in low illuminations, a theory which was supported by the demonstration of the bleaching of visual purple in light and the restoration of its colour in darkness. Finally, after the discovery of vitamin A and of its relation to xerophthalmia, experimental study of the eyes of rats showed that in vitamin A deficiency, before xerosis of the conjunctiva is obvious, the restoration of visual purple after bleaching is delayed (Fridericia and Holm, 1925; Holm, 1925). At this stage clinical hemeralopia in the rats was demonstrated by simple tests in a dimly lit room in which the rats had to jump from the corner of a table to reach a shelf of cages.

Practical Aspects

With the rapid improvement in diet in this country since the beginning of the century obvious deficiency diseases, including xerophthalmia, have become more and more uncommon, and interest centres at present on the question of the extent to which further improvements are required. Since the important dietary sources of vitamin A—milk, butter, eggs, liver, carrots, and green vegetables—are, on the whole, relatively expensive foodstuffs, it may be predicted that deficiency, if it is found at all, will be more common among the poorer people. The general conditions of life in this country are not such as to reveal deficient dark adaptation. In towns no one is called upon to do work or get about in light less than adequate even for inefficient dark vision, and even in the country such inefficiency of vision might be completely unnoticed. On the other hand, in certain occupations, particularly motor driving and aviation, efficient visual adaptation to low illuminations and to sudden changes in light intensity is of the greatest importance. A high proportion of flying accidents occur at night, and of

motoring accidents at twilight. Delayed dark adaptation is probably of importance also with reference to dazzling by strong head-lamps (Jeghers, 1937). The problem is therefore not of merely academic interest.

Glare has long been regarded as an important factor in the production of night-blindness. The classical instances are the Brazilian labourers who could see when setting out to work before sunrise but not when returning in the evening in better light (de Gouvea, 1883); the soldiers who became night-blind after a parade in bright sunshine or the painter after painting a white façade (Lohmann, 1913); and the sailors in tropical regions (Forbes, 1811) or the fishermen in Newfoundland or Labrador who go night-blind in the summer unless they drink cod-liver oil (Aykroyd, 1930). These cases afford a clinical parallel to the experimental production of hemeralopia in the rats, to which reference has been made. Since the effect of exposure to bright light in cases of vitamin A deficiency is evidently cumulative and may become severe, it does not appear advisable to use in testing capacity for adaptation any experimental procedure which involves frequent or prolonged bleaching of the visual purple.

Present Investigation

The results to be presented now are preliminary to a study of diet in relation to health which has been begun in Aberdeen and will be carried out at other centres in Scotland and England. Methods similar to those adopted here and other more elaborate methods are in use at many research centres in Denmark, Belgium, the United States, and elsewhere (Edmund and Clemmesen, 1936; Jeans *et al.*, 1937; Jeans and Zentmire, 1934, 1936) for the purpose of discovering the extent to which deficiency of vitamin A exists and the daily requirements of vitamin A to ensure perfect health. It is not suggested that the amount which may be shown to be necessary to ensure the maximum possible efficiency of visual adaptation will necessarily be optimal for all functions, but it can be stated that the requirement for perfect health cannot be less than the amount needed to ensure perfect dark vision.

Assuming that a method has been found which will accurately measure the power of adaptation, the following main questions arise: (1) to what extent do differences in the power of adaptation occur; (2) can adaptation be improved by giving vitamin A; (3) is defective adaptation associated with habitual low intake of vitamin A; (4) is it possible to state with any degree of certainty what regular intake is required to maintain maximal power of adaptation. Only the first two questions will be discussed in this paper. As the investigation proceeds, data will be presented relating to the other two.

Description of Apparatus

Since the test was intended for use chiefly with children and a large series of observations was contemplated, it was necessary to have a method that would be simple and yet accurate, and, as it was proposed to examine children at different centres, the apparatus had to be self-contained and of such a size that it could be easily transported.

The test consists essentially in measuring the power of distinction under different illuminations. White cards devised by Edmund (1936) were used. They have printed on them the letter E in different shades, varying from a letter printed in black to one on which faint grey can just be distinguished against the white background. In the series of nine cards the "contrast" of the letter against the unprinted background decreases in geometrical progression. The "contrast" is measured by the difference between the diffuse reflecting powers of the unprinted and printed parts of the test card, divided by the reflecting power of the unprinted part, and for the successive cards of the series has the following values:

$$^1/_{10^0};\ ^1/_{10^{0.25}};\ ^1/_{10^{0.50}};\ ^1/_{10^{0.75}};\ ^1/_{10^{1.00}};\ ^1/_{10^{1.25}};\ ^1/_{10^{1.50}};\ ^1/_{10^{1.75}};\ ^1/_{10^{2.00}}.$$

To designate the individual cards the logarithms of the reciprocals of these fractions are used, so that the black letter on the white background corresponds to 0.00 and the faintest letter on the white background is designated 2.00: on this card the grey is so faint that its reflecting power is 99 per cent. of that of the white background. The letter is 63 mm. high; the breadth of the limbs 12 mm. This is slightly larger than the 6/36 letter on a Snellen chart. As the card is placed at a distance of about 40 cm. from the eye, the visual angle is large, so that even in very low illuminations where there is a physiological central scotoma, the letter can still be distinguished. To vary the apparent brightness, Tscherning's photometric glasses are used. These glasses are of a neutral grey tint and are so constructed that they absorb light after a logarithmic scale, No. 1 glasses transmitting 1/10 of the incident light, No. 2 glasses $1/10^2$, No. 8 glasses $1/10^8$. The two 60-watt lamps used give an illumination on the card of 1,670 metre-candles. When the cards are viewed through the series of Tscherning glasses the apparent illumination is reduced, as in the following table:

Tscherning Glass No.	1	2	3	4	5	6	7	8
Apparent illumination in metre-candles	167	16.7	1.67	0.167	0.0167	0.00167	0.000167	0.0000167

Since this investigation had to begin on a certain date to fit in with other clinical studies, there was not sufficient time to measure the illumination used before starting the clinical work. After the apparatus had been in use for some time it was suspected that the illumination was higher than that used by Edmund (1936), since several subjects were found who could see card 0.50 through the No. 8 glass. Later, physical measurement showed that the illumination was 1,670 metre-candles (8.22 Tscherning) instead of 1,000 metre-candles (8.00 Tscherning) as used by Edmund. Our curves may therefore be expected to be displaced to the right by 0.22 Tscherning relative to those given by Edmund.

ILLUMINATION OF TEST CARDS

The illumination of the test cards was determined as 1,670 metre-candles by comparison with a surface illuminated by a standard 10 candle-power Vernon Harcourt pentane lamp, using a photo-electric cell as a transfer instrument. A copper/copper-oxide photo-electric cell was fitted with a neutral grey glass filter of transmission coefficient 2.07 per cent. (1/48.2). Exposure of the combination of cell and filter in the plane occupied by the test type gave a deflection of 26.7 cm. on a moderately sensitive galvanometer connected to the cell. The cell, without the filter, was then exposed at 54 cm. distance from the pentane lamp (with appropriate diaphragms to eliminate scattered light), and a galvanometer deflection of 26.4 cm. was observed. The intensity of illumination of the test type was therefore:

$$\frac{10}{0.54^2} \times \frac{26.7}{26.4} \times 48.2 = 1{,}670 \text{ metre-candles or lux.}$$

Conversion to the Tscherning scale of brightness may be made to an adequate approximation by assuming that 1,000 lux corresponds to Tscherning 8. The illumination of the test cards would therefore be $(\log_{10} 1670 + 5) = 8.22$

Tscherning; or if a reflecting power of 75 per cent. is assumed for the white card the brightness will be 8.09 Tscherning.

EFFECT OF FLUCTUATION OF SUPPLY VOLTAGE DURING TESTS

Fears that fluctuation of the voltage of the electric supply might vitiate the results by causing serious variation in the illumination of the test cards were found to be without foundation. Observations extending over several days with a self-recording galvanometer connected to the photo-electric cell showed that the maximum variation of illumination amounted to ± 15 per cent. (voltage variation ± 5 per cent.): during the forenoon hours, when most of the tests were done, the variation was only ± 7 per cent., or ± 0.03 Tscherning. Apparatus for control of input voltage was therefore unnecessary for the purpose of the tests. The details of construction of the test-cabinet are shown diagrammatically (Figs. 1, 2, 3, and 4).

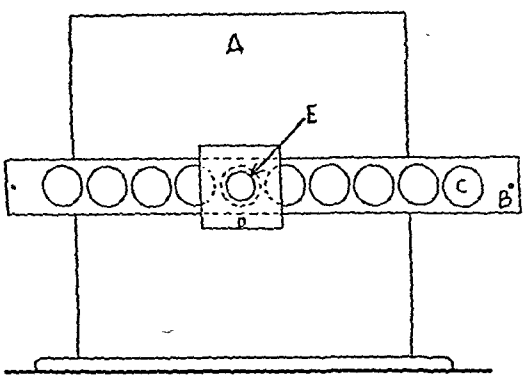


FIG. 1.—Front elevation.

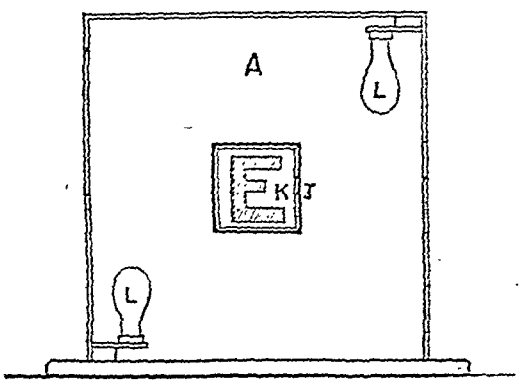


FIG. 2.—Front elevation (face removed).

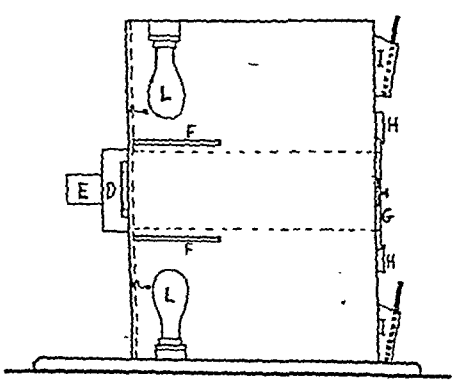


FIG. 3.—Side elevation.

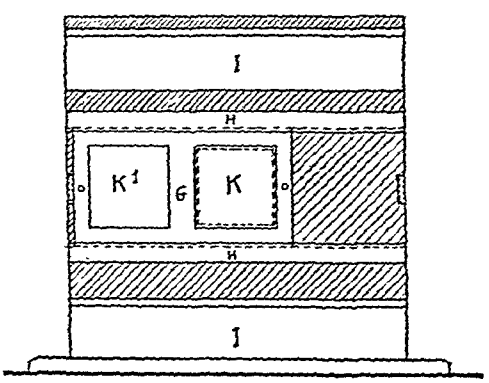


FIG. 4.—Back elevation.

COST OF APPARATUS

	£	s.	d.
Test type	3	1	3
Import duty		13	0
Tscherning photometric glasses (small) ...	6	16	6
Import duty	3	8	3
Box: material and cost of making ...	3	10	8
Total	£17	9	8

Test type from Nyrop and Maag A/S., Copenhagen; Tscherning photometric glasses from Guilbert, Routit et Cie, 114, Rue du Temple, Paris (III); box: home made.

FIGS. 1, 2, 3, and 4.

The cabinet is 19 inches long, 13 inches deep, and 19 inches high. The lettering is as follows:

A: a light-tight box;
B: carrier for the Tscherning glasses (C);
D: wooden holder for the lens carrier;
E: brass eyepiece;
F: wooden tube;
G: Card carrier to hold two cards, sliding in the runners (H); while one card (K) is opposite the opening (J) another card (K^1) can be fitted into the carrier and when the first card (K) is recognized by the patient the carrier is pushed along, causing the second card (K^1) to come opposite the opening (J);
I: two racks to hold the series of cards;
L: two 60-watt translucent electric globes.

Technique

The test is performed in a dark room. Card 0.00 is placed in the carrier G, the card being then opposite the opening J. Card 0.25 is fixed in the other space in the carrier. The slide is pushed along until glass 8 is opposite the eyepiece. The nature of the test is carefully explained to the subject. The cards with the letter E are shown, and the subject is made to understand clearly that no other letter will be shown, and he is required only to say in what direction the E is pointing. Only children capable of doing this have been tested so far. Before beginning the test the subject is kept in the dark room for at least fifteen minutes. If the position of the E is correctly given for the 0.00 card the slide is pushed across so that the 0.25 card is now opposite the opening. When the subject fails to distinguish the direction, the Tscherning glasses holder is pushed along, and glass 7 comes opposite the eyepiece. The subject is then looking at the card that he just failed to see through the darker glass. This procedure is continued until a card value has been found for each of the Tscherning glasses. The values so found can then be shown in graph form. Illustrative examples are given below.

Time Allowed for the Eye to Become Dark Adapted.—The time taken for ten normal individuals to see card 0.00 through glass 8 was as follows:

4 individuals saw card 0.00 through glass 8 in 5 minutes.
4 " " " " 7 "
1 " " " " 10 "
1 " " " " 12 "

Twenty normal individuals were kept in darkness for times varying from fifteen to sixty minutes. No appreciable difference could be found in the adaptation curves of these individuals. It can therefore be stated that if an individual be dark-adapted for fifteen minutes the adaptation will be approximately at its upper limit for that individual.

Time Taken to Complete the Test.—The time taken by 100 individuals to complete the test varied from seven to fifteen minutes. By prolonging the test in repeat examinations no higher values could be obtained. About ten minutes for the complete test is, in most cases, adequate.

Factors which may Influence the Test

Pathological eye conditions, such as retinitis pigmentosa and chronic glaucoma, which are known to cause night-blindness were excluded from this investigation. All patients received a complete ophthalmological examination, and only those that had normal visual acuity were examined for dark adaptation. Several of the children wore glasses. This did not appear to have any influence upon the adaptation curve.

Practice was another factor which might have influenced the test. The essentials of the test were clearly demonstrated before actual testing was begun. The method is so simple and easily understood that children of 6 years of age with normal intelligence had no difficulty in understanding what was required. A slight improvement only was found in the adaptation curve of university students upon repeating the examination a week later under similar conditions (Table I; Fig. 5). When a similar experiment

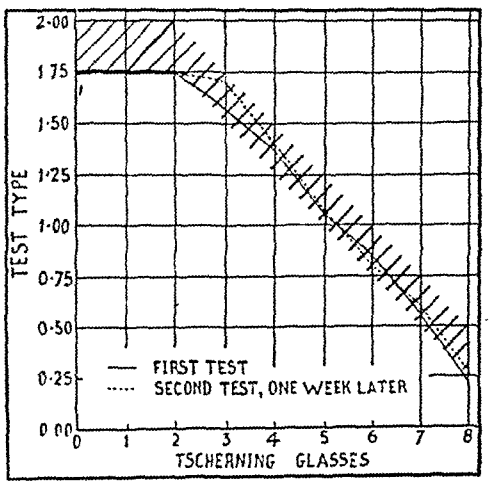


FIG. 5.—Effect of practice on ten university students. The shaded zone represents the upper and lower limits of normal adaptation.

was performed upon seven East End school children a negligible improvement was noted through glass 7 only. This improvement could quite easily be accounted for by the fact that these children were examined on the two occasions on the same forenoon and kept in the dark from the beginning of the first until the end of the second test. The first test was started on the first subject ten minutes after entering the dark room, and an even greater improvement in the adaptation curve might have been expected from increase in dark adaptation. It can therefore be stated that in our experience practice has little or no influence on the accuracy of the test.

Normal Power of Distinction

The individuals who have been examined number 130. The majority of them have been tested twice; about fifty have been examined three or four times. These preliminary studies include ten university students, twenty mill girls, twenty industrial school boys, and twenty-three children of employed and unemployed working-class

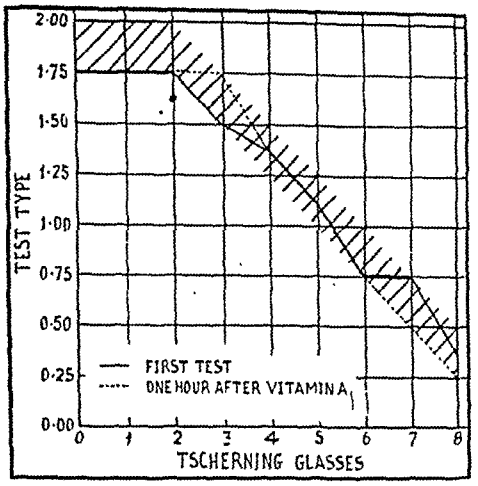


FIG. 6.—Effect of 16,000 units of vitamin A on two university students. The shaded zone represents the upper and lower limits of normal adaptation.

parents, for whom the average results are shown in the tables and graphs. After completion of the first test a single dose of 16,000 units of vitamin A, as halibut-liver oil,* was given to two of the university students and to all of the other subjects, and a second test made one hour afterwards. It will be seen that little improvement fol-

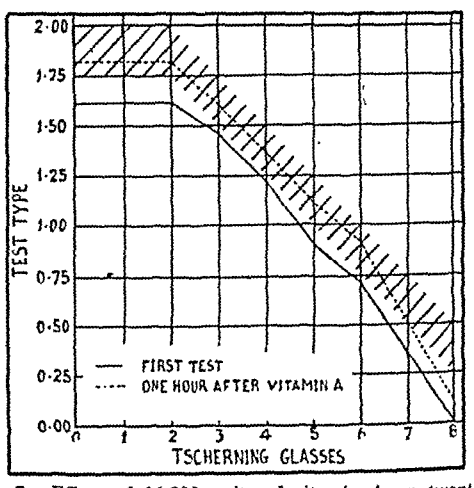


FIG. 7.—Effect of 16,000 units of vitamin A on twenty mill workers. The shaded zone represents the upper and lower limits of normal adaptation.

lowed the taking of vitamin A in the case of the university students (Fig. 6), but a definite improvement occurred in all other cases (Figs. 7 and 8). A similar dose of vitamin A was given on each working day and each school day for a fortnight to those of the mill workers who gave unusually poor first curves and to the elementary school children. The mill girls showed a dramatic improvement at the end of the fortnight, but the elementary school children little improvement beyond that produced by the single dose, except at the two ends of the scale, where

* The capsules of halibut-liver oil used were kindly supplied, without charge, by Messrs. Crookes, to whom we express our thanks. Stated value, 8,000 international units per capsule.

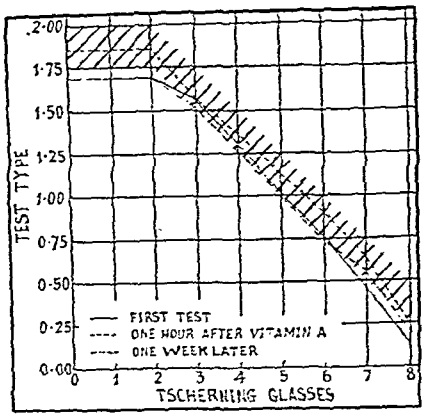


FIG. 8.—Effect of vitamin A on twenty industrial schoolboys. The shaded zone represents the upper and lower limits of normal adaptation.

the improvement was definite (Fig. 9). On testing these children again, a fortnight after stopping the vitamin A, a slight decrease in adaptation was found, but not to the level of the first test.

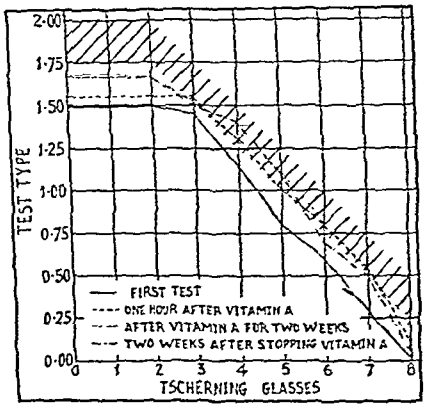


FIG. 9.—Effect of vitamin A on twenty-three working-class children. The shaded zone represents the upper and lower limits of normal adaptation.

It may therefore be tentatively suggested that the performance of the university students—and of other adults of similar class, tested but not here recorded, who gave similar results—is such as to be unaffected by increase in vitamin A intake, and is therefore optimal. A large proportion of the other subjects did not attain this standard, and these, without exception, improved after administration of vitamin A. On the basis of these results it appears that any subject giving an initial curve below the following may be expected to respond to vitamin A:

Tscherning Glass No. ..	8	7	6	5	4	3	2
Test card	0.25	0.50	0.75	1.00	1.25	1.50	1.75

It also appears that the most perfect curve that can be expected will be:

Tscherning Glass No. ..	8	7	6	5	4	3	2
Test card	0.50	0.75	1.00	1.25	1.50	1.75	2.00

These limits are represented in the graphs by the shaded area.

A point that may be of practical importance is that administration of vitamin A very definitely affects not only the vision at minimum illumination (glasses 8 and 7) but also the power of distinction at an illumination equivalent approximately to twilight (glass 4), and even at the highest illumination and in daylight.

TABLE I.—*Ten university students, aged from 18 to 21 years*

Test	Tscherning Glass No. ..	8	7	6	5	4	3	2
A	Test card	0.22	0.57	0.85	1.05	1.37	1.57	1.75
B	" "	0.27	0.60	0.80	1.07	1.40	1.70	1.75

A, first test; B, repeat test one week later.

TABLE II.—*Two university students*

Test	Tscherning Glass No. ..	8	7	6	5	4	3
A	Test card	0.37	0.75	0.75	1.12	1.37	1.50
B	" "	0.25	0.50	0.75	1.12	1.37	1.75

A, first test; B, one hour after 16,000 units of vitamin A.

TABLE III.—*Twenty girls employed in a cloth mill, aged from 15 to 24 years*

Test	Tscherning Glass No. ..	8	7	6	5	4	3	2
A	Test card	0.01	0.35	0.72	0.91	1.22	1.47	1.61
B	" "	0.12	0.50	0.92	1.12	1.37	1.60	1.83

A, first test; B, one hour after 16,000 units of vitamin A.

TABLE IV.—*Three selected cases from the above series who showed an abnormally low adaptation curve*

Test	Tscherning Glass No. ..	8	7	6	5	4	3	2
A	Test card	—	0.18	0.50	0.75	1.16	1.41	1.53
B	" "	0.00	0.50	0.83	1.16	1.33	1.58	1.83

A, first test; B, after 16,000 units vitamin A on working days for two weeks.

TABLE V.—*Twenty industrial school boys aged from 12 to 16 years; average age 14*

Test	Tscherning Glass No. ..	8	7	6	5	4	3	2
A	Test card	0.14	0.47	0.76	1.02	1.31	1.56	1.63
B	" "	0.25	0.65	0.90	1.13	1.36	1.57	1.85
C	" "	0.20	0.56	0.74	1.00	1.26	1.52	1.68

A, first test; B, one hour after 16,000 units vitamin A; C, repeat test one week later.

TABLE VI.—*Twenty-three working-class children, aged 10 to 13 years*

Test	Tscherning Glass No.	8	7	6	5	4	3	2
A	Test card	0.01	0.29	0.60	0.80	1.14	1.45	1.50
B	" "	0.12	0.55	0.80	1.00	1.30	1.55	1.55
C	" "	0.20	0.53	0.80	1.11	1.30	1.52	1.66
D	" "	0.05	0.50	0.70	1.10	1.40	1.50	1.66

A, first test; B, one hour after 16,000 units vitamin A; C, vitamin A for two weeks; D, two weeks later.

Summary

The estimation of power of dark adaptation by means of Edmund's hemeralopia test type and Tscherning photometric glass is described and preliminary results presented.

A limit is shown below which all subjects react with improved adaptation to administration of vitamin A.

whose first performance is above this limit give no response to vitamin A.

The test is sufficiently simple to be applied to intelligent children of 6 years, so short that it is suitable for serial examinations, and the results are unaffected by practice.

We have pleasure in acknowledging the co-operation of Dr. I. Leitch and Mr. D. Lubbock in organizing and carrying through this investigation.

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MODERN METHODS OF TREATMENT OF CLUB-FOOT*

BY

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It is very flattering but slightly uncomfortable for one who is not an orthopaedic surgeon to be invited to open a discussion at an orthopaedic meeting. However, in the present interesting but undeveloped state of surgery it is probably useful for someone to work at right angles to the accepted lines of specialization, limiting his cases by their age rather than by the system of the body that is affected. So, taking advantage of my position as an amateur orthopaedist, I will start with the platitude that before beginning to treat a condition it is of advantage to decide what that condition actually is. In the case of talipes I believe that this can be done.

The Cause of Talipes

The teaching at present is that the cause of talipes is unknown. I believe, on the contrary, that it is possible to establish beyond doubt the existence of a definite category of congenital deformities due to mechanical causes, and that the classical "talipes equino-varus" is the middle range of a certain series of these deformities. It has been an interesting task working out the limits and possibilities of this category, and I have given elsewhere a summary of the evidence I have collected on the subject (1936). The result has been to convince me that these congenital deformities of the feet are only understood in all their degrees of severity and all their complications and variations when looked at in this light; and that this understanding is a not entirely negligible help to their treatment.

It is interesting to examine the causes that prevent the general recognition of what I believe to be an important and definite pathological category. First among the difficulties comes the complication of the argument. Even to state it properly would be a long day's work, and no one could possibly imagine a busy surgeon devoting a day to listening to it. No journal would publish such a statement except in a form compressed to the verge of unintelligibility; a book on the subject might have a sale of a dozen copies; and meetings of this sort are in their hurry a poor substitute for the leisurely courts of argument of the mediaeval schoolmen.

Then the mental process employed is one that is almost entirely neglected in medicine. We have become used to depending on the fruitful and valuable experimental method, in which we produce artificially certain happenings, observe them, and draw conclusions. But there is another method used in science. No one can play experiments on the planets, but yet we know a good deal about them. We have learnt it by reasoning out what would happen were a certain hypothesis true, and comparing these results of abstract thought with what actually does happen.

It is on this second plan that I have tried to investigate the group of congenital deformities to which I consider talipes to belong; and it is because of its unfamiliarity in medicine that very few of my colleagues seem to see the line of argument or admit its strength. The reason for using it is that it is notoriously difficult to interfere in the processes of gestation without wrecking it. I can think of certain experiments that would confirm my results, but to me they appear simply unnecessary cruelty. And, after all, the Chinese have done some fairly relevant experiments on the female human foot. Shortly, the argument is that if one works out in the abstract what would be the consequences of certain things going wrong in the delicate correlation between the growing foetus and its expanding surroundings, one can deduce a series of deformities exactly duplicated over a period of years in the outpatient department of any children's hospital.

Certain stock objections to this theory are made, usually with a kind of hint that the objector could easily think of more, and stronger ones, if it were worth his while. They all seem to me to show a failure to grasp what the hypothesis attacked actually is. For instance, Middleton (1934) says that the negative is proved once for all by the occurrence of talipes in foetuses 3 months old. I believe that compression can begin its work when the foetus is two millimetres long. Burns and Ellis (1937), remarking that there are many cogent arguments against it, give as a sample of them that in the early days of pregnancy the foetus can move freely within the uterus. I have been unable to find any work illuminating this point, but granted the freedom of movement to be as great as it is usually thought to be, this freedom seems a curious argument against the possibility of displacement. And, anyhow, it is no part of the hypothesis that the displaced feet have ever been in normal position; the probability is all the other way. If any one really wants to attack my hypothesis, here are some of the main lines of argument which have to be explained away.

1. The position of the normal foetus before birth.—I believe the drawings of the foetus in textbooks of obstetrics to be inaccurate in certain very important points.

2. The position and range of movement of the feet in the newborn infant.

3. The occurrence of "pressure dimples"; a most interesting line of argument.—Their variations according to degrees of pressure, and normal or abnormal positions of the limbs, seem

* Read in opening a discussion in the Section of Orthopaedics, including Treatment of Fractures, at the Annual Meeting of the British Medical Association, Belfast, 1937.

to me to be a conclusive proof of the argument. And finally there is their absence in arthrogryposis, a condition I believe to be due to increased hydraulic pressure.

4. Mutual deformities, where two deformed parts that have been pressed together fit into each other like the die and the coin stamped by it.

5. The correspondence of shape of the feet with the position of the joints of the legs, in the different types of talipes.—A variation on this argument is the difference between the feet in double talipes, which I believe to be due to compression (not necessarily abnormally high compression) in a cross-legged position. The invariable difference between the degree of deformity in the feet is just what would correspond to the greater pressure on the outer leg.

6. The variation of the states of the joints and muscles with the degree of pressure as shown by the severity of the deformity and the extent of the dimpling.—The compression theory does not call for any new pathological process of spontaneous muscular degeneration to explain this; it merely assumes that the tissues affected behave as they are known to behave after birth in similar circumstances of pressure and immobility.

7. The much greater frequency and severity of moulding of the feet as compared with moulding of the hands.—This would be expected, as the feet are so much less sheltered.

8. The very complicated but to me satisfactory explanation of arthrogryposis in terms of hydraulic pressure, with its strong confirmation from a disease of sheep.

9. A new confirmation from brain surgery that I have just thought of.—In that syndrome of lumbar spina bifida and talipes which I believe to arise from pressure before the spinal cord has formed, it is well known that hydrocephalus very often occurs. All the cases which develop it have a peculiar deformity of the medulla and upper part of the spinal cord, exactly as if the brain had been squeezed out of the foramen magnum like tooth-paste out of a tube (Russell and Donald 1935). This interferes with the circulation of the cerebro-spinal fluid, and so causes hydrocephalus. It is hardly necessary to point out that, given mechanical pressure on the foetal skull, one would expect this very effect.

Treatment

MANIPULATION

It is curious how much of the present surgical practice can be upset by a simple statement of the aims of treatment. If one states the platitude that one is trying to obtain the normal range of movement of an infant's foot it means that the talipes foot is not corrected until it will go up with the slightest pressure into full calcaneo-valgus—that is to say, till the back of the little toe touches the outer side of the leg. Anything less means imperfect reduction of the deformity, though I have before pointed out that all the classic methods of treatment stop when a range of movement rather less than that of the adult foot has been obtained.

The second crucial point about manipulation is that this full correction (note that it is not an "over-correction") must be obtained at the first manipulation, and that it is gained by a final compression of the whole tarsus as the foot is squeezed against the leg. This primary violent compression of the tarsus has an effect totally different from that of the gradual "coaxing" pulling round of the foot that is at present taught. When the foot is slowly pulled round it gives at its weakest point, the junction of the tarsus and the metatarsus, leaving almost unaffected the centre of the deformity, where the strong bony block below the tibia is left bent and tilted to the curve of the inner concavity of the uterus that has originally moulded it.

I know from experience that of these two principles of manipulation the ambition of gaining full calcaneo-valgus will be accepted by very few people, and the gaining of it at the first manipulation by fewer still. But I am convinced that in them is the essence of the matter.

Finally, it is this same forcing up of the foot into calcaneo-valgus that is the one and only manipulation necessary in the after-treatment. The more intelligent mothers can be taught to do it, but it is extremely difficult to get trained masseuses to carry it out. Without exception they explain that it will "spoil the arch of the foot," and persist in a curious variety of manœuvres which they have been taught, and which seem to me completely useless. After eighteen months or so it usually becomes impossible to push the foot up completely, but a range of movement up to 45 degrees above the horizontal should be kept permanently.

SPLINTING

Once more I beg leave to indulge in a platitude: it is that function is more important in any disability than structure. By correcting the position of the foot and keeping it at rest structure alone is treated. To correct function, the two most important divisions of which are the muscle balance of the foot and the mental impression of how it should be used, it is necessary to allow (and even to stimulate) movement in the corrected position. The classic methods of splinting talipes ignore function. But even in dealing with structure they appear to be inefficient: none of them hold the foot corrected in relation to the body as a whole, though it is on that relation that its proper use depends.

My present model of splint, about the twelfth of its line, is fairly well known. It depends on the mechanical principle that it is possible to control the position of one foot by means of the other. I could easily design one that would be more efficient mechanically, but it would be much more expensive, and would be even less efficiently used. To get the full valgus position that is essential I pack up under the anterior and outer part of the foot with layers of thick adhesive felt. The elastic pressure gained by this is very efficient in moulding the foot; but I have never seen it applied in my way by anyone else. Points in applying it are:

1. Bandage each foot separately. I have been rather depressed by seeing an illustration in a recent book showing a foot being bandaged in with the cross-bar in position (Burns and Ellis, 1937).

2. Fasten the sole-plate first, with the foot packed up in such a manner that the leg-piece projects outward away from the leg. Then when this in its turn is bandaged, it pulls the foot into valgus. I believe it is impossible to overdo this valgus position.

3. If there is a normal foot arrange it in the normal position, pointing outwards from the sagittal plane about 20 degrees. The talipes feet should be arranged to point more outwards, into the "Chaplin position" (here, for the first time, is a true over-correction).

4. Do not be alarmed by a fair amount of reactionary swelling after the first violent manipulation. I have never seen any trouble from this.

5. Never cease the splinting because of pressure sores or skin irritation. Both are rare, neither is important; but if a half-corrected foot is set free it will become far more obstinate than if it had never been touched. (Compare the results of putting on plaster-of-Paris at irregular intervals.) If a baby with simple talipes is put in splints in the first few weeks, full correction and subsidence of reactionary swelling should be attained by the age of 4 or 5 months. Then the sticking-plaster can be left off, and the child supplied with night boots of the same pattern. If the mother carries out instructions and pushes the feet up three times a day to full

calcaneo-valgus there should be no further trouble. I have often found that children treated in this way learn to walk earlier than their normal brothers.

OPERATIONS

The correction of the deformity by moulding with the splint is only possible while the bones are so soft that they will yield before an amount of pressure that the skin can bear without sloughing. On cases which have passed this stage I have for some time been operating according to principles that go flatly against the usually accepted teaching. Sir Robert Jones, for instance, says that as much correction as possible should be gained by wrenching and plaster (that is to say, by stretching the soft parts) before touching the bones; and then that as little as possible ould be removed. Now it seems to me that a foot it has been wrenched, or one in which the soft parts 're been cut or shifted, is in a state of tension that is towards relapse. Stretched fibrous tissue and, even e, scar tissue produced by cutting tendons and liga- s, when once left free contract with force and per- sistency, reproducing the original deformity in a more intractable form. But bone, when once its shape is changed, has no such elastic recoil. In consequence I have been acting on the principle that the soft parts should be left untouched and unstretched, while enough bone is removed to allow the foot to be brought into about the degree of calcaneo-valgus possible to the civilized adult. The situation of the bone removed depends on seeing the deformity as I have described it; it is in a quite different place from the ordinary wedge resection of the tarsus, which has such a deservedly bad name. A most important and usually overlooked part of the deformity is that the external malleolus is too far from the ground, and bone must be removed to let this down to its proper position as well as to allow the foot to be straightened. It might be called a "crescent resection" of the tarsus, the base of the wedge removed being of this shape.

The results I have obtained with this operation have modified my opinion, gained from experience of other methods, that the use of open operations in this condition was to repair the effects of other open operations. I am not as sure of its value as I am of that of the splint I have described, but I am inclined to think the principle sound. If anyone should wish to try it the main points to remember are to go up as high as possible in front of the ankle, and not to be afraid of overdoing the valgus by removing the outer part of the os calcis.

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N. Fastuline (*J. Medical (Ukraine)*, 1937, **7**, 1, p. 75) has investigated the bacterial flora of the air at different altitudes in the Caucasian Mountains. He used Mickel's tubes fitted with Janet's syringes. Each test was carried out with the filtrate of 200 litres of air. The mountain air was found to contain saprophytes and no bacteriae of faecal origin. Above 10,000 feet there was a predominance of mycobacteriae over bacteriae. Among the mycobacteriae the author found penicillium and mucor, among the pigmented cocci *Sarcina lutea*, *Micrococcus roseus*, *Micrococcus citreus*, and *Sarcina rosea*, and among the bacilli *Bacterium mycoides*, *Bacterium subtilis*, and *Bacterium mesentericus*.

MODERN METHODS OF TREATMENT OF CLUB-FOOT*

BY

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In the past the treatment of congenital club-foot has undergone many changes, and in the future it will probably experience others. No generation is ever satisfied with what its forbears have done; this is a right and proper attitude to adopt, otherwise progress or improvement would cease.

Whatever our views as to the pathology or treatment of this deformity, and they are many and varied, it still remains a condition which, however satisfied the surgeon may be, is capable sooner or later of making him appreciate his own limitations; for the orthopaedic surgeon who has treated this deformity over any number of years must time and again have had patients to whose parents he has said, "This child's feet will not relapse," and yet perhaps one, two, or even several years afterwards the patient has been brought to him with the story that the feet began slowly to turn inwards again. You have already listened to an account of the deformity of congenital club-foot in all its aspects. I therefore propose to confine my remarks almost entirely to its treatment.

Some years ago I spent a considerable time upon an investigation of congenital club-foot, and I have not changed my views as to its pathology and aetiology, except that in regard to the former I have realized that the changes in shape of the individual bones of the foot are more marked than I thought at that time.

You probably all know my hypothesis that congenital club-foot is due to a congenital dislocation of the head of the astragalus, that this dislocation is due to an atresia of the socket into which the head of the astragalus normally fits, and that therefore the deformity results from an intrinsic and not an extrinsic cause. I believe this hypothesis is as good as or better than any other, and that it explains more satisfactorily the difficulty we experience in our treatment of the deformity. If the deformity were due entirely to the effects of outside pressure, as is still commonly believed, it should be a simple matter, by exerting a similar pressure in the reverse direction, to correct the deformity and hold it corrected until such time as it was possible for the child to maintain the corrected position by its own muscular power. This I think we must all admit is not in practice what does happen.

From the methods of treatment usually advocated there cannot be any question that in a great many cases the condition is not cured by simple means. We all get cases in which the feet respond to treatment, but we have plenty in which the results are unsatisfactory.

Treatment in the Infant

After a long experience of the method of treatment upon which I was brought up—namely, repeated forcible manipulation of the deformed foot and fixation of the foot in the corrected position with plaster strapping—I have come to the conclusion that it is a poor method in every way when compared with the one advocated by Mr. Denis Browne. It needs frequent repetition several

* Read in opening a discussion in the Section of Orthopaedics, including Treatment of Fractures, at the Annual Meeting of the British Medical Association, Belfast, 1937.

times a week; it hurts and frightens the child; it upsets the relations, who regard it as rather brutal, as in fact it is; it frequently has to be interrupted because the skin of the foot becomes sore; and, last and most important, the use of strapping to maintain position after manipulation is useless once the child becomes of any size, as the patient is able by the contraction of the muscles to pull the foot round in spite of the strapping.

For some time I have used the splint invented by Mr. Denis Browne, and I find it avoids nearly all these troubles. Perhaps, to begin with, several manipulations are necessary to enable the splint to be applied, but thereafter it can be reapplied without these forcible manipulations, which must and do inflict severe trauma to the tissues of the foot, causing swelling and a synovitis of the joints with ultimate stiffness of the foot as a whole. With this splint the child very soon realizes that it is not being hurt, as also does the mother, and instead of a screaming child one has an infant which gives no trouble. It is a splint by which it is easy to apply the correction gradually, and I think it illustrates one of the great principles of orthopaedic surgery which in the present day of operation and impatience to get results we are apt to lose sight of. I know it is unwise to generalize, but I have myself learnt that, speaking generally, haste in the correction of deformities does not pay, either from the view of the patient or from that of the surgeon. This I believe to be the very great merit of Mr. Browne's method of treatment in the infant. The older orthopaedic surgeons before the war were slow in their methods of treating congenital club-foot, but the testimony of some of the sisters who worked with them was that they, as a whole, got better results than do the present generation.

Mr. Browne on former occasions has deprecated the method of repeated forcible manipulations under an anaesthetic and of fixation in plaster of feet which have not responded to early treatment. With this I am in entire agreement. I have spent many hours manipulating such feet, with very indifferent results. His views are that the foot becomes stiffer each time it is manipulated, and that the muscles of the leg, as the results of long periods of fixation, become more and more wasted. This is certainly true, and once the muscles have become really wasted and hardened they never, in my experience, become supple again or properly developed. If, instead, the foot is manipulated once under an anaesthetic to get it plantigrade and this splint is then applied it is extraordinary how, at the end of a week or ten days, it appears to have softened out: also the splint can be reapplied without any trouble, a little more correction being obtained by gradually rotating the foot outwards.

Not only do the adduction and the inversion, which are really one deformity, improve, but in addition that most troublesome feature of congenital club-foot, a small drawn-up heel, appears in many instances to descend without any trouble. The child probably, by pushing against the splint, gradually stretches the tendo Achillis.

I have not, I must confess, employed this method long enough to be able to express an opinion as to whether feet thus treated have less tendency to relapse, but it most certainly is the simplest method to employ in the infant and does not have the disadvantages of the others. I would certainly commend it to any who have not so far employed it.

Many surgeons still hold that when the adduction and inversion portion of the deformity in the infant has been corrected the equinus, if it persists, must be dealt with by a division or elongation of the tendo Achillis. My own view in this respect is that division or elongation of this tendon, however done, does result in considerable muscular wasting, and my experience is that the position of the foot very often cannot be corrected afterwards and that its condition is worse than it was previously.

We have all held that the criterion of cure in a congenital club-foot is "a foot with no adduction or inversion; the presence of a hollow upon the outer side of the foot in the position previously occupied by a bony mass, the head of the astragalus; the ability of the child voluntarily to evert and also dorsiflex the foot well above the right angle." As I have said on a previous occasion, even if this criterion is fully obeyed it cannot be claimed that the deformity will not relapse. I still find this to be true. When a deformity does relapse I believe that the correction which had been obtained before must have been a spurious one, and that the deformity had in fact been hidden by a false correction of the fore part of the foot.

We then come to consider the treatment of those deformities which have not been cured by conservative means and require some form of open or bone operation.

Open Operation

The basis of the open operation which I devised depended upon my hypothesis that the socket for the head of the astragalus was too small to allow the head to enter and articulate with it properly; that in order to enlarge the socket, which was contracted up, it was necessary first to elongate the muscles controlling the alteration in size and then to divide the calcaneo-scaphoid capsule, which was also contracted, thus permitting the bony portions of the socket to take up their normal relation to the head of the astragalus and the other bones of the foot. In theory this seemed a rational operation and one which it would appear to be quite easy to carry out.

Actually in practice it is sometimes impossible to achieve what one has set out to do. I have realized more and more that by the time I have come to consider open operation the shape of the tarsal bones, especially the head of the astragalus, has altered more than I originally appreciated. Sometimes even if the position of the scaphoid and os calcis with relation to the head of the astragalus can be altered satisfactorily it will not remain thus, because it is impossible for bones which do not fit each other to articulate in anything like a normal manner.

I am not in a position to give you the late results regarding the patients upon whom I operated originally and upon whom I probably lavished more care and attention, but I can give you the results of the operations I have done since 1929 in the ordinary routine of hospital work. Some of these patients have quite good feet from a functional point of view, but, as is only reasonable, not so good as the ones treated by conservative methods only. There is a very real danger of the foot becoming valgus and boat-shaped if the open correction is easy. Once such a foot has been produced I know of no method short of an arthrodesis that will remedy it. It is impossible when a valgus foot has been brought about by an open operation to correct the condition subsequently by any forcible manipulation. Some such feet I have had to assist afterwards by means of valgus supports. In two cases I have been compelled to fix the foot in a better position by means of an arthrodesis of

the midtarsal and subastragaloid joints because the foot was in such a bad position.

A great many patients upon whom this open operation has been carried out have returned to me months or even three or four years afterwards with a relapsed and rigid foot. In some few instances one or more manipulations, followed by suitable boots and exercises, seem to have restored the position, but in many resort to a bone operation has been necessary to deal with the deformity.

Another thing noticed in the late results of this operation is that the foot very often is much thicker in the midtarsus, and also there is a tendency for a persistent equinus to remain. This does not seem to cause any disability, but it gives the foot a rather ugly appearance. On the whole I think some feet can be improved by this method, but it appears to be very difficult to be in any way certain which cases will be permanently successful.

What has been found at operation upon those feet that have relapsed subsequent to an open correction? The midtarsal and subastragaloid joints were full of fibrous tissue binding the opposing surfaces of the bones together. This fibrous tissue was so firm that it had to be dissected away before the articular surfaces could be identified. It was quite obvious that subsequent to an open correction there must have been little if any movement in the joints. And clinical examination of feet upon which this operation has been performed has demonstrated that there is scarcely any movement. They are always rather stiff feet.

Repeatedly I have found that the scaphoid and os calcis, which at the time of the open operation had been restored to a satisfactory position so far as one could see, had returned to their original relation with the astragalus—the scaphoid on the inner side of the head and the os calcis tilted beneath it.

Bone Operations

I still believe that when all other methods of treatment have failed an arthrodesis of the subastragaloid and midtarsal joints, removing at the same time sufficient bone at these joints to produce a correction, is the best and most lasting method of treatment. It is an operation which gives a very satisfactory foot in a talipes equino-varus the result of an infantile paralysis, and it is the rational operation to perform in the deformity we are considering. I would even go so far as to say that if there is any doubt about doing an open correction an arthrodesis is probably the better line of treatment. Astragalectomy and other piecemeal bone operations should still be condemned.

To conclude, with regard to the vexed question as to whether there is or is not any inward rotation of the tibia I still hold that the real fault is a failure to correct the deformity of the foot, and that osteotomy is simply the production of one deformity to hide the existence of another.

Issued as a special supplement to *The Countrywoman* of August, 1937, is a report prepared by the Associated Country Women of the World on midwifery services in rural areas throughout the world (30, Baker Street, London, W.1, price 3d.). In a brief discussion of the report Dr. Esther Carling compares the state of affairs in America, where in New York State, for example, only 2 per cent. of deliveries take place outside hospitals, with that in France and other European countries, where the avowed policy is to make it safe and possible to have all babies born in their own homes. A mass of information is compressed into relatively short space in this publication.

INSTINCT AND HYSTERIA*

BY

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The study of mental diseases is not only interesting in itself, as a means of helping the patient medically, but is also of scientific importance in that it opens up the most important avenue to a knowledge of the biology of the healthy man and to an understanding of the nexus between psychological and physical phenomena. Typical psychic mechanisms appear in psychopathology in exaggerated relief and can help in the solution of general biological problems. In the same way the thorough study of general biological laws assists in the more profound understanding of psychic symptoms. Thus, formerly we studied how far hypnoid conditions in hysteria might be compared to the phenomena of the so-called "animal hypnosis." In particular we have compared the motor patterns of hysterical tremors, attacks, stupors, and paralyses to the mechanisms of instinct, the flight and defence reactions which in the animal we call violent motor reactions and the sham-death reflex.

Relation of Hysteria to Animal Instincts

The view that certain hysterical reaction types are in close relationship to animal instincts in general is especially confirmed by the large mass of those types of reaction which centre round the impulsive life. Hysteria originates especially from two main sources: (*a*) the instinct of self-preservation—in the form of fear and anxiety in relation to dangerous situations—and (*b*) from all the emotions and conflicts associated with the sexual life. Wishes, struggles, and disappointments of an erotic nature form the main group of experiences which produce hysteria in ordinary civil life, especially in women. The shock neuroses provide another very large group of hysterical reactions—not, however, in the sense that acute fright syndromes, for example, are merely identical with the hysterical neuroses which develop from the frightening experience or from chronic anxiety, but in the sense that both have a close relation to, and dissolve into, each other.

No agreement as yet has been fully reached on the question of the relation between hysteria and the fright neuroses. Even though the acute fright reactions have often been simply labelled as hysteria in consequence of their unmistakable resemblance thereto, nevertheless a sharp boundary line was drawn between them so long as the fright neuroses were only considered as acute, automatic, evanescent, and spontaneously resolved affective reactions; whereas hysteria, on the contrary, was only spoken of when such acute reactions became secondarily fixed through the purposeful intervention of a "will to sickness," a "gain from sickness." That these difficulties are not due to deficient observation on either one side or the other, but arise from the nature of the problem itself, will soon be apparent.

Reactions to Fright and Danger

What reactions do we observe as a direct result of situations which produce fright and danger? The subjects are shaken, tremulous, irritable, and confused; they

* One of three lectures given at the Tavistock Clinic in April.

mostly complain of physical symptoms—headache, insomnia, misery, palpitation, fatigability, dyspnoea on walking, and excessive reactions to damp and heat. They often exhibit great temperature oscillations and abnormal eruptions, and have exciting and very vivid dreams. An absolutely reliable and ordinary type of man is entirely altered—he is now tremulous, irascible, excited, incapable of concentration, exhibits dyspnoea on walking, palpitation, insomnia and headache, and pyrexia after such exertion as mountain climbing. The patients admit often feeling well, then again they will complain of headache, which is possibly present seeing that at such times they have bloodshot somewhat bulging eyes and a secretion of tears. During such phases they have pyrexia and a pulse rate of 100 or 120.

Similarly Bonhöffer describes the vasomotor symptom-complex as the most characteristic effect of fright. As belonging to the acute psychogenic effects of fright Gaupp mentions severe tremors, tachycardia, hyperaesthesia, fearsome dreams, polyuria, vasomotor secretory symptoms, and delirious clouding of consciousness. Among the survivors of the Messina earthquake in 1908 Stierlin chiefly found insomnia, increased reflexes, and rapid and fluctuating pulse.

We might say, therefore, that disturbance of the vegetative nervous system, with vasomotor manifestations prominent, is the most common feature of fright syndrome. And the resultant general instability of physical and psychic functions offers a favourable soil for the development of various types of hysteria, although only a minority of subjects will become hysterical; in the majority spontaneous recovery will occur after a certain time. In these syndromes a psychic aim is not as yet demonstrable; they are to be considered as purely reflex.

When in those special fright syndromes psychomotor or purely psychic functions are involved, the matter of interpretation is more difficult; above all, in those pictures which resemble the "sham-death reflex" and the "violent motor reaction"—the fright stupor, the twilight states, senseless running away, tremors, and convulsive attacks. According to their external symptomatology these pictures do not differ fundamentally from the usual hysterical reactions which occur in the absence of acute shock as a result of emotional disturbance. Nevertheless we may say that the acute fright syndromes are distinguished to a certain extent from the ordinary hysterical reactions by a strong predominance of vegetative vasomotor signs, by their tendency to more primitive physical effects, convulsions and twilight states, and also to a certain degree by the pure forms of fright stupor.

Is it possible always to differentiate between the fright reactions and hysteria according to their inner psychological structure? Observations on shock psychoses of recent occurrence and of short duration in vigorous men have resulted in the following description: "It was possible on seven occasions to observe directly the awakening from the exceptional condition. The contrast between the twilight state in which the person exhibited theatrical behaviour, which in individual cases went so far as puerilism and nonsense talk, and the awakened state was quite astounding. As a rule it was difficult to realize that this now smart, self-contained, inconspicuous man was the buffoon of the twilight state. The awakening occurred suddenly."

From such observations it follows that even the acute psychic fright syndromes do not produce manifestations so automatic and physiologically limited as to "knock out" the psyche, but that they frequently contain elements which point to an active psychic participation which—therein lies the important point—exhibits a directly purposeful quality. Not only do the precipitating fright-experiences often undergo repression or transformation ("The man has fallen over," says a patient in a fright-twilight-state, instead of "He has been killed"), but the fright-twilight-state, also, even in vigorous and brave persons, may in a remarkable manner assume forms we are otherwise accustomed to see in criminals and to regard as signs of crude hysterical deceptive tendencies, bordering on simulation—the Ganser syndrome with its falsely directed theatrical behaviour.

Examples of Fright Reactions

Stierlin also reports numerous examples of similar fright reactions from the earthquake catastrophes of Messina and Valparaiso. A certain incomprehensible composure or even a contrasting cheerfulness with repression of the terrifying experience was the most frequent psychological sequel of the catastrophe. In many cases, however, this tendency to repression proceeded to take the form of puerilism or of a ludicrous pseudo-dementia. "Thus, on the morning of the earthquake at 7 o'clock, a man of prominent position, who together with his family had escaped death, was seen in a nightgown sprinkling the flowers in his garden with a watering-can. Another, a merchant who had lost his house and family on the day of the calamity, was seen on the quay in his nightgown and slippers with a large herring in his hand, laughing to himself." "Another person who had lost his family in the earthquake, and had escaped with nothing more serious than shock, did not appear as though the disaster had made the slightest impression upon him. It seemed to mean nothing to him, although he saw his house in ruins and heard the catastrophe being discussed. He appeared to be delighted, and rode round in his motor car. When anyone spoke to him he was much confused, and kept on laughing. Yet in ordinary circumstances he was a good, sound family man." "After being thrown out of the window by the atmospheric pressure, a 17-year-old youth, as though by a miracle, landed uninjured on a meadow. Without showing the slightest concern for his family, he wanted to assist with rescue work, during which he played the clown. His severe confusional state lasted for more than a week. During the whole of that period he showed no kind of concern for what had happened, and never inquired about his family nor about anyone's safety. He seemed to know nothing about the whole event. One could see him aimlessly wandering about the streets in his shirt-sleeves." "Night after night a 65-year-old bank official ceaselessly called out 'Papa, mamma; Papa, mamma.' He imagined that his physician was a marshal, and addressed his own son as father."

It is scarcely possible to avoid the conclusion that the acute fright reactions often include from the start a tendency to flight from unbearable circumstances into a peculiar state, involving both repression and theatrical behaviour—in other words, the very psychic reactions which are nowadays usually regarded as forming the specific nucleus of hysteria. We shall more readily recognize the close relationship between fright neuroses and hysteria when we remember that both have a common biological origin—namely, the general animal instincts of defence.

How Hysteria and Fright Reactions Differ

Yet we must differentiate between hysteria and the fright reactions. Certainly acute terror (equally chronic

anxiety arising out of acute fear) is one of the most favourable starting-points for hysterical formations. But the fright neurosis remains essentially an *acute* syndrome, whose features are stamped by the severe affect of the moment, and which lasts only throughout the period of affective strain. The purposive factor has not as yet achieved independent expression, but is vaguely inherent in the anxiety-affect in much the same way as the tendency of a drowning person to clutch at a straw may be regarded as belonging to his anxiety-affect. In the case of the true fright neuroses both repression and theatrical behaviour disappear automatically *pari passu* with the after-effects of the acute shock. The patient comes to himself as the clear, energetic person he was previously; and again takes up life at the point where he left it. Most acute fright reactions end in that way. A new factor enters into those fright and anxiety reactions which develop into chronic hysteria. With the gradual return of reflection and composure the patient enters on a transitional phase in which the residua of the acute mechanisms become influenceable by the will, inasmuch as he is able to suppress them entirely or to allow them to develop still further. This is confirmed by my own clinical experience as well as experimentally. If during the return to normal the egotistical wish for a permanent removal from the danger-zone or for material gain secures the upper hand, it may interfere with the subsidence of the affective automatisms and give rise to a fixation. He is still in a position to fall back on a relapse into an acute anxiety, or twilight, state; the slight original tremor of predominantly autonomic origin can be reinforced so as to produce coarse tremors and shaking attacks.

Therefore, if we wish correctly to understand the relationship between hysteria and fright neurosis we must distinguish between two aims: (*a*) the primary aim, the primitive flight or defence tendency inherent in every strong painful affect and which forms the basis of the repressions and theatrical behaviour met with in the acute fright reactions; and (*b*) a secondary aim, which only makes itself felt during the subsidence of the acute affective shock and the return to normal, and which now produces a chronic hysteria out of the acute fright syndrome. It is at this stage that we can speak of hysteria proper. The acute affect, which includes the aim, dominates in the fright neurosis. In hysteria, originating from acute affect or from a chronic fear for one's life, the more lasting aim, which influences and utilizes the residua of affective mechanisms, governs the picture more and more. The former, the fright reaction, is essentially instinctive, created by a momentary, overwhelming situation. The latter, secondary hysteria, is more on the boundary between the instinctive and the rational, and, more than the former, is the product of the entire personality. That is why we are unable to separate the fright neuroses from hysteria, but also cannot identify them with each other.

Physiological Reflex Mechanisms in Fright

Is the acute fright reaction a purely physiological reflex in which the psyche as such does not participate, or does it depend, hysteria-like, on auto-suggestion? According to previous observations, we will answer this question as follows: In the acute pictures of fright physiological reflex mechanisms are just as surely demonstrable as hysteria-like elaborations of experience. The autonomic-vasomotor symptom complex may serve as a characteristic example of the first type, and, psychically speaking, directly includes the disturbance of sleep as well as the affective instability anxiety and depression. Also certain twilight states with predominantly organic features, observed by Bonhöffer, and many epileptic-like convulsive attacks fall into this group. On the other hand, the twilight state of the Ganser type, with its fright-manifestations, best exemplifies the direct psychic elaboration of fright reaction with hysteria-like mechanisms. The direct acute fright syndromes represent varying combinations of these two main factors; frequently they appear inextricably mixed in the same symptom-picture.

It is of significance in considering the relationship between the instincts and the hysterical reactions to note that the "major hysterias" with their richly developed massive symptomatology—for example, reflex mechanisms, violent motor reactions, stupors, paralyses, and twilight states—are commonly associated with situations which conflict strongly with the impulsive life—that is, with the erotic instincts and with the instinct of self-preservation. In the war one saw these massive hysterias develop not only as the result of acute, dramatic fright situations, but still more frequently they developed out of gradually progressive anxiety for one's safety—for example, behind the lines or in a military hospital where there was a dread of further exposure to danger. The reverse is true of such purposive neuroses whose secondary gain is not so directly anchored in the impulsive life—for example, the compensation neuroses of civil life. These are characterized by their diffuse symptomatology, their vagueness, and by the frequent absence of reflex, hypobulic, and hyponoic mechanisms. Only where the impulsive life is closely impinged upon do we come across the primitive instinctive reactions—for example, violent motor reactions and sham-death reflexes.

Hysteria and the Sexual Impulse

Let us now consider the relationship between hysteria and the sexual impulse. One aspect of these relations was emphasized in general medicine, and still more in Freud's psycho-analysis; they were even regarded as the governing principle in the theory of hysteria. As a reaction against his over-emphasis they have at times been understated. In short, it must be admitted that there is an important nexus between hysteria and that instinct, but this relation is not invariable. The sexual impulse only comprises one-half of these relations; the other half, which is just as important, is formed by the hysterical fright and anxiety reactions.

In the development of an individual case of hysteria combinations and anastomoses frequently occur between the sexual impulse and the fright-anxiety group. In neurosis a repressed sexual impulse often manifests itself as anxiety. On the other hand, especially in children, genuine anxiety can accompany sexual excitement. Thus we find hysterical reactions which have long been dormant in the form of an erotic psychic conflict are suddenly released by a fright-producing experience. A woman, who is getting old, enters into a severe state of inner tension and jealousy over the engagement of her younger sister; one day she is terrified in the street by a team of frightened horses, and suddenly exhibits hysterical abasia; she had never before reacted hysterically to fright. And, therefore, one impulse-stimulus can blend with another, so that combined they can produce an hysterical reaction.

Women and girls exhibit sexual hysteria more frequently than men. It would lead us too far astray if we were to give in detail all the erotic conflicts which might give rise to hysteria. Amongst the most frequent we might

mention: an unsuccessful love affair, jealousy arising out of the marriage of a sister, an undesired marriage, fear of pregnancy, difficulties in sexual intercourse, an unhappy marriage. At one moment the physical, at another the psychic side of the sexual impulse is the more hysterogenic.

Constitutional Foundations of Hysteria

For our present thesis the constitutional foundations are more important than individual experiences. Apart from war and compensation hysterias, our observations (which concur with Kräpelin's) show that the majority of hysterias occur round about the age of puberty, and much more frequently in the female sex. As is well known, the age of puberty is the most susceptible period for the release of constitutionally determined anomalies. As a matter of fact, we find an astounding number of constitutional anomalies among our hysterical material: infantilism, which generally manifests with special strength in the field of sex. Our clinical material of the last few years is especially rich in physical asthenia, genital malformations, dysmenorrhoea; and in the psychic field, general childishness, weakness of the sexual impulse, aversion to men, an over-strong psychic fixation on the mother, a generally disturbed pubertal development with retardation, or uneven establishment of the separate manifestations of puberty. In contradistinction to the compulsion neurosis, the signs of sexual infantilism are very frequently found in the hysterias; but the cruder perversions are relatively seldom present. Homosexuality most frequently manifests as an exaggerated and erotically coloured enthusiasm for girl friends, which may again be interpreted as an increased or a prolonged phase of an essentially normal early pubertal phenomenon; it can therefore be considered as only a partial manifestation of the infantilistic disturbances of puberty.

As an example of such a disturbance of pubertal development in hysteria we may mention the following case. A 22-year-old girl, who exhibited bad temper, hysterical- twitchings, and an impulse towards self-mutilation, menstruated for the first time in her seventeenth year. Even to this day she has a physical aversion to men, but experiences strong sexual excitement, which, in the manner of young pubescents, she satisfies by fantasy and masturbation. Even now her letters show a mixture of childish naïveté and pathos, a combination of the droll and tragic, characteristic of the "flapper." She said: "If I do not get well father must order my coffin at once, then it will make no difference even if I am damned. Someone may yet come for me. I am forgotten by God and the world. When someone does come, bring mademoiselle's apples to me." She had retained a childish kind of bigotry, and pestered the sensible old local parson with her incessant confessions of all her sins of thought and acts of masturbation. The clergyman well realized that she at one and the same time strove against and gratified her particular impulses in the confessional. Because the clergyman, during confession, was not strict enough with her, she had recourse to a Catholic priest, an alleged exorcist. She soon began to exhibit the usual mixture of adoration and erotism, and, influenced by his suggestions, she rapidly developed into a full-blown hysteric.

Without much difficulty we can perceive how this entire hysterical development of personality, up to the final appearance of twitchings, originated as a result of pubertal arrest, and remains indefinitely fixed in an early pubertal phase. The sexual impulse has retained its earlier structure, and, although lively and urgent, has failed to seek the normal sexual goal. The opposite sex is prudishly rejected. The impulse works itself out, on the one hand, in fantasy and dreams, and, on the other, in masturbation. Her bigotry, too, is nothing more than a tortuous channel by which the impulse finds concrete expression. The constant confessions involve an urgent and continuous preoccupation with sexual matters. After the faulty canalization of the non-adult impulse, it assumes more extravagant religious and semi-erotic forms, and finally, when the affective tension reaches a certain height, culminates in an hysterical motor discharge.

The same thing may happen to the sexually immature woman on marriage. Here also we find, as in early puberty, confused and vaguely compulsive feelings—a combination of disgust and negation with ungratified idealistic yearnings—which oscillate and do not permit of a normal love life, and finally discharge indirectly through the old hysterical instinctive channels. If vital anxiety is added to fright hysteria, then the symptom picture of the more sexually derived hysterias exhibits anger and disappointment together with erotic ecstasy, especially in the form of hysterical attacks and twilight states. There may also be irradiation into the sensory field, involving genital, quasi-genital, or symbolically displaced dysaesthesias.

Such immature women, with the sexual development of a 15-year-old girl, are suddenly faced with the realities of adulthood. That is why the approach of a concrete suitor, who was at first enthusiastically longed for in an idealistic way, or the prospect of marriage, is followed by instinctive defence-reactions, such as convulsions and sham death. Among prostitutes both syndromes—sexual infantilism and a tendency to hysterical reactions—are met with with striking frequency.

Physical infantilism, more often a deficient capacity for love, and exaggerated prudishness and shyness in themselves frequently hinder the attainment of concrete, happy love. Such girls are apt to develop into warped "old maids." On account of their lack of amiability they readily become Cinderellas, and act the part semi-genuinely with their poor affective equipment, martyr-like. "I am a neglected child, no one brings me presents, I never receive justice." She quietly puts up with everything, does not aspire to earthly goods, just requires a modest living, peace, and repose. She finally develops into a pseudo-ascetic bigot, or even exhibits a bitter, rebellious attitude of resentment, involving a permanent warping of the character. Her life is typified by constant friction with brothers, sisters, and parents, expresses itself in little malicious remarks and acts of revenge of an offensive, hysterical nature, lying in bed for weeks, or alarming attacks. Or she may exhibit a sudden dramatic collapse with symptoms of major hysteria, which may occur at a moment such as the engagement of a younger sister. Then once more the perverted impulse shows itself violently as sexual envy, and is discharged in instinctive reactions.

Regression in the Hysteric

Just as the impulsive life of the hysteric is often incompletely developed in a progressive sense, so also it often undergoes regression. Impulsive attitudes proper to childhood continue into adult life, as may often be shown in the relation to the parents. In hysterical individuals, as with many schizophrenics and schizoids, it sometimes happens that a proper resolution of the emotional attachment to the parents and the easy neutral independence of the adult are not attained. With excessive tenderness he remains clinging to his mother. The authority of the father retains its almost god-like quality, so that he

rebels against it violently and yet cannot break away. A 19-year-old youth develops a feeling of paralysis in his arm out of fear of his strict father, who is always urging him to work. In young women one observes hysterias which are wholly directed against the father and the home environment, and attacks which represent stormy impulsive discharges of anxiety and anger against them.

These forms of hysteria constitute a link with the real hysterias of childhood, which partly arise in connexion with the relation to parents or parent-substitutes. In children the relation to the parents is comparable in strength to sexual relations between adults, and is also instinctively derived. Also the close relation of hysterical reactions to fright and anxiety holds good with children as with adults. But there is an important difference—namely, that in children the hysterical forms of expression are generally more closely related to the normal ways of affective discharge than in the case of adults, and, therefore, strong childish reactions to severe painful stimuli merge gradually into what is essentially hysterical. Consequently, in children we more often find hysterias of an episodic, meaningless character which are not rooted in strong impulsive tendencies but arise from transitory momentary affects, imitation, and so on.

Many symptoms of what is called the "hysterical character" are nothing more than the fixed residua of an early pubertal psyche or unfavourable characterological modifications of the same under the altered demands of later life—namely, the characteristic antithesis between coldness and excess of erotic feelings—that is, an over-lively and over-idealistic psychosexuality with prudish rejection of the physical aspects of sex, enthusiasm for impressive persons, a preference for what is loud and lively, a theatrical pathos, a taste for brilliant roles, heroic fantasies, the playing with the idea of suicide, enthusiastic self-sacrifice, combined with a naïve, sulky, childish egotism. An immature psyche of this sort has a greater inclination towards impulsive discharges of affect, and especially towards hypobulic mechanisms. The hypobulic phenomena appear partly as circumscribed hysterical outbreaks (especially in the hysterical attack) and partly as permanent stigmata of the so-called "hysterical character" which, on account of its strongly hypobulic nature, we call capricious, in view of the distinctive contrast between stubbornness and exaggerated suggestibility shown therein.

The Effervescent Type

The effervescent type of psyche associated with early pubescence is very impressive and has been much described; but in our experience it is by no means the form most frequently given to hysterical reactions. Hysteria is more common in banal and stunted types, often exhibiting infantile stigmata, both physical and psychic, intellectually weak, annoyingly apathetic, emotionally defective, anxiously shy, fearful and excitable. They comprise the whole army of markedly psychically defective persons, the mental defectives, criminals, and prostitutes, who, not because of a specific mental structure, but simply on account of their deficiency of higher psychic mechanisms, are inclined towards primitive impulsive psychic discharges, which frequently include hysterical reactions. Further, hysterics seldom belong to what is known as the "cold-blooded type," but when they do belong to that group the hysterical reactions which they show are very rich and fully developed. This type is cruel, capricious, dishonest, thievish, completely amoral, unfeelingly egotistical, malicious, and intriguing. Many of these traits have been included in the description of the so-called "hysterical character." It is in point of fact a less common definitely degenerative type bordering on moral imbecility and the schizophrenic group. Furthermore, it is well known that the type of "congenital swindler" is very much inclined to hysterical reactions.

The Age Factor

In general one may say that puberty provides the main occasion for the exhibition of hysterical reactions and developmental retardation. The presence or persistence of early pubertal psychic stigmata most easily gives rise (in addition to the severer forms of psychic defect) to the "hysterical character"—that is, to a consistent tendency for the release of hysterical reactions. Hysteria is above all a reaction-form "of naïve, undeveloped psychic life" Kräpelin); it has its roots in the impulsive life. The nearer a person approaches an archaic psychic level or the more he regresses, the more does his hysteria take on the character of a severe pathological abnormality based on degeneration; and even then only when an extremely severe experience can be excluded. In youth hysterical reactions may betray a markedly degenerate constitution, but not necessarily so.

Why do hysterical cases become increasingly rarer with advancing age? Undoubtedly because in the course of time the slighter anomalies of pubertal development do, on the whole, become adjusted, and because, in general, many varieties of hysteria have no serious abnormal constitutional background, but appear episodically in children and the young as adventitious instinctive reactions to adverse experiences and environment. Kräpelin established this fact when he said that a large proportion of his female hysterics were country girls who, as young servants, had become transplanted into a large city and were not quite equal to the change of environment. Here again one is reminded of infusoria in a pond, which, on approaching a zone unfavourable to life, immediately exhibit "violent motor reactions."

With very severe experiences, such as war or earthquakes, not only the young, but even occasionally normal adults may show panic, hysterical reactions, or shock-neurosis. Thus we may conclude with Hoche that "everyone is potentially an hysteric"; for we are all carriers of archaic patterns which are usually more or less efficiently covered by more recently acquired cultural and characterological strata.

Thus hysterical reactions are to be regarded on the one hand as being congenitally determined, and as stereotyped expressions of life, which appear under common and everyday conditions, but especially at vital crises. Hysteria-like reactions are, on the other hand, also stereotyped responses of human and animal organisms to intolerable experiences, and are thus closely related to healthy psychic life.

The Industrial Welfare Society has arranged a course of three lectures to explain the far-reaching changes in factory law brought about by the new Factories Act. The lectures are being given by Mr. H. Samuels, barrister-at-law, at the headquarters of the society, 14, Hobart Place, Westminster, S.W.1, from 6.30 to 7.45 p.m. on Thursdays, September 16, 23, and 30. The fee for the course is £1 1s. (15s. in the case of member firms). The course will be repeated in Birmingham on Wednesdays, October 6, 13, and 20, at 6.15 p.m., at the English Theatre at the University.

AIDS IN THE DIAGNOSIS AND TREATMENT OF ECTOPIC GESTATION

BY

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The diagnosis of ectopic gestation in all its varieties is notoriously difficult, and for the attainment of some certainty in this it is necessary to evaluate carefully the history, symptoms, and signs. Proper treatment depends on a correct diagnosis, and doubtless there are cases in which the condition is unsuspected and entirely missed. By an error in diagnosis one may unnecessarily be exposing a patient's life to grave risks. It is thus incumbent on one to marshal all facts that may assist in the elucidation of the disease from which the patient may be suffering.

Acute tubal rupture with severe internal haemorrhage and its dramatic sequence of events is known to all. This is the picture of ectopic gestation which the recently qualified doctor has in mind. In actual fact it is surprising how rarely one sees the acute compared with the subacute or chronic (haematocele) type. A proper orientation and perspective of this disease and its common manifestations is required. Shaw (1936) states that "the diagnosis of ectopic gestation, in which localized haematomata are formed, often presents an extremely difficult clinical problem, and a careful interrogation of the patient as to the severity of the pain is always necessary." Cope (1935) refers to Grandin's observation that "the man who suspects every woman of having the condition is the man who is least liable to err in diagnosis." It may be considered that this is an overstatement, but with increasing gynaecological experience one appreciates that it is not so. A mass in the pelvis may be due to many causes, but in considering ectopic gestation the usual mistake made is between this and tubo-ovarian inflammation, an ovarian tumour or an early uterine pregnancy with a small tubo-ovarian swelling (inflammatory or neoplastic). With acute tubal rupture the condition has to be diagnosed from other abdominal catastrophes such as perforation of a hollow viscus. Most gynaecological surgeons will admit that at some time during their careers they have mistaken an ectopic gestation for a threatened abortion.

Pelvic Haematocele

As aids in the diagnosis of pelvic haematocele I wish to stress the importance of certain points in the history and the presence of *pulsation* in one or other vaginal fornix. Cases will be cited as illustrations.

With regard to the history, in something like 30 per cent. (Whitehouse, 1935) of cases there is no definite interruption of the periods, as irregular bleeding makes its appearance at or before the time when the first period following conception becomes due. I have noted that bleeding of an intermittent character may start before the period is expected or it may be coincidental with menstruation. On the other hand this may be delayed for a few days, and then blood loss be continuous for some weeks. One can almost invariably elicit a history of pain in the lower abdomen, present perhaps for one day only but in most cases recurring at intervals and being of a colicky nature. Eventually it may settle down to become a continuous dull or dragging ache. The combination of repeated attacks of pain and bleeding is most significant. Where the haematocele is large the main complaint may be bladder distress.

Pulsation in a Fornix

Writers in the last century were fully aware of this sign. Allbutt (1896) states: "Some authors have enumerated among the symptoms, during the progress of haematocele, an undue pulsation of the arteries in the vagina and cervix uteri." Whitehouse (1935) says that "pulsating vessels are often to be felt." In distinguishing tubal pregnancy from a tubo-ovarian swelling associated with an early uterine pregnancy he says that "the presence of definitely pulsating vessels on the affected side only favours a diagnosis of tubal pregnancy." Contrarily, Munro Kerr (1933) does not attach great importance to this, for he has observed that in inflammatory conditions of the appendages it is also well marked.

I have found pulsation in one or other fornix to be of considerable help in arriving at a correct diagnosis, and I cannot easily reconcile Kerr's statement with what I have experienced. In this part of China (Hong Kong) pelvic infection, due either to gonorrhoea or to septic abortion, is rife, and pelvic abscess is commonly seen. As yet a haematocele has been the finding at operation in every case in which there was pulsation. In some of them the husband has been known to be infected with gonorrhoea.

It is easy to miss the presence of pulsation in a fornix. The tip of the index finger should rest gently in the region of the attachment of the vagina to the cervix. It is there that pulsation is best felt. Only light pressure should be applied, for if it is too firm then the pulsation will be obliterated. For the elicitation of this sign in the right fornix it is preferable to use the left index finger.

Illustrative Cases

Case 1.—This was a six-para aged 31, who had been married twelve years. The husband had a history of gonorrhoea. Previous deliveries were normal, and the last was nine months earlier. There had been one abortion five years previously. The patient complained of abdominal pain followed by bleeding a fortnight before admission. She was still lactating, and had had no periods since her last confinement. On vaginal examination an irregular mass was felt in the left fornix, but the uterus could not be distinguished from it. There was marked pulsation in the left fornix. At laparotomy a pelvic haematocele was found, and it was impossible to identify the left tube and ovary.

Case 2.—A four-para aged 24, married six years, whose last delivery was six months ago. Menstruation commenced two months later, but the subsequent period was a fortnight overdue. Fourteen days after this a severe attack of pain occurred in the left side, followed by continuous bleeding for six weeks. There were three recurrent attacks of acute pain. Abdominal examination disclosed a mass rising out of the pelvis and extending into the left iliac fossa equivalent in size to a sixteen-weeks' pregnancy. Per vaginam, pulsation was felt in the left fornix and an irregular-shaped swelling filled the left half of the pelvis. At operation a large haematocele was found with many intestinal adhesions. The left tube and ovary were not seen.

Case 3.—A four-para aged 33, married twelve years. The husband admitted having had gonorrhoea. Deliveries had been normal except for one abortion. The last confinement was one and a half years ago. Three weeks before admission the patient fainted as the result of a severe attack of abdominal pain. This was followed by continuous bleeding. Whilst lying in the ward prior to examination she was seized with acute abdominal pain. There was no history of menstrual irregularity. On vaginal examination the uterus was found to deviate to the right owing to a mass in the left half of the pelvis. Pulsation was present in the left fornix. At operation a large haematocele was found.

Case 4.—This patient was a nullipara aged 29, who had been married eleven years and whose husband had gonorrhoea. Menstruation had always been irregular, but the last period lasted for only one day instead of the usual week. The day after there was generalized abdominal pain, which recurred during the following week and was accompanied by a profuse blood-stained discharge. On examination the uterus was bulky and retroverted. A mass was felt in the left fornix together with pulsation. At operation a small haematocele was removed. The right ovary was buried in adhesions.

Case 5.—A five-para aged 33, married nine years. The husband had been treated for gonorrhoea. The last delivery was one and a half years ago. Three weeks before admission there was an acute attack of abdominal pain with fainting. Severe bleeding ensued. This continued for eleven days, and was followed by another bout of pain. The condition had been diagnosed as a pelvic abscess and treated conservatively. A mass was found rising out of the pelvis, and per vaginam it was filling most of the cavity. There was marked pulsation in the left fornix. When the abdomen was opened a large haematocele was seen with the appendix adherent to it. An appendicectomy was performed as well as the usual attempt at removal of as much of the blood clot as possible.

Acute Tubal Rupture with Internal Haemorrhage

Even in the acute type of ectopic gestation it is sometimes difficult to be certain of the diagnosis. Particularly is this the case in the Tropics, where patients suffer from severe degrees of anaemia due to conditions other than surgical, such as ankylostomiasis, which give the impression of sudden and excessive blood loss. In doubtful cases I would commend the simple procedure of puncture of the posterior vaginal fornix. Either a lumbar puncture needle or an ordinary wide-bore needle with syringe attached will suffice. The risk of infection is negligible, and perforation of the intestine is minimal. If there is free blood the intestines will float on the surface and so be removed from any danger of puncture by the needle. After cleansing the vaginal vault with dettol the needle is pushed through the posterior fornix into the pouch of Douglas, keeping parallel and as close to the posterior aspect of the cervix as possible. If blood is aspirated freely into the syringe the test is positive for intraperitoneal bleeding. This is a useful means of differentiating between an abdominal catastrophe due to perforation of a hollow viscus and one due to free bleeding into the pelvic cavity, as from an ectopic gestation. In Allbutt's textbook will be found the statement that "in all doubtful cases . . . recourse may be had to an exploring needle or aspirator as recommended by Sir J. Simpson and Professor Braun." In those cases in which there is much blood, and consequently irritation of the inferior surface of the diaphragm, shoulder pain may be present as demonstrated by Cope.

Case 6.—This patient was a four-para aged 34, married sixteen years, whose last pregnancy was fourteen months ago. She had had amenorrhoea for two months. The day before admission she had slight bleeding, with backache and pain in the lower abdomen. Twelve hours later there was a recurrence of bleeding and abdominal pain. The patient was very anaemic and had marked oedema of the legs. There was slight suprapubic rigidity. Per vaginam the uterus was bulky and a mass was protruding through the os. On examination of the stools ankylostoma were found. A general anaesthetic was given and the uterus explored. I was not satisfied that the case was an abortion, since the material removed on curettage lacked the typical appearance of products of conception. The posterior fornix was punctured and blood withdrawn. At laparotomy a right tubal abortion was found. There was one litre of free blood, and some of this was utilized for autotransfusion. Convalescence was uninterrupted. Pathological examination of the uterine contents showed them to be portions of a decidual cast.

The difficulty in this case lay with ankylostomiasis complicating the picture, and an unnecessary abdominal operation on a woman so infected might have proved fatal. Puncture of the posterior fornix revealed the true condition.

Case 7.—A nullipara aged 29, who had been married twelve years, had had vaginal bleeding for eight days after missing one period. Abdominal pain preceded the bleeding by about eight hours. There was a history of shoulder pain. Hypogastric rigidity was present and a small tender swelling was felt in the posterior fornix. The diagnosis was in doubt, since the patient declared that her periods were irregular and often accompanied by pain. The posterior fornix was punctured and blood aspirated. At operation the abdominal cavity contained much blood and a right tubal gestation was present. An autotransfusion of 700 c.cm. of blood was given.

Treatment

Once the diagnosis of ectopic gestation, whatever its type, is made the treatment is operation. No matter how ill or how well the patient appears there should be no alternative to this line of treatment. In all cases, provided there is no infection, the abdominal route should be employed, but where a haematocele has become infected and has developed into a pelvic abscess, then drainage through the posterior vaginal fornix should be adopted. Even if a mistake in diagnosis is made and the condition is found to be a pyosalpinx, it is more prudent to have done what may prove to be an unnecessary operation than allow an ectopic gestation to remain untreated.

Pelvic Haematocele.—In the past palliative treatment was strongly advocated in those cases in which the haematocele was small. It was suggested that the mass was absorbed *in situ*. One has only, at operation, to look carefully at the capsule to realize how thick it is and what a length of time must be required before absorption is complete. I am of the opinion that all cases should be dealt with by operation. The objections to conservative treatment are: (1) the interminable length of convalescence and invalidism before absorption is complete; (2) the persistence of uterine bleeding, either continuous or intermittent, which will induce anaemia; (3) the constant pain, which at times is punctuated by acute attacks; (4) the risk of infection and formation of a pelvic abscess. At operation as much of the blood clot as possible should be removed. If the capsule is found to be adherent to the bowel no attempt should be made to separate it. When the appendix is involved in the mass an appendicectomy should be done. Only in the presence of definite infection or where there is persistent oozing from raw surfaces should a drainage tube be inserted.

Acute Tubal Rupture.—The value of autotransfusion requires emphasis. In some gynaecological clinics it is a routine procedure, and even in the case of fibroids removed by hysterectomy Wallingford (1937) is now conserving the blood and returning it intravenously to the patient. It is obvious that in the presence of infection one would never employ this method. The beneficial result of the transfusion is remarkable in cases which appear moribund, and convalescence is more rapid. Care must be taken to filter the blood through several layers of fine gauze. The "citrate" method has been used in all cases.

Summary

1. In the diagnosis of pelvic haematocele the history of recurrent attacks of low abdominal pain accompanied

by periodic or continuous uterine bleeding is very significant. Pulsation in one or other fornix confirms the diagnosis.

2. In acute tubal rupture if there is doubt as to the presence of free blood in the pelvic cavity, puncture of the posterior fornix is a useful accessory means of diagnosis.

3. Operation should be resorted to in all cases, no matter how small the haematocele. If possible, drainage should be avoided. In the acute case where there is free intraperitoneal bleeding and no infection autotransfusion should be performed during the operation.

I wish to thank the Director of Medical Services for permission to publish these cases and for the clinical facilities he has given me.

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Clinical Memoranda

Prostigmin in Paralytic Ileus

The points of interest in regard to the case reported appear to be: (1) Cracked ice should not be given postoperatively unless there is adequate supervision to ensure that the melted ice is not swallowed. (2) Atropine brakes the action of prostigmin, and is thus better avoided. (3) There was no alteration in the pulse and respiration as the result of the administration of 2.5 mg. of the drug in one injection.

The patient was a man aged 62 weighing 17 stone, who was operated on for intermittent left renal colic. A lower polar aberrant vessel was divided and the pelvi-ureteral junction straightened over an inlying catheter splint. The anaesthetic was 15 c.cm. of a solution of 1 in 1,500 percaine intrathecally, supplemented by gas and oxygen.

No purgatives or enemas were used in the pre-operative preparation, and the bowels had acted normally on the morning of the operation. During the first twenty-four hours following his return to bed nothing was given by the mouth, but four pints of 5 per cent. glucose in normal saline were injected intravenously. Cracked ice was sucked by the patient, and it appeared afterwards that he had swallowed large quantities of the melted ice. This was the probable cause of his subsequent trouble. Flatus was passed within a few hours of his return to bed, but on the second day distension had set in. No relief was obtained from enemas of all varieties, including ox-bile and molasses. Pituitrin had no effect. Acetylcholine was given in 0.1 gramme doses every two hours without result. By the third day regurgitant vomiting had begun, and upper abdominal distension was marked. At noon on this day 5 ampoules, each of 1 c.cm. prostigmin (2.5 mg.) were injected subcutaneously together with 1/100 grain of atropine sulphate. Colic and sweating occurred within thirty minutes, and a fair amount of faeces and flatus was passed. The upper abdominal distension remained, and the action of the drug exhausted itself within fifteen minutes.

By 7 o'clock in the evening distension had increased, though the pulse was stronger. Another 5 c.cm. of prostigmin was injected. This had no effect for twenty minutes. At the end of that time sweating and violent colic commenced, and after a few minutes large quantities of faeces and flatus were passed. The emptying of the bowels continued for some hours, by which time the abdomen was flat. The bowels required some adjustment for the next few days, but convalescence was on the whole uneventful.

Similar fortunate experiences resulting from the use of large single doses of prostigmin have been recorded by some Continental writers, and by W. E. David (*Lancet*, May 11, 1935) in England.

Johannesburg. R. CAMPBELL BEGG.

Parkinsonism following Peripheral Trauma

The case recently reported (Walker, 1937) prompts me to record one other.

In January, 1916, a man aged 27 sustained a gunshot wound in the right forearm while serving in Mesopotamia. He shows the scar of entry about an inch proximal to the wrist-joint, and a two-inch scar about six inches above it, where the bullet was partly removed. A piece of shot is still palpable.

He was sent to India, where he did nothing for twelve months, and was then posted as band storeman and as unfit for active service because he could not use his arm. The ring finger of his right hand had twitched since the injury—the tremors were worse when not inhibited by his active consciousness of them; he had some pain and stiffness (hypertonus) and loss of power in his right hand. In February, 1919, he was demobilized, and this disability was still present.

In July, 1919, he was appointed policeman at Dover Marine Station, which post he held for twelve years. In 1924 the twitching spread to his right hand; he could still write, but only slowly. In 1928 he complained of stiffness and loss of power in his right knee (hypertonus). In 1929 the sensation of "pins and needles" occurred in his hand and arm; about this time his wife noticed that he held himself very stiffly and that his arms were kept in a flexed position. She also stated that they changed houses in that year, and that he used to run on the path uphill to the house, as he found this easier than walking: he tended to drag his foot (hypertonus). The tremors got steadily worse, and because of this he lost his position, as he could neither write nor walk properly. *From 1931 to 1934* he was keeper at a level crossing, his wife performing most of his duties. In the latter year he was dismissed owing to incapacity for work.

In 1934 my notes stated that he presented the full clinical picture of the Parkinsonian syndrome: tremors no longer unilateral, blank expression, forward gait and posture, and dry flat monotone. In addition there were signs that neuritis was affecting his radial, ulnar, and median nerves. *He is going slowly downhill*, and one of his most prominent symptoms is his frequent desire to be moved in bed—a symptom quoted by some authorities.

COMMENTARY

This case shows all the characteristics of Naville and de Morsier (1932).

1. In the interval between the injury and the full development of the Parkinsonian syndrome the injured limb remains weak, painful, and subject to sensory disturbances.

2. Tremors and hypertonus almost always appear on the injured side.

3. The syndrome becomes manifest on the injured side.

4. Mental changes are absent.

I regret to say that my representation and that of the other two doctors who had attended him met with no success from the Ministry of Pensions in 1934.

Ashford, Kent. JOHN C. HODGSON, M.D.

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Reviews

AMERICAN MEDICINE

Physicians and Medical Care. By Esther Lucile Brown. (Pp. 202. 75 cents.) New York: Russell Sage Foundation. 1937.

American Medicine. Expert Testimony Out of Court. Two volumes. (Pp. 1,435; 3.50 dollars the set.) New York: The American Foundation. 1937.

Here are two books dealing with much the same field, the one perhaps unduly small, the other unnecessarily large. The field that they cover is American medical education and the conditions and methods of American medical practice; but it may not be really fair to compare them, in the matter of size at all events, since they differ radically in presentation and object. The smaller book, admirable in format in every respect except in the absence of an index, is by Esther Lucile Brown of the Department of Statistics of the Russell Sage Foundation, and is issued by that Foundation as one of a series of monographs dealing with the present status of certain established or emerging professions in the United States, under the title *Physicians and Medical Care.* The larger work, entitled *American Medicine,* is published in two volumes, not very easy or convenient to handle though well printed, by the American Foundation, with the qualified co-operation of a formidable medical advisory committee, again as one of a series of studies in government. This place of each of these books in its series is of some importance to remember as it has determined to a material degree the method of assembling and presenting the content, as well as the volume of that content itself. Each book deals entirely with American medicine and conditions, without any reference to professional education and conditions of practice elsewhere; nevertheless most of the problems discussed are the same as, or very similar to, those of this country and have a direct and important relationship thereto. Each book, in its particular way, is a valuable contribution to knowledge of fact and formation of opinion which no one interested in the subjects dealt with can well afford to neglect.

In some two hundred easily read pages *Physicians and Medical Care* presents a summary, compact, comprehensive, and fairly complete, of the conditions of medical education and practice in the United States and of the organization of the medical profession in that country. Each section leads up to a description of the present-day situation by the historical method. This approach through history is not at all laboured, but is essential to the understanding of the position to-day, and is illuminating in many ways. It shows how recent and how rapid have been the improvements and reforms which have brought American medicine to a relatively favourable phase, and explains alike some of the crudities which, compared with this country, still seem to remain in its organization and practice, the character of the needs of those who entered the profession at an earlier date, and the relative timidity of outlook in the presence of urgent, peculiar, and difficult problems. With regard to this last it is said that "medicine is one aspect of the general civilization of a country. Its quantity and quality form an index of the level of that civilization. Recent changes in the nature and distribution of health service reflect diverse alterations in the political, economic, and philosophical concepts of our national life." This important truth is often forgotten. The several sections of the book deal with medical education, with professional associations, with the number, distribution, and income of practitioners, with the new forms of medical service now in the experimental stage—whether under the auspices of industry, of hospitals, or of voluntary medical groups—and with the question of providing adequate medical care for all the people either by a health insurance system or by State Medicine. All these matters are presented in an admirable and very effective way.

The method adopted in *American Medicine* offers a complete contrast to this, but, of its kind, the work is almost equally well, if too abundantly, done. The favourite American practice of a questionary sent to a selected and supposedly representative clientele was chosen. The main questions related to the adequacy and availability of medical care, to the general principles which should determine its organization, to the nature of the education which would produce the best supply, to the limits of specialization and the conditions which should control it, to group practice, to the proper place of hospitals, to public health organization, to socialized State Medicine, and to voluntary or compulsory health insurance or to what is called "limited State Medicine" as alternatives thereto. This last envisages "the evolutionary extension of the present functioning of government in the field of health and medical care," and "an integration of the public health services with private practice, an intimate understanding and co-operative development of State Medicine and private medicine, neither of which can apparently reach its ultimate development alone." Some of this is a little vague, and the method by question is itself of doubtful value, but in this inquiry it seems to have been relatively well used. As might be expected the answers were voluminous and of varied value. In the several sections of the book a vast number of extracts from these answers have been set out. This has been done with skill, with impartiality, and in a manner to make them as effectively useful to the inquirer as possible. As is said on behalf of the Governing Committee of the Foundation in an introduction: "Some have worked out their thoughts with labour, have tested them by their experience, subjected them to every challenge they know, and even then offer them tentatively. Others with no great amount of thought have stated emotional preferences with great vehemence." But, as is also said, "the interest and purpose of this report is to illuminate and not to prove. . . . We have been aiming at an analysis of the situation that would take all, and not merely some, of the pertinent factors into account. We have not, at this point, been concerned to find solutions for the problem or for any particular part of it. On the other hand, we have wanted to etch in the present picture fully, and, by demonstrating its complexity, avoid over-simplification in the application of remedies." The result is two volumes of very great interest, offering abundant opportunity for selection; not to be read through, but highly valuable for reference both as containing many wise views and conclusions and as presenting a suggestive picture of American medical practice.

PAIN IN THE KIDNEY

Kidney Pain. Its Causation and Treatment. By J. Leon Jona, D.Sc., M.D., M.S., F.R.A.C.S., M.C.O.G. (Pp. 94; 61 figures. 7s. 6d.) London: J. and A. Churchill. 1937.

The mechanism of kidney pain has been investigated by Dr. Leon Jona, who became interested in the subject by observing the renal pelvis when distended by opaque material on the *x*-ray screen in cases he had under treat-

ment at the Women's Hospital in Melbourne. Dr. Jona was led to his problem by considering that the pelvis of the kidney was a hollow viscus with a nerve supply comparable with that of other organs in the abdomen. He has made numerous observations by pyeloscopy, and by attaching a recording manometer to the ureteric catheter he has been able to measure and record the fluctuations of pressure in the renal pelvis under physiological conditions and under the influence of drugs. He has extended his work to dogs and has compiled a useful introduction to a newly explored field of pathology.

The kidney pelvis and ureter form a system of two sets of hollow chambers, the calyces and infundibulum, and a series of muscular contractile tubes, the collecting tubules, the communicating channels between calyces and infundibulum, and the ureter. The pressure record of the normal renal pelvis shows a series of large waves representing the contractions of the infundibulum, on which are superimposed small waves from contractions of the calyces. The general pressure can be affected by posture and by altering the intra-abdominal pressure; adrenaline and pituitrin cause contraction of the renal pelvis and atropine relaxes it; caffeine contracts, ergot relaxes it. The author has noted various forms of dysfunction of the renal pelvis apart from stone, and suggests methods of treatment. The main classifications are interference with the neuromuscular mechanism, pathological conditions in the urine or urinary tract, reflex effects from organs with related nerve supply, and general diseased states of the body. Spasm of the pelvis and ureter is generally relieved by quinine given in doses of 5 grains three times a day for a few days; atropine may be used in addition. Atony is generally relieved by eserine, strychnine, or morphine. The author has drawn largely from general physiology in putting together this interesting little book.

MEDICAL STATISTICS

Principles of Medical Statistics. By A. Bradford Hill, D.Sc., Ph.D. (Pp. 171; 6s. net.) London: The Lancet, Ltd. 1937.

It is not without significance that both in the foreword, contributed by the Editor of the *Lancet*, in whose columns the subject-matter first appeared, and in the author's preface to this book, the importance of statistical method in *clinical* work is stressed.

That knowledge of and even training in statistical methods are necessary for members of the public health service has long been admitted, but appreciation of the value of arithmetic guided by logic—a fairly accurate definition of statistical method—in clinical work has been slow. There are two reasons for this. The first is that the assembling of clinical or pathological data implies knowledge and experience of a special kind which have involved years of training, and it is natural that the investigator should believe that this, the first step, is the most important, as of course it is. The other reason is that to become an expert statistician, in the technical sense, requires as much training as to become an expert clinician or pathologist. That the particular qualities characterizing the expert physician and the expert statistician might be combined in the same individual is possible; but it is a possibility not likely to be realized very often. If the clinical investigator must choose between clinical and statistical learning, plainly it is his statistical education which must be economized. That, however, does not mean that he can dispense with all statistical knowledge. A Jack of all trades and master of none is no doubt a sorry sight; an even sorrier is he who knows more and more of less and less. The youth who studies French with the ambition of being mistaken for a Frenchman is foolishly optimistic; he who declines to study French at all, on the ground that he will never speak French like a Frenchman, is not a wise man. A knowledge of French considerably short of Voltaire's has its value.

This reflection is relevant to the present subject. Actually, as editors know to their cost, statistical errors are often quite elementary violations of fundamental logical principles, overlooked because of the complexity of the details. In theory nobody needs to go to school with a statistician to learn that in a controlled experiment the "treated" and "untreated" groups should be *in pari materia*. Nobody needs a statistician to tell him that before one draws some inference from a difference between the recorded rates of mortality of a disease, or between the frequency of some necropsy finding in different places or at different times, we must be satisfied that the times and places are fairly comparable. But, in practice, unless one does acquire a certain amount of experience in detecting such errors and some knowledge of the ways in which they may be avoided, these elementary mistakes will continue to be made.

The special merit of Dr. Bradford Hill's book is that he gives much of his space to the illustrations of the kind of mistake which is commonly made. The professional statistician "has no burning desire to be called in as an expert witness at the conclusion of the case for the plaintiff (on a subject-matter he may not fully understand) to say that this is 'significant' and that is, statistically speaking, nonsense. It even requires some equanimity to be unmoved when he is transferred to the dock on a charge of being merely an armchair critic or a confirmed sceptic. In other words, neither party to the transaction is particularly happy." As the author says, there is only one way of escape. "The worker in medical problems, in the field of clinical as well as preventive medicine, must *himself* know something of statistical technique, both in experimental arrangements and in the interpretation of figures."

Dr. Bradford Hill has provided the medical reader with the means of self-instruction. The book is short, lucid, and practical. Anybody who has read it carefully, with a pencil and a piece of paper beside him which he has used, will not be in a position to criticize the methods of Karl Pearson or to enter the lists with Professor R. A. Fisher; but he will certainly have learned how to avoid many errors and how to present the conclusions of his researches in a logical way.

GROUNDWORK OF CLINICAL NEUROLOGY

The Basis of Clinical Neurology. The Anatomy and Physiology of the Nervous System in Their Application to Clinical Neurology. By Samuel Brock, M.D. (Pp. 354; 72 figures. 21s.) London: Baillière, Tindall and Cox. 1937.

"A successful approach to the understanding of disease of the nervous system requires a thorough knowledge of neuro-anatomy and neurophysiology." With this axiom Dr. Samuel Brock introduces his *Basis of Clinical Neurology*, in which he succeeds in compressing the essentials of this knowledge in a very readable form. The chief difficulty in a book of this kind is that the physiology of the nervous system, even more than that of other systems, is constantly developing, and with this growth of knowledge old theories and even some old observations have been put on the scrapheap. Dr. Brock meets this difficulty by giving short summaries of the most recent work on various questions, leaving the student to formu-

late his own views from the divergent and sometimes discordant theories and observations of different workers. This indeed seems to be the most satisfactory method of presenting the subject, and the author has shown wisdom and restraint in leaving questions open when a dogmatic statement or prejudice in favour of one theory might well prove erroneous. This applies especially to such questions as sensation, aphasia and apraxia, and the various problems arising in vascular disease of the brain. In dealing with some subjects which lie on the borderland between physiology and pathology, such as the healing of nerves after division, the causation of trophic ulcers and Charcot joints, and the mechanism of hydrocephalus, to mention only a few, the author's touch is less sure, and statements and suggestions are made which cannot easily be brought into line with the known facts. These subjects, by their nature, do not admit of a simple physiological explanation, and for that reason might well have been omitted from a book of this kind. But when he keeps more strictly to anatomy and physiology little fault can be found with Dr. Brock's book, which shows wide knowledge, care in choice of material, and skill in its presentation.

ELEMENTS OF HYGIENE

A Handbook of Hygiene for Students and Teachers. By Cyril G. Eastwood, B.Sc., M.B., Ch.B., M.R.C.S., L.R.C.P., D.P.H. (Pp. 358; 151 figures. 6s.) London: E. Arnold and Co. 1936.

Dr. Cyril Eastwood's handbook of hygiene is based upon his course of lectures in elementary physiology and hygiene in the University of Leeds and at the City of Leeds Training College, and may therefore justly claim to have in some measure already stood the test of experience. The aim of the author is to maintain the physiological approach from which the advance is made to hygiene and its applications. The six parts of the book are entitled: Biological and Physiological Foundations; Nutrition and Dietetics; Hygiene of Children; Diseases of Children; Hygiene of the School; and Hygiene and Education. The information supplied appears in general well suited to those for whom it is intended, though the ventilating system of the House of Commons is, we think, not one which should be revealed to the simple-minded. In any case it is some years now since the fire in the Clock Tower was replaced by a fan.

Notes on Books

In their small book, *Emanotherapy* (Baillière, Tindall and Cox, 7s. 6d.) Dr. F. HOWARD HUMPHRIS and Dr. LEONARD WILLIAMS set out to convey clear information on a useful therapeutic agent, and to indicate those diseases in which emanotherapy has been found of service. The preface expresses a hope that this book may fill a niche in the literature of little-known remedies, and the authors make acknowledgement to friends on the Continent and in England for help in the attainment of the knowledge which they here summarize.

The late Dr. T. D. Savill's *System of Clinical Medicine* first appeared in 1905 and now reaches its tenth edition under the editorship of Dr. AGNES SAVILL and Dr. E. C. WARNER (Edward Arnold, 28s.). This work differs from current medical textbooks in that it approaches medicine from the point of view of symptomatology, a method which the author believed would be of great help to the senior student and the practitioner. Dr. Savill's original introductory chapter, which gives a clear explanation of his aim, has been retained in this as in every previous edition.

Preparations and Appliances

A CHEAP DEVICE FOR POSTURAL DRAINAGE OF THE LUNGS

Mr. ROBIN PILCHER (University College Hospital) writes: Bedsteads designed for postural drainage may be regarded as an unjustifiable expense in small hospitals where they are rarely required, and for hospital patients continuing postural treatment at home their cost is prohibitive. The device illustrated here offers some of the advantages of the special bedsteads, costs little, and can be made by anyone with a little knowledge of joinery. It consists of two wooden platforms of the same size as the bedstead on which they are to rest. The lower is rigid, the upper is made in two halves hinged to a central transverse bar, and can be raised to the form of a wedge by a block placed beneath it. The block slides in a chamfered slot on the lower platform. The height of the wedge can be varied by using blocks of different sizes or by introducing boards between the block and the transverse bar of the upper platform. This bar projects beyond the edges of the platform, its ends being shaped to form handles by which the platform can be raised for the introduction or removal of the block without disturbing the bedding or the patient. The actual dimensions depend on the size of bedstead to be used, but a useful height for the block is 10 inches. It has been used at this hospital in the treatment of suppurative conditions of the lungs, and within the limitations imposed by its simple structure has given satisfactory results. The first model was made by Mr. H. Roberts, technical assistant to the Surgical Unit, to whom I am also indebted for the drawings.

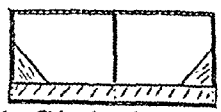


FIG. 1.—Side elevation of block.



FIG. 2.—Side elevation.

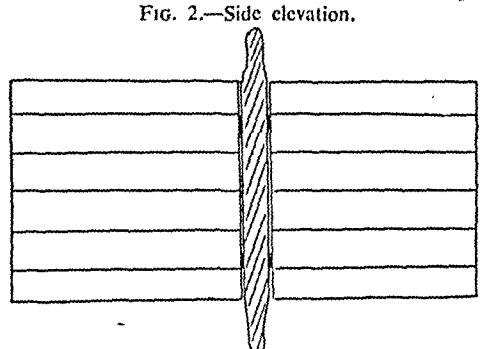


FIG. 3.—Plan of upper platform.

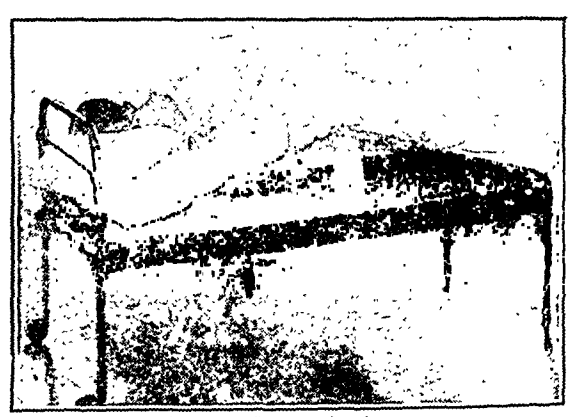


FIG. 4.—The device in use.

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DIETETIC MALNUTRITION

Graham Lusk, in his standard work on *The Science of Nutrition*, defines "nutrition" as "the sum of the processes concerned in the growth, maintenance and repair of the living body as a whole or of its constituent parts." In these days, when the words "nutrition" and "malnutrition" are so loosely used, it is necessary to have this, or some equally good, definition clearly in mind, for then only can it be understood why it is that perfect nutrition is an indispensable condition for the maintenance of health, and why it is that imperfect nutrition (malnutrition) is a dominant factor in the production of ill-health. The recently published and final report of the Mixed Committee of the League of Nations on *The Relation of Nutrition to Health, Agriculture and Economic Policy*[1] does not deal with nutrition as so defined. It is not concerned with the processes involved in nutrition nor with their disturbance in causing imperfect nutrition. It is not concerned with imbalance or excesses of food constituents, with over-eating or with disuse of the adaptive functions. Such causes of imperfect nutrition are outside its scope. Nevertheless, throughout its pages the word "nutrition" is frequently used when "food" is meant and would have served the purpose better.

The report deals, in fact, with the relation of food to nutrition, health, agriculture and economic policy. It is a treatise on "dietetic malnutrition": a state of ill-health widespread in its distribution, having a great variety of symptoms, due usually to poverty but often to ignorance, and preventable only by reorganization of our ways of life—social, agricultural, and economic—so as to ensure for everyone a diet that will satisfy physiological needs. The report is an authoritative and comprehensive contribution to this the most important aspect of the nutrition problem—a problem of world-wide urgency. It deals first with the principles of correct feeding: principles, it may be assumed, well known to readers of this *Journal*. The symptoms of dietetic malnutrition are mentioned here and there throughout its pages, chiefly in those of Part II. They indicate the extent to which the body as a whole and its constituent parts may be disturbed in structure or in function by the habitual use of improperly constituted food; the part of the body affected and the severity of its disturbance depending on the kind and degree of the food fault or faults, the age and sex of the subject, the climatic conditions under which he lives, and the work he has to do. There are symptoms referable to the skin, the bones and teeth, the eyes, ears and nose, the gums, mouth, tongue and pharynx, the gastro-intestinal tract and its associated organs, the endocrine glands, the heart, blood vessels and blood, the nervous and reproductive systems, the lungs, kidneys, and bladder—and, to the mind. Some of these symptoms make up the clinical pictures of disease-entities, known to medicine by special names and catalogued in the *Nomenclature of Diseases* under this or that system of the body. But some, such as subnormal growth in height or weight, poor physique, lack of vitality and activity, chronic fatigue, headache, insomnia or disturbed sleep, irritability, nervousness, apprehension, vague aches and pains, may be the evidence of undefined general ill-health to which no diagnostic label, other than that of malnutrition, can be attached. Further, faulty nutrition, consequent on the habitual use of faulty food, lowers the resistance of the body to infection; these two combining to produce a great variety of maladies.

This much and more may be gleaned from the report, for in following the course of dietetic malnutrition throughout life it provides information of profound interest and importance. Because of the substitution of artificial feeding for mother's milk, infants become subject to gastro-intestinal and pulmonary disease to which they frequently succumb. The mortality rate among infants attending a welfare centre in Chicago was found to be 8.4 per cent. when they were artificially fed, against 0.15 per cent. when they were wholly breast-fed, or fifty-six times greater. Anaemia, imperfect calcification of the developing teeth, imperfect growth of the jaws, rickets, osteoporosis, and poor growth and condition of the body as a whole are other symptoms of malnutrition in infants. In early childhood malformations of the bones, dental defects, and abnormalities of the pharynx are alarmingly common:

> "In a recent inquiry (1931) in London schools it was revealed that among children of 5 years of age there were 67 to 88 per cent. of cases of abnormalities of the bones, 67 to 82 per cent. (according to the gravity of the symptoms) of cases of adenoids, enlarged and septic tonsils, and other disorders of the pharynx, 88 to 93 per cent. having badly formed or decayed teeth. Although there is no proof that all these defects could have been avoided by improved feeding there is good evidence that many would not have developed under such conditions."

There is, however, the best of evidence—that given by Miss Margaret McMillan in her book, *The*

[1] Allen and Unwin, 40, Museum Street, London, W.C.1. 1937. (Pp. 327. Price 7s. 6d.)

Nursery School (1931)—that by proper nurture, which includes perfect nutrition as above defined, all or almost all of them can be avoided. Consequent on malnutrition, children of this age have a lowered resistance to such diseases as measles, scarlet fever, bronchopneumonia, middle-ear disease, and nephritis. "Below the age of 3 years measles is a particularly deadly disease, and there is suggestive, but not conclusive, evidence that the high mortality rate at this and older ages could be reduced by better nutrition of such children." The wise physician and the prudent medical officer of health will be content to act on the suggestive, and not to wait for the conclusive, evidence. Thus it is that "in the early years of school life young children are already 'damaged goods'"—a phrase in which there is the echo of Miss McMillan's voice. "They frequently show evidence of previous defective feeding and lack of care in deformity of the bones of the limbs, chest, and head, in bad dental structure often associated with decay, in deafness to a greater or less degree, in running ears, septic tonsils, and adenoids. . . . These indications of disease are not generally, from the present medical point of view, regarded as evidence of malnutrition . . . although this is probable." They are certainly evidence of malnurture.

"Malnutrition is usually diagnosed in school children on the basis of subnormal growth and weight and general sickly appearance of the child. Nothing is more important than that a new attitude should be adopted towards the problem, for whereas such results of improper feeding as subnormal growth and weight and undefined general ill-health can usually be rapidly improved by better feeding conditions the more chronic conditions due to earlier defective dieting cannot be so easily remedied, but continue to act as a handicap throughout life. . . . Prevention rather than treatment of disease must be more and more emphatically stressed and, so far as this can be procured by better feeding, this ought to be done."

In this connexion attention may be drawn to the Committee's recommendation of the "Oslo breakfast" as a method of improving the nutrition of school children—a recommendation we heartily endorse. There is suggestive evidence, too, that increased tendency to fractures, to rheumatism and rheumatic conditions with their tragic associates—chorea and heart disease—may have a malnutritional basis. So from infancy and childhood through adolescence to adult life malnutrition leaves its trail of morbidity. Amongst adults every fresh inquiry in town and country reveals evidence of patent or latent malnutrition. We may conclude this survey, though leaving much unsaid, with a reference to latent malnutrition of dietetic origin:

"Many of the well recognized 'deficiency diseases'—such as scurvy, rickets, beri-beri, pellagra—are caused by severe, prolonged deficiency of one or other of the essential protective vitamins. Except for rickets they are, fortunately, of relatively rare occurrence in temperate regions, and their full manifestation can usually be prevented by a minimal intake of the appropriate protective factors. Much more common are the latent states of malnutrition which may give rise to no visible disease—states which might be called pre-scurvy, pre-rickets and pre-osteophorosis, pre-pellagra, pre-beri-beri, pre-caries, and the formation of teeth of imperfect architecture. The opportunity that lies before the science of preventive nutritional medicine rests upon the knowledge that these states exist and upon the proof of the necessity for striving after *optimum* nutrition rather than *minimum* nutrition."

There is in all countries, the report assures us, a tendency towards better nutrition, consequent on the use of better food. But the movement is checked and obstructed at certain points, and requires to be directed and accelerated. Such improvement as has taken place is due in part to a better understanding of dietary needs, in part to a general increase of income and prosperity and to ease of transport, and in part to improvements in the methods of production and distribution of agricultural products. But poverty, ignorance and indifference remain formidable obstacles to progress. The disparity between food prices and income increases the difficulty experienced by the poorer sections of the community in obtaining an adequate supply of proper foods. Consequently, "millions of people in all parts of the globe are either suffering from inadequate physical development or from disease due to malnutrition or are living in a state of subnormal health which could be improved if they consumed more or different food. That this situation can exist in a world in which agricultural resources are so abundant and the arts of agriculture have been so improved that supply frequently tends to outstrip effective demand remains an outstanding challenge to constructive statesmanship and international co-operation." How the Committee proposes to relieve, if not to resolve, this tragic situation we must leave the reader to learn for himself by a study of this most valuable report.

HAEMOPHILIA

Haemophilia is nowadays one of the most familiar diseases, not only to medical men but also to the general public, which finds it a frequent topic in the daily press and an occasional theme of detective stories. It is therefore interesting to be reminded that Dr. J. C. Otto's "Account of an Haemorrhagic Disposition Existing in Certain Families," the first adequate description of the disease, was published in 1803, and that as late as 1893 A. E. Wright, happily still at work in medicine, brought out the fact that the clotting time of haemophilic blood

was prolonged. These facts are taken from a monograph on the clinical and genetic aspects of haemophilia by Dr. Carroll Birch, based on a personal study of ninety-eight cases and seventy-five families in the neighbourhood of Chicago.[1] It is a fascinating study, from which the most expert will learn something fresh about haemophilia. The series of photographs, portraying haemophiliacs and their lesions at various ages, describes more forcibly than words the relentless tragedy of the disease, and the genealogical charts show how the tragedy continues to be played out and to wring the hearts of successive generations.

The three outstanding findings in haemophilia are said to be a history of habitual and immoderate haemorrhage in males, beginning early in life; prolongation of the coagulation time of the blood; and heredity. The coagulation time of the blood undergoes considerable spontaneous variations, ignorance of which, coupled with premature publication, is responsible for the large numbers of ephemeral cures for haemophilia. The coagulation time tends to be at the highest in the spring. In the worst phases the bleeding time may be prolonged and a few petechiae may appear in the skin, but these phenomena are unusual and the blood platelets and retraction of the clot are normal. Haemorrhage from trauma and haemarthrosis are the characteristic lesions, but spontaneous and visceral haemorrhages, such as epistaxis, haematuria, gastro-intestinal bleeding, and haemorrhage into the central nervous system, occur more often than is generally realized. The prevalent impression that haemophiliacs improve greatly at or after adolescence is erroneous. None but the very mildest cases survive, for 57 per cent. die during the first five years of life and 95 per cent. by the age of 40. In adult life the hazards of the teething process are over, exposure to physical trauma is less after the game-playing period is past, and the patient is usually limited willy-nilly in his activities by crippling deformities.

In this large series of cases and family trees there was no single instance of haemophilia in the female. On the other hand, the statement sometimes made that haemophilia is never transmitted through the male is quite unfounded, and such transmission is shown in eleven of the seventy-five genealogical charts. It is uncommon because few haemophiliacs live long enough to have children. Children of haemophiliacs do not show the defect. Their sons are normal and the descendants of these sons are normal; their daughters, however, all carry the trait, and theoretically 50 per cent. of the daughters' sons should have haemophilia. Thus the only members of a haemophilic family who can safely beget children are the unaffected males. "The life of a haemophiliac and that of his family, especially his mother, are so tragic that it certainly behooves those who may transmit the disease to refrain from having offspring."

[1] *Hemophilia: Clinical and Genetic Aspects.* By Carroll LaFleur Birch, M.D. University of Illinois Press. (2 dollars.)

THE LEAGUE AND HOUSING

The League of Nations, through a commission of its Health Organization, is turning its attention to housing, the importance of which from the League's point of view became evident during the European Conference on Rural Hygiene in 1931. The programme of the commission covers what is rather clumsily described as the "hygiene of the environmental conditions in dwellings," meaning the temperature, freshness, humidity, and movement of the air, also noise, sun exposure, natural and artificial lighting, and population density. Campaigns against air pollution will also be considered, together with methods of water supply and sewage and waste disposal and the administrative and legislative aspects of housing hygiene. National committees have been formed in seven countries, including the United Kingdom, to study the provisions for hygienic housing and to establish co-operation in the international sphere. Two of the committees into which the commission has divided have so far made reports. One of these, under the chairmanship of Dr. G. W. C. Kaye, superintendent of the Physics Department of the National Physical Laboratory, has been investigating the subject of noise from the point of view of housing. A number of details are given of measures which might be recommended for dealing with the noise problem, some of them involving only minor expenditure, such as good internal planning of the dwelling, the choice of the quietest rooms as bedrooms, the cultivation of public opinion regarding the use of powerful wireless sets and other sources of disturbing sounds, and the use of suitable ear stops. Other measures call for expenditure by individuals or public authorities, as, for instance, town planning, with a view to locating dwellings in quiet areas; co-operation between local authorities and industrialists in the lay-out of noisy plant; reduction of noise at the source, as by the use of silencers on motor vehicles; and insulation of dwellings against external noise by double windows, partition walls, resilient floor coverings, and sound-absorbent materials for ventilating ducts and the like. One matter to which the report draws attention is the installation of quiet sanitary appliances. In some modern flats the only sound which comes from the adjoining flat is that of the cisterns, but it can be most penetrating, aggressive, and disturbing. The committee states that experience in many countries has already shown that the measures it advocates may be successfully employed to lessen the nuisance of noise in many situations. Another committee which has reported has been concerned with questions of temperature and air purity in dwellings. This committee, which sat under Dr. C. E. A. Winslow, professor of

public health, Yale School of Medicine, found itself less able to reach conclusive results, largely owing to the fact that on the standards of temperature and humidity very different views are held in different countries, deriving from differences in climate and national custom. Thus British authorities are in favour of a lower range of temperature for the home than their American colleagues, although their views on minimum air movement are the same. Again, while British and American hygienists prefer very slight air movement, in France, due perhaps again to long-standing custom, the aim is to prevent any air movement at all, however slow, in the immediate vicinity of the individual, as British travellers in French trains know to their cost. Again, the standards applied in different countries for the floor space or cubic content of family dwellings vary on account of differences in national customs and standards of living. At present this part of the work does not seem to have got beyond the stage of vague generalities, but the commission is only at the threshold of its task.

RECENT WORK IN BIOCHEMISTRY

Launched five years ago as a comprehensive work under the direction of a distinguished editorial committee and with eminent contributors, the *Annual Review of Biochemistry* was everywhere accorded an enthusiastic welcome by biochemists. It fulfilled a most urgent need in supplying an authoritative account, by experts in their respective fields, of the major contributions made to the progress of the science in the preceding year. With further appearances it has become recognized as the most valuable single volume on biochemistry published in the course of the year. The sixth volume[1] upholds the standard of excellence set by its predecessors. The general editorial policy remains practically unaltered, but if there is any slight tendency to change it is that the several contributors, particularly those dealing with the most rapidly expanding branches, do not attempt quite so much in the way of an all-embracing survey, but rather restrict themselves to those aspects of the newer work with which they have become best acquainted. This has the advantage of making the reviews more authoritative, though it appears at first as if it might lead to some important omissions. This risk is obviated, however, by the policy of changing the personnel of the team from time to time, so that each section can be treated a little differently each year and new topics included. Those sections which progress at a relatively slower rate do not find a place in every volume, but only when they are deemed ripe for survey. Indeed the chief difficulty besetting the editor and his committee lies in respect of the choice of the right time for a particular section of this kind to be introduced. It is a testimony to their judgement and discrimination that no subject of fundamental importance is left for long without finding its rightful place in the *Review*. We are glad to see represented among the timely surveys on this occasion the application of microchemistry to biochemical analysis. Every branch depends to some extent upon advances in analytical methods, and none more so than the field of clinical biochemistry. This new chapter is an invaluable guide to those who constantly seek to improve upon their existing technique. As might be expected, the vitamins and hormones continue to claim a great deal of attention. In the hormone section the adrenal takes a foremost place, and the reviewers observe that ". . . this gland may occupy a position in the whole endocrine system second only in importance to that of the pituitary itself." Professor Marrian and his colleague have done a great service in pointing the way in which hitherto puzzling and apparently conflicting facts and theories of the different investigators regarding the essential activity of the cortical hormone can be brought into harmonious relation with each other. In the vitamin field much attention has been paid to the unravelling of the vitamin B_2 complex, and the nature of its various components is now much clearer. Moreover it has become possible to study vitamin B_1 deficiency on similar lines to those adopted for vitamin C—namely, by determination of the level of its urinary excretion. Enough has already been said to make it clear that no specialist in biochemistry can afford to neglect the opportunity provided by this volume to keep himself abreast of recent developments, no matter in what direction his particular interest lies. Only one final comment remains to be made. The omission of a subject index has now been rectified, but the *Review* still lacks a uniform system of references.

[1] *Annual Review of Biochemistry*. Edited by James Murray Luck. Vol. vi. London: H. K. Lewis and Co. (£1 2s. 6d., postage extra.)

ORAL VACCINATION AGAINST COLDS

The medical profession is judged, as a whole and individually, largely by what it can do for minor maladies. For this reason it is all the more unfortunate that, while immense strides have been made in the treatment of many severe infections, our resources in dealing with more common and apparently trivial infective conditions have been almost stationary for many years. Failure has perhaps been most signal, because it has been notwithstanding considerable effort, in the case of the common cold. It is now known that in at least some colds a filter-passing virus is concerned, but this observation has not led to any useful advance in prevention or treatment. It seems likely that more than one cold virus exists, with the consequence that an attack by one—or any method of artificial immunization in which it might be employed—would not necessarily protect against others. Opinion has been divided for years, and still is, on the importance of bacteria in this connexion; if they are admitted to consideration this brings into the question at least six species, some of which are known to include many antigenically distinct types. It is manifestly impossible to secure specific immunity against such a multitude of potential invaders, and it is therefore not surprising that attempted prophylaxis with bacterial vaccines has had on the whole unconvincing results, although it remains a method which is widely used. There are signs that the injection of bacterial

vaccines may yield place in popularity to their administration by the mouth. For this almost too simple proceeding there is the precedent of Bezredka's antityphoid oral vaccine, and there is a certain amount of experimental evidence that the swallowing of bacteria ordinarily associated with the respiratory tract, such as the pneumococcus, does produce some degree of immunity. This method is strongly advocated by Rockwell *et al.*,[1] whose treated cases, with untreated controls, now amount to over 2,000; their present paper reports a careful study of the last 200 of these. The result of the treatment has throughout been a marked diminution in the frequency of colds and, indeed, in the number of days of illness from all causes. This study appears to have been in progress for nearly five years, and although the composition of the vaccine has been varied a good deal the results appear to have been uniformly on the favourable side. The authors' argument from the theoretical standpoint is not altogether convincing, more particularly when they invoke heterophile antigen as the clue to their success: there is really very little known about the production of resistance to one bacterial species by immunization with another, and although it is to be hoped that this very complex problem may prove capable of solution on some such lines non-specific immunization is still in its earliest infancy so far as any genuine knowledge of its *modus operandi* is concerned. Nevertheless this method seems worthy of more extended study; it has the advantages of safety and simplicity, and can be repeated frequently with little trouble to the patient and none to anyone else, which should at least secure it a full and fair trial.

PHYSICAL ASPECTS OF RADIUM AND RADON THERAPY

An excellent little pamphlet on this subject has been issued by the Health Department of the Australian Commonwealth.[2] It is written by Dr. C. E. Eddy and Mr. T. H. Oddie of the Government *x*-ray and radium laboratories at the University of Melbourne, and in very brief compass epitomizes the main physical principles which are the basis of radium therapy. A section on the physics of radio-activity is followed by a description of the various forms of radium applicator, and this in turn by an account of the properties and method of extraction of radon, and its mounting for therapeutic use. Tables are given showing the rates of growth and decay of radium emanation, and the rise of gamma ray activity after the containers have been filled. Examples of the calculations involved in estimating the content of radon containers are followed by an illustrated description of the methods of filling them. The advantages and disadvantages of radium as compared with radon are briefly and clearly set forth, and the pamphlet ends with an account of the all-important question of gamma-ray dosimetry. A short but comprehensive and representative bibliography of the various questions considered indicates the lines upon which more extensive reading may most profitably be conducted. The foreword, which is contributed by the Director-General of Health, emphasizes the need for physical and clinical co-operation, and the opening paragraph may be quoted with advantage:

"The efficient practice of radiology is a science in which the skill, judgement, and experience of the clinician require to be supplemented by exact measurements of a physical nature involving the use of delicate physical instruments and the services of a specialized physical laboratory. Only when the application of radiation in the treatment of human disease is placed on a basis of exact scientific measurement can this remedy be safely and effectively administered. Because of this, the radiotherapist must possess a knowledge of the physical aspects, not only in order to understand clearly the technical literature, but to enable him to assess the relative significance of the various therapeutic techniques."

Practising radiotherapists as well as laboratory workers will find this booklet a useful and convenient source of reference; to those who are beginning the study of radiotherapeutics it will form an excellent introduction to some of the fundamental principles upon which a very complicated and difficult study is based.

SULPHANILAMIDE IN URINARY INFECTIONS

In the therapeutic advances of the past few years the urinary tract has had its full share of advantage and more. The ketogenic diet was the first innovation which proved capable of really sterilizing the urinary tract within a few days; it was succeeded shortly by mandelic acid, which proved even more effective and much easier to administer, although the control of urinary *p*H and the nausea sometimes occasioned by medicaments required for reducing this are still practical difficulties of some consequence. If therapeutic progress had stopped here it would still be reckoned as one of the most striking achievements of modern medicine. The contrast is complete between the regular and rapid effect of this treatment and the futility of most of the efforts with urinary antiseptics which preceded it. Now, however, another specific and highly effective remedy has appeared in sulphanilamide. It is known that this drug acts on certain other bacteria besides the haemolytic streptococcus, and the original prontosil has in fact been successfully used more or less empirically for urinary infections for some time past. The first adequate and controlled study of which we are aware of the action of sulphanilamide in urinary infections is now reported by Dr. Meave Kenny[1] and his associates at the British Post-graduate Medical School, and their principal finding is that *Bact. coli* infections can regularly be cured within a few days: this series is composed of forty-six cases, including sixteen of pyelitis or pregnancy, and among them there was not a single failure. On the other hand, infections by other coliform bacilli and by cocci were found in a smaller number of cases to be more resistant. An interesting feature of this work is the comparison of clinical effect with the *in vitro* behaviour of bacteria causing the infections in urine containing the drug. Although sterilization was invariably secured *in vivo*, it did not always result *in vitro*, which is very much the reverse of usual experience with anti-

[1] *J. Lab. clin. Med.*, 1937, 22, 912.
[2] *Physical Aspects of Radium and Radon Therapy*. By Authority: L. F. Johnston, Commonwealth Government Printer, Canberra.

[1] *Lancet*, 1937, 2, 119.

septic action. As the authors point out, the drug presumably acts in the tissues as well as in the urine itself, and the *in vitro* test is therefore not a complete replica of its action in the body. Nevertheless, there appears to be another possible explanation of this discrepancy. The authors state that the action of sulphanilamide in urine is effective "over a fairly wide range of *p*H values, 5.2 to 6.8," although evidence or authority for this statement is not given, and they adjusted urine for *in vitro* tests to *p*H 6, which is the average for normal urine. On the other hand, Helmholz and Osterberg[2] state categorically that sulphanilamide is much more bactericidal in alkaline urine. Full details are not given and their work on the subject is evidently still in progress, but they secured "a great increase in bactericidal power" in a urine containing sulphanilamide by altering the *p*H from 6 to 7.5; a urine containing much excreted sulphanilamide and of *p*H 6 was also found to have less bactericidal power than a urine of *p*H over 7 but containing considerably less of the drug. In the light of these facts it seems likely that the failure of bactericidal action in some of Kenny's *in vitro* tests was due to the urine having been made too acid for optimum bactericidal action. It would be interesting to know whether the urine during sulphanilamide treatment actually becomes more alkaline, as Helmholz and Osterberg suggest; if not, it could easily be rendered so, and the advantage, which they point out, of being able effectively to treat proteus infections, in which the urine often remains persistently alkaline, is very great. These authors also claim to have shown that the conjugated sulphanilamide in the urine rather than the free is the active bactericidal agent. The whole of this subject calls for further detailed study, but it is already clear that here is another valuable weapon for the treatment of infections which used sometimes to be resistant to all efforts to eradicate them. According to Kenny its advantages are not only the rapidity and certainty of its effect but ease of toleration and comparative cheapness.

PROFESSOR ADOLF MEYER

Many of Professor Meyer's pupils met last April at the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, Baltimore, to honour him on his seventieth birthday. This coincided with the beginning of his twenty-fifth year as director of the clinic. The first session was celebrated by the presentation of papers by eight of his many one-time students who are now working in most of the English-speaking countries and also in France, Switzerland, Norway, China, and Japan. Several of these papers were printed in a special number of the *Archives of Neurology and Psychiatry* (April, 1937) dedicated to Professor Meyer. The breadth of Meyer's interest in the personal, the social, the physical, and the constitutional facts presented by his patients—or, to use his words, his interest in "the psychobiologically integrated individual"—is adequately reflected in the varied topics discussed. These range from a neurolopathological discussion of syphilitic arachnoiditis of the optic chiasm; a neurosurgical report of the removal of a colloid cyst from the third ventricle; physiological studies of the cerebral circulation and conditioned reflexes; psychopathological reports on amnesia, metaphor, aversion, negativism, and the pathogenesis of hallucinations and delusions; clinical psychiatric studies of children presenting decreasing intelligence quotients; to articles dealing with special aspects of psychotherapy and prognosis. Meyer's career has shown the gradual unfolding of his unique abilities in formulation, teaching, and stimulation which have had a profound effect on the development of modern psychiatry. Meyer left Switzerland for the United States forty-five years ago, and worked in Illinois, at the Worcester State Hospital, Massachusetts, in New York—developing as part of the State Service what has become the New York Psychiatric Institute—and since 1910 he has been associated with Johns Hopkins Hospital. It is hoped that his collected writings will soon be published, so that they may reach a wider medical public.

[2] *Proc. Mayo Clin.*, 1937, 12, 377.

MEDICINE IN THE MODERN WORLD

The medical profession has many public critics, and some of its most widely read detractors are in fact of its own household. No better antidote to calumny can be imagined than the recent collection of addresses by Lord Horder.[1] He covers a very wide range: he shows the firmness of his historical foundation in "The Hunterian Tradition"; his sense of the current needs of the time in "National Physique," "Old Diseases and New," and "Towards National Health"; and manifests his comprehension of the part which his profession ought to play in the modern world in his studies of the doctor as a humanist, as a contributor to the public happiness, and as a member of society. There is here no panegyric of the excellence of medicine and the medical man. This is a book by a physician at the head of his profession, and the man or woman who reads these essays, which persuade of their essential truthfulness by their quiet sanity, must feel that if they represent the mind of a leader and his opinions about medical men the profession must indeed be sound at heart. Lord Horder's work shows also his gifts as a writer and thinker. He has a way of expressing truths in clear images which strike home to the ordinary feelings of plain people. Lord Horder indeed may say, "*Nihil humanum a me alienum puto.*" He has spoken and written about medical subjects, but there is nothing here that the layman cannot understand, that is not a part of real human life. He sets his brother doctors an example which, if all followed, would greatly enlarge and strengthen its corporate spirit: that of general culture side by side with professional erudition.

[1] *Health and a Day.* By Lord Horder of Ashford. J. M. Dent and Sons, Ltd. (7s. 6d.)

On the occasion of the annual Buckston Browne Dinner on November 11, it is proposed to hold an exhibition of works of art by Fellows and Members of the Royal College of Surgeons of England, which will remain open for about three weeks and will be held in one of the Museum Rooms at the College. Any Fellow or Member wishing to exhibit some of his work, either pictorial or sculptural, is asked to communicate with Dr. John Beattie, Royal College of Surgeons, Lincoln's Inn Fields, W.C.2, as soon as possible.

ANAESTHESIA IN GENERAL PRACTICE

This is one of a series of articles, contributed by invitation

GENERAL ANAESTHESIA IN DENTISTRY

BY

W. S. McCONNELL, M.B., B.S.

The dental surgeon who calls in the services of an anaesthetist requires an anaesthetic which, though brief, must be tranquil, and must ensure that the patient feels nothing of the extraction and is able to walk home afterwards. He needs also the co-operation of the anaesthetist in supporting the head, using a gag, and maintaining an efficient throat pack. I propose to deal with the administration of anaesthetics to children and adults, both in the surgery and in the nursing home or private house, discussing the various factors which modify the choice of the method used and the manner in which the anaesthetist may assist the dental surgeon. The views expressed in this article are my own, and I have confined myself to a description of those methods which I constantly employ.

In recent years there has been a tendency to employ complicated nitrous-oxide-and-oxygen machines when simpler equipment would serve equally well. Unless the anaesthetist can give a satisfactory nitrous-oxide-and-air anaesthetic, using only a nose-piece, tubes, bag, and cylinders, it is unlikely that he will obtain the best results from a complicated machine, and, what is more, he may blame the apparatus for his failure. In private practice I use the simplest type of apparatus: cylinders of nitrous oxide and oxygen controlled by foot-keys, a rubber double bag, a small mixing chamber connected to the nose-piece, and a mouth inhaler.

Anaesthesia for Children

For the small child of 3 or 4 years of age ethyl chloride given on an open mask is satisfactory, because with nitrous oxide only a narrow margin divides too light an anaesthesia with associated cries and voluntary movements from partial asphyxia with cyanosis and jactitation. If the child is nervous it may be impossible to use nasal nitrous oxide, for the nose-piece will not be tolerated sufficiently close to the face, or the child may breathe exclusively through the mouth. A full face mask will overcome the difficulty, but will certainly scare the child and will produce but a brief period of anaesthesia. In such a case ethyl chloride may be given on the corner of the upturned bib, and should the child move the head there is no difficulty in following such movements with the napkin. It is important not to allow the intensely cold towel or bib to press on the child's face; two tubes of ethyl chloride should be available, as one may be knocked from the hand and broken.

Whatever method is chosen much tact and gentle handling will be necessary. My rule is to try persuasion for ten minutes: if this fails the parent is asked to decide whether force shall be used or less drastic measures, such as the production of sleep by drugs in bed at home. When told beforehand that he is to have a tooth extracted, and that he will be given something to breathe to take any pain away, even a nervous child will follow simple instructions. Much depends on the impression given to the child by the first anaesthetic in the dental surgery; there should be no question of creeping up and taking him by surprise. Every step of the procedure should be explained before the administration in fairness to the child and to the dental surgeon, for if any deception is practised he may lose the confidence of his small patient. In hospital practice it is not uncommon to remove eight temporary teeth in a small child at one sitting. Much depends on the skill of the anaesthetist as to whether the patient can be kept sufficiently quiet and still for such an extraction, using nitrous oxide and air or oxygen. If there is any doubt ethyl chloride should be employed.

Necessary Preliminaries

The child should be made comfortable in the chair, with the occiput well supported by the head-rest, helped by cushions if necessary in the case of very small children. If the legs are dangling uncomfortably over the edge of the chair and the child appears likely to slide off he should be made to sit tailor-wise with the legs crossed on the seat. The position of the teeth to be extracted should be noted, and also whether a Mason's gag will be required to change to the other side of the mouth. An attempt should be made to insert a dental prop before the induction of anaesthesia. Explain to the child that all good children go to sleep with their mouths closed, but that on this one occasion it is necessary to have it open; should persuasion fail the anaesthetic is started, but it is important not to allow the child to become completely anaesthetized before a Mason's gag is inserted.

In children deeply anaesthetized with the mouth closed the tongue may cause some respiratory obstruction, and spasm of the muscles of the jaw will result. Attempts to force the mouth open are more than likely to damage or displace a deciduous tooth, but by resting a gag in the mouth in the early stages of the induction it is possible to open the mouth gently as the anaesthetic proceeds. If the anaesthetic has been carried too far for the child to open its mouth voluntarily the dental surgeon should place a hand firmly on the child's forehead while the anaesthetist depresses the chin with one hand, inserting the gag into the already opened mouth and not using it to force the jaw open.

Respiration

The one safe guide to the progress of anaesthesia with ethyl chloride is the respiration. It is important to hear or see every breath from the moment of induction, and if from any cause the respiratory movements cease the drug should be withheld. In the early stages of induction the child may hold its breath; at such times the spray of ethyl chloride is stopped, the mask, however, remaining in position. When respiration begins once more further quantities of ethyl chloride are given until the breathing becomes automatic. If ethyl chloride is administered only in the presence of regular respiration possible causes of anxiety may be avoided. It should be apparent if respiration ceases that the cause is breath-holding during the induction, obstruction due to the tongue, spasm of the glottis at a later stage, or, finally, gross overdosage.

Spontaneous movements of the child's limbs are disregarded, and no reliance is placed on the presence or absence of stertor, the size of the pupils, or the direction of the squint. How much deeper the anaesthesia is carried after automatic breathing is established depends upon the amount of work to be done, but in no case should it be pushed until there is a snatch in the respiration, or until the breathing becomes shallow. No obstruction of the airway can be tolerated during ethyl-chloride anaesthesia, and in most cases the jaw must be held forward by a very definite effort on the part of the anaesthetist, particularly when lower molar teeth are being extracted and the fingers of the dental surgeon tend to depress the tongue.

During induction with a gentle stream of nitrous oxide blown from a distance of an inch or so from the nose the attention of the child may be distracted by a suitable story. This should be continued during the moments of awakening, and few children detect any loss of continuity. Most children can be persuaded to breathe through the nose: if not, then a mouth-piece through which nitrous oxide is blown should be employed in preference to covering the mouth with a hand, for it is not difficult to asphyxiate a child by such obstruction to the respiration.

A moistened marine sponge to which a length of tape has been securely fastened is always inserted as a throat pack before any extraction, as deciduous teeth readily slip out of the forceps. It is placed so as not to carry the tongue back but to form a diaphragm at the entrance to the fauces. If pushed too far back it may cause the patient to retch and displace the dental prop. If with nitrous oxide and air the procedure threatens to be prolonged added oxygen makes for a smoother and more tranquil anaesthesia, but with the disadvantage of possible nausea afterwards. No attempt is made to work with a definite percentage of nitrous oxide and oxygen, the mixture being varied to meet the requirements of the patient.

Anaesthesia for Adults

The patient should sit upright in the chair, with the head-rest supporting the neck and occiput. Saliva collecting in the mouth during the induction is then less likely to trickle to the back of the throat and cause coughing or retching, and the tongue, even if depressed by the fingers of the dental surgeon, is less likely to obstruct respiration. The legs should rest naturally and not be wedged against the foot-rest. The anaesthetist should be shown the teeth to be extracted, and should note the presence or absence of such fragile appliances as gold bridges or porcelain crowns, so that he may avoid resting a Mason's gag on them. A mouth prop is inserted by the dental surgeon. Induction is slow, and the metal nose-piece is held at a distance while nitrous oxide is allowed to stream towards the nose. The valve on the nose-piece should not be closed during the induction, as the expiratory difficulty so produced may cause the patient to breathe through the mouth. In cases of partial nasal obstruction or persistent mouth breathing a mouth-piece becomes essential, but the insertion of the throat pack may restore nasal breathing. The guide to anaesthesia is the change to automatic respiration. The dental surgeon is invited to begin the extractions, not by the spoken word, but by a sign or gesture. Many patients describe how they have heard an anaesthetist say "Right you are" or "She's ready now."

Assisting the dental surgeon during the extractions consists very largely in keeping out of his way. When a right lower molar tooth is being removed the left arm of the dentist, who will be standing behind the patient, should be allowed to encircle the patient's head; during the extraction of upper central and lateral teeth the nose-piece should be temporarily raised, and while upper molars are being removed the head should be held as still as possible and a finger employed to retract the lower lip and protect it from the pressure of the forceps. A Mason's gag should be inserted by sight, the blades resting on molar teeth and two fingers of the opposite hand clearing the lips as the closed gag is placed between them. The instrument is locked in the open position and held against the cheek by the pressure of an open hand, so that it will follow all the movements of the patient's head. If gripped rigidly by the handles it will rock on the teeth if the head is moved, with possible damage to fillings and inlays. At the end of the extractions the prop and mouth-pack are allowed to remain in position until recovery of consciousness is complete.

Difficult Cases

Two classes of male adults present some difficulty—namely, the alcoholic who fights and struggles when partially anaesthetized with nitrous oxide and the man who struggles before anaesthesia is complete and tears the nose-piece off while he is still conscious. If the extractions are few in number and unlikely to present any difficulty it may be possible to maintain anaesthesia in the first group with nitrous oxide and added air or oxygen. A mouth-piece may be essential, as such patients when struggling breathe very deeply and may change over to mouth breathing without warning. For the second type the only hope is a quick induction, but at the best this will be uncomfortable.

For such cases I have found satisfactory a small dose of evipan given in the upright position in the dental chair and followed by nasal gas. This method should not be used unless the patient has a friend who can take him home after resting under supervision in the surgery for a period of up to one hour afterwards. Evipan is not employed as a substitute for nitrous oxide or just because the patient "hates gas." It is suitable for the difficult patient with easy teeth, or the easy patient with difficult teeth, but not for the difficult patient with difficult teeth, as the dosage must of necessity be small.

Inquiry is made into the patient's past medical history, the pulse is counted for one minute to exclude irregularities, and the arms are inspected to find a suitable vein. A strap is placed round the pelvis of the patient and well down under the back of the dental chair, since there may be a tendency to slide down. A cushion on the arm-rest enables the forearm to remain comfortably in extension. A rubber tourniquet is applied, the skin cleaned with spirit, and the injection begun. The dental surgeon supports the head and jaw to ensure an airway and inserts a prop before consciousness is lost, maintaining it in position until anaesthesia is complete, since there is a likelihood of its falling out should the patient yawn. At the conclusion of the injection a pad should be placed over the site and the forearm flexed to avoid possible leakage of blood. If no dental prop is used to keep the mouth open during the induction much larger doses of evipan may be required, as some difficulty may be experienced in opening the patient's mouth.

The first sign of the onset of sleep may be seen when 2 c.cm. have been given; half a minute should be allowed to elapse before further quantities of the drug are injected. The object is to give the minimum amount of evipan to

produce a short period of anaesthesia. If too little is given the patient, when stimulated, may become quite uncontrollable; if more than sufficient is given the return to consciousness may be much delayed, and it may be some hours before the patient is fit to leave the surgery. With those addicted to alcohol, or in a highly nervous or apprehensive state, doses up to 5 or 6 c.cm. may be necessary.

The maintenance of an airway in a patient under evipan in the dental chair is particularly important. Obstruction such as is sometimes seen under nitrous oxide, when of necessity the dentist's fingers depress the tongue, cannot be tolerated. The amount of evipan given should never be enough to depress the respiration in any marked degree. Stimulation of the return of consciousness can be obtained by the inhalation of smelling salts or of carbon dioxide-oxygen mixtures.

Dental Operations in Nursing Homes

The induction of anaesthesia for dental operations in a nursing home, whether the patient is a child or adult, is similar to that for any major operation, and basal narcotics such as nembutal, avertin, and paraldehyde (which are described in another article in this series) may be used. To maintain anaesthesia ether vapour and oxygen or nitrous oxide and oxygen may be blown through a tube inserted through the nostril, leaving the mouth free for the dental surgeon. For the operation of removal of difficult wisdom teeth, in which the jaw is constantly depressed by the dentist, it is an advantage to employ an endotracheal tube, but for multiple extractions a short tube passed through one nostril into the oral pharynx will serve. A useful length for such a tube is the distance measured from the tip of the nose to the lobe of the patient's ear; the tube will not reach the vocal cords, and when employed it is necessary for the anaesthetist to support the mandible throughout the operation. If the patient's head is to be covered with towels care should be taken to see that the eyes are closed, as they may be injured by contact with such coverings in the movements of the head involved in a difficult extraction.

The progress of anaesthesia throughout the operation is estimated entirely by the respiration. The patient is maintained at a level of anaesthesia at which he does not cough when, from the manipulations of the dental surgeon's fingers on the throat pack, the posterior pharyngeal wall is irritated. At the conclusion of the operation the anaesthetic is discontinued and the throat pack removed. If the patient does not cough within a minute or so carbon dioxide and oxygen are blown through the nasal tube. On the return of the cough reflex the nasal or endotracheal tube is removed, but the mouth-prop is allowed to remain. If the prop is taken away too soon some patients tend to clench the teeth and allow the tongue to cause obstruction or grind the teeth, with the possible dislodgement of an inlay or filling. Once in bed the patient is turned well over to one or other side to ensure that any oozing from the sockets dribbles out of the mouth.

The following officers of the Women's Medical Service for India have received the Coronation Medal: Drs. H. M. Franklin, M. C. Murphy, E. Hamilton-Browne, H. M. Lazarus, Grace Stapleton, L. de Menezes, Ruth Young, G. Patel, N. Mucadam, Torrance-Allen, L. Ghosh, Roulston Mitton, K. McDermott, H. Keane, A. Dodhi, H. Acheson, D. Bolton, E. Wingate, U. Morton, I. Keess, N. Proctor-Sims, J. Orkney, C. L. Houlton.

"THE SURGEON'S LOG"

AN ANALYSIS OF THE HEALTH OF THE CREWS OF A LARGE FLEET OF MERCHANT SHIPS

BY

W. ARTHUR TATCHELL, M.R.C.S., L.R.C.P.

Medical Superintendent, Blue Funnel Line and Glen Line

There is no standardized "surgeon's log," each shipping company having its own form; nevertheless, though details may vary, the principal items recorded are the same. Our log is rather comprehensive, giving the name of the port where the ship is lying or to which it is bound, the numbers of the crew and passengers, the daily temperature, and a list of the sick, their treatment and progress. At the end of each voyage the log, with abstracts of cases and a list of accidents, however trivial, is either brought by the surgeon or forwarded to the medical superintendent at the head office of the company. There it is carefully examined by the medical superintendent and a summary of cases recorded. The log, when labelled and numbered, is placed in order with hundreds of others for future reference when necessary.

A Year's Statistics

These final statements, which I have made annually, are, I think, both enlightening and instructive, and it occurred to me that the publication of one year's statistics of the crews of a large merchant fleet would be of interest and possibly useful to those who are responsible for the health of seafaring men. To know what the principal diseases are from which seafaring men suffer and which cause them to be put off duty may help to guide those responsible for their health in an intelligent direction in the matter of prevention.

Health at sea, as on land, is largely ruled by conditions of living, food, and available treatment. The different standards for these set by owners will, I believe, be largely reflected in the entries in the surgeon's log. Climate must be taken into account. A North Atlantic company will probably have different results from one whose ships are trading for half their voyages within ten degrees of the equator. The fleet of the company concerned in the present analysis consists of eighty-five ships, varying in tonnage from 3,066 to 14,646 tons gross. The policy of the owners is to have a surgeon in each ship, although legally required to carry one in only fourteen of their ships.

The ships from which the statistics are taken sailed between the United Kingdom, and the Straits Settlements, China, Japan, the Dutch East Indies, and Australia. I have omitted for reasons of accuracy our Western Australia ships, which sail between Singapore and Fremantle, the transpacific service between Hong Kong and Vancouver, ships plying between New York and the Far East, and those flying the Dutch flag. The crews are composed of Europeans and Chinese; two ships were staffed entirely with Europeans. The Chinese are drawn principally from Hong Kong and Shanghai. All crews are carefully medically examined before signing on, the Chinese by the ship surgeon at the port of engagement. All are vaccinated at least once every three years, while the eyesight of each officer is tested once a year and a full medical examination made before each promotion. The food supplied is of good quality, well prepared, and not rationed.

The average time for the voyages was 119 days, and the average crew per ship was eighty-one, composed of forty-six Europeans and thirty-five Asiatics. In 1935 the total number of "men-days" at sea was 1,268,000, and the time lost through sickness and accident was only 4,786 days, giving the remarkably low percentage of 0.4. The average time lost per man was 1.26 days for Europeans and 0.69 day for Asiatics. This does not necessarily

include the days spent in hospital by the twenty-three Europeans and seventeen Asiatics who were landed abroad.

Chief Causes of Illness

The chief causes of illness were inflammatory and febrile conditions, especially influenza. There were only a few cases of malaria. The number of days on which Europeans were off duty from all febrile causes was 633, being 18.9 per cent. of the total days lost by Europeans from all causes—that is, 3,356. For Asiatics the figure was ninety-nine days, a percentage of the total of 1,430 days lost at sea of 6.9. Asiatics were less susceptible to influenza, only forty-six days being lost by them from this cause, or 3.2 per cent., whereas the corresponding figures for Europeans were 433, or 12.6 per cent. The same observation could be made with regard to "colds and coughs." It might be presumed that the Asiatics working in the hot engine room and stokehold and experiencing the great contrasts in temperature when they came on deck would suffer more than those whose work was on deck alone. But it appears that mere change of temperature, apart from other factors, is not prejudicial.

Injuries are classified under the headings of "fractures," "contusions," "wounds," and "burns and scalds," and the number of days off duty on board ship from all four injuries was 660 for Europeans, or 19.7 per cent., and 319, or 22.3 per cent., for Asiatics. Rheumatism and inflammation of joints seem to affect the Asiatics more than the Europeans. Neuralgia deserves mention with rheumatism, as *both* occur chiefly on encountering warm to hot weather. This is also the opinion of other observers.

Tropical diseases on board ship are very rare. Only six cases of malaria occurred among the 2,690 Europeans and three among the 2,065 Asiatics. There were seventeen cases of diarrhoea among Europeans and two among Asiatics; one European and one Asiatic had typhoid, and two Europeans had dysentery and enteritis (cholera). These were the only diseases of a tropical nature which were recorded, though it is possible that a few cases of coastal fever may have been classified with influenza as being clinically indistinguishable therefrom. The percentage loss of time from tropical diseases was 3.2 for Europeans and 2.5 for Asiatics.

The commonest types of skin diseases are those caused by various microsporons. Prickly heat rashes are confined almost entirely to the Tropics, and generally yield quickly to treatment with the use of fresh and the avoidance of salt water. Boils and pustular rashes are occasionally met with. Pediculosis is rare, there being adequate facilities on board the ships in the way of baths and washhouses for clothes to ensure personal cleanliness. Other types of skin troubles are so infrequent as to be represented by isolated cases. It may be noted that cuts, abrasions, ulcers, burns, and scalds, also most of the other skin affections, heal more slowly in the Tropics than in temperate climates. This may be attributable to the almost constant moist state of the skin rendering it impossible to keep lesions dry, and affording a more suitable medium for the growth of germs.

Effects of the Sun

There were eighteen cases of sun and heat strokes among Europeans and three among Asiatics. One must discriminate between the cases attributed to the direct rays of the sun and those due to heat. I think the vast majority of cases were, and are, due to heat. Real sunstroke is reputed to occur at two periods of the day—namely, the rising and setting of the sun, whether the atmosphere be clear or dull, and the "stroke" is caused through either the eyes or the back of the neck. I have not come across a case at sea, but the two authentic cases I saw in China happened during the setting of the sun on dull days at an altitude of 3,500 feet. Heat stroke can occur at any period of the day, but seldom in the early morning or evening. I may add that our officers have derived great benefit, including freedom from fatigue and headache, from wearing neutral-tinted glasses on the bridge and while working on deck during both bright and dull days. Racial susceptibility to disease is not well marked on board ship in our experience of the voyages considered. Pulmonary tuberculosis was rare, but a few cases were reported among the Chinese. Cases of beriberi, which is common in South China, were extremely rare. The latter are difficult to diagnose if the disease is in its early stages when the patient is examined, but any sufferer is soon restored to health with the good food supplies of meat, fish, eggs, and vegetables.

As to the morale of the crews, both the Asiatics and Europeans are a steady class of men. The amount of time lost through vicious propensities is negligible. Those members of the medical profession or general public who regard the seafarer as a hard-drinking morally lax person are entirely in error. At sea deck games are encouraged, and when in port football and cricket matches are frequently arranged; also other recreational facilities are provided in the company's clubs at various ports.

Conclusions

The different diseases, etc., recorded here are those causing loss of time only. There were many others mentioned in the logs, but their effect in this respect was insignificant. Considering the statistics as a whole and that the average time lost per man during the year was one day only, the conclusion must be that the seafaring life is a comparatively safe and healthy one on the routes and under the conditions considered where medical aid is constantly present. Is this a fair sample of the vast majority of trading routes and the experience of other shipping companies?

I wish to express my thanks for the valuable assistance of Dr. J. A. Tobin and my secretary, Mr. A. B. Tytler, in preparing the statistics from which this material has been compiled.

VITAL STATISTICS OF MALTA

The vital statistics of the Maltese islands (Malta and Gozo) showed a remarkable improvement in several respects in 1936, though the Chief Government Medical Officer (Dr. A. V. Bernard) in his annual report emphasizes the fact that in vital statistics based on small populations considerable fluctuations may occur in short periods due to ephemeral and fortuitous causes. The islands have a population of 262,165, which is about ten times as great as it was 1,000 years ago. The birth rate is steady at 33.8 per 1,000, and has not differed markedly during the last ten years; it stands where the birth rate for England and Wales stood fifty years ago, and where the birth rate for British India stands at present. The death rate for 1936 (17.61) shows a considerable drop, and compares with an average of 22.3 for the last nine years. The infant mortality, though still at the very high figure of 190 per 1,000 births, also registers a big fall from the average of the previous nine years of 280. The mortality of children under 5 has declined to 66 per 1,000 from rates which during the last ten years have approximated to 100. The high infant mortality accompanies a very high birth rate, and the population of Malta is steadily increasing at a more rapid rate than in countries where a low infant mortality is coupled with a diminishing birth rate. Of the notifiable diseases the commonest is undulant fever, of which there were 873 cases in 1936 (the lowest figure since 1927) and fifty-two deaths. The decrease in the incidence of this disease must be ascribed either to a diminution in the diffusibility and virulence of the infecting agent or to an increased resistance to the disease among a larger proportion of the population due to immunity derived from high prevalence. An undulant fever research station has been at work since the beginning of last year, and progress is also being made in the scheme for setting up a milk pasteurization plant.

Nova et Vetera

JOHN SNOW (1813-58)

A PAINSTAKING STATISTICIAN

Although Charles Creighton was a great historian his judgements of the significance of scientific achievements have seldom been confirmed by posterity. His heroes, Pariset and Robert Watt, live only in his pages; the fame of even Pettenkofer, whom he admired, is dim. Edward Jenner, on the other hand, to whom he attributed so many evil and so few good qualities, and Robert Koch, at whom he jeered, are not likely to be forgotten. Two epidemiologists Creighton despised were William Budd and John Snow. To Budd he devoted only a depreciatory footnote, but Budd's "fallacies or paradoxes" have been reprinted and his life written. John Snow had even shorter shrift. After describing the epidemiological drama of Golden Square, Creighton wrote:

"The whole incident was seized upon and worked up by Dr. Snow, who had written a speculative essay in 1849 upon the probability of cholera being conveyed by water, according to the similar theory of Parkin in 1832. The Board of Health, having very full data before them of the Soho outbreak in all its aspects (including a whole biological treatise upon the organisms found in water), did not adopt Snow's conclusion, although he had enthusiastic followers at the time, and has probably more now." (*Hist. of Epidem. in Britain*, 2, 854.)

At least Creighton's concluding words are true. The Commonwealth Fund has just reprinted Snow's chief epidemiological papers with Richardson's memoir of him and an enthusiastic introduction by Professor Wade Frost of the Johns Hopkins School of Hygiene.[1]

Snow on Cholera

Whether, having before him the fully documented second edition of Snow's pamphlet (published in 1855), Creighton's sneer at the essay of 1849 were worthy of a historian of his rank may be doubted. But we must not run into the opposite error of sneering at Creighton merely because Snow's "speculations" regarding cholera have proved in the long run much more illuminating than Creighton's own conclusions. It is true that some of Snow's opinions *were* only speculations. He thought that epidemiologically plague, malaria, and yellow fever were *in pari materia* with cholera, and his address "On Continuous Molecular Changes" (also reprinted) might well have seemed to so erudite a man as Creighton superficial. Snow's biopathology was not much in advance of Fracastor's, and not at all in advance of Henle's essay published thirteen years before Snow's. Snow's depreciation of ancient epidemiology does not attest any serious knowledge of the subject. These are, we think, palliations of Creighton's conduct; but only palliations, for his account of Snow's work *is* misleading, and it is well that justice has been done to the memory of an epidemiologist whose strong points and weak points were characteristically English.

Born in 1813 and bred a general practitioner, Snow settled in London, and his contact with medical science was mainly through the Westminster Medical Society (later to become the Medical Society). After 1846 he specialized in anaesthesia, and devoted much of his leisure to the physiology of that subject; he was at work on a treatise on chloroform and other anaesthetics in the year of his death, 1858.

Snow's epidemiology was a labour of love. Professor Frost speaks of him as "endowed with the ability to think in straight lines, and the courage to follow his thought." That is, we think, a well-deserved eulogy. If the devil's advocate retorted that Snow was a man of one idea who did not give much attention to other ideas, that would also be true. But, and this is Snow's supreme merit, he was almost Darwinian in the trouble he took to assemble not some but all of the relevant statistical facts. His hypothesis was that cholera had its biological origin in a vital something which passed into the dejecta of patients. He did *not* suppose that all cases arose from the drinking of contaminated water, but he did suppose that water was the chief vehicle of infection. Therefore he set himself to study the local distribution of cholera in a city having various sources of water supply.

"I felt that the circumstances of the cholera-poison passing down the sewers into a great river, and being distributed through miles of pipes, and yet producing its specific effects, was a fact of so startling a nature, and of so vast importance to the community, that it could not be too rigidly examined or established on too firm a basis."

The Southwark and Vauxhall Water Supplies

Snow's statistical and field investigation was thorough. The case of the Broad Street Pump has such an element of melodrama, and has so recently been summarized by Dr. Harold Scott in his excellent book *Some Notable Epidemics*, that most people think only of it. But, as a piece of field and statistical investigation, we should give even higher praise to the tracing out of households taking the water of the Southwark and Vauxhall Company in 1854 and the statistical presentation of results. Of course Snow did not prove that the customers of the Southwark and Vauxhall Company were actually poisoned by the company's water, but he did show that in the first seven weeks of the epidemic they died of cholera at from eight to nine times the rate sustained by the customers of the Lambeth Company. Further, he made a special investigation of that part of the area in which both companies operated.

"The inquiry was necessarily attended with a good deal of trouble. There were very few instances in which I could at once get the information I required. Even when the water rates are paid by the residents they can seldom remember the name of the water company till they have looked for the receipt."

In the end he concluded that in 286 of the fatal cases the house where the victim fell sick was supplied by the Southwark and Vauxhall Company and in only fourteen by the Lambeth Company. In the other cases the sources were varied. As, according to a parliamentary return the Southwark and Vauxhall Company supplied 40,046 houses, the Lambeth Company 26,107, the disproportion in incidence was enormous. It is true that Snow was not able to ascertain the total distribution by houses in the particular part of the area served by both companies, the figures just quoted are for all areas, so that he did not prove statistically that in houses in the same street the customers of the Southwark and Vauxhall Company were taken and those of the Lambeth Company spared; had he done so the case would have been logically complete, for the factor of elevation—stressed by Farr—would have been neutralized; but that would have been an impossible task for a private investigator. Farr, unlike Creighton, did not sneer at Snow's work; on the contrary, he made special reference to it (in the Seventeenth Annual Report of the Registrar-General), and in his own statistical researches, particularly in his terrible indictment of the East London Company (contained in the report on the epidemic of 1866), twelve years later, virtually adopted and extended Snow's method of statistical investigation. Although without scientific precision, the following remark has some historical interest.

"Many of the people receiving this latter supply [that of the Southwark and Vauxhall Company] were in the habit of tying a piece of linen or some other fabric over the tap

[1] *Snow on Cholera. Being a Reprint of Two Papers by John Snow, M.D., together with a Biographical Memoir, by B. W. Richardson, M.D., and an introduction by Wade Hampton Frost, M.D.* London: H. Milford, Oxford University Press. (10s. 6d.)

by which the water entered the butt or cistern, and in two hours, as the water came in, about a tablespoon of dirt was collected, all in motion with a variety of water insects, while the strained water was far from being clear."

Such was the water supply of part of the metropolis as recently as 1854.

Snow's range was narrower than Budd's, who had the advantages of a wider education and a longer life, but there is much similarity between the work of the two. Snow was a better statistician than Budd and before him in setting the investigation of cholera upon a fruitful line of study; Budd had better opportunities—perhaps a greater flair for field investigations in country districts. Both influenced for good official research and public health administration. It is fitting that the principal writings of both should have been reprinted in the same series.

M. G.

RECREATION AND PHYSICAL FITNESS

BOARD OF EDUCATION HANDBOOKS

H.M. Stationery Office publishes this week two handbooks of recreation and physical fitness; one dealing with youths and men and the other with girls and women. They are profusely illustrated and may be obtained from the Stationery Office or through any publisher, price 2s. 6d. Sir Arthur MacNalty contributes a foreword to each volume.

The New Policy of Physical Education

The handbooks, which have been prepared by the Board of Education, were foreshadowed in the Board's Circular 1445, which was issued early in 1936 and outlined a new policy on physical education for which the lead was given by the British Medical Association when it appointed its special committee in January, 1935. That policy emphasized the importance of better facilities in the schools in the form of gymnasiums, changing rooms, shower baths, playgrounds and playing fields; of more time for physical training and games in the curriculum; of a full supply of teachers trained in modern educational gymnastics; and of the appointment by all local education authorities of organizers of physical education.

The circular has been supplemented and followed up by the Government's scheme for encouraging recreation and physical fitness among those who have left school. The scheme was explained last February in a White Paper (Cmd. 5364) and has now been implemented by the new Physical Training and Recreation Act. A National Advisory Council has been called into being, together with a central Grants Committee. Local area committees are in process of formation over the whole country. A National Physical Training College for leaders is to be established.

Physical Training Organizers

The organizers employed by local education authorities, who are regarded by the Board of Education as the keystone of physical education in the areas where they have been appointed, have already done much not only to improve the standard of physical education in the schools but also to stimulate the enthusiasm of those who have left school. They have induced their authorities to help and they have often been able to advise the various voluntary bodies engaged in recreational work. "Keep-fit" classes are spreading all over the country; the area of playing fields open to the public is growing; open-air swimming baths are immensely popular; and camping and hiking are becoming national pastimes. There is thus to-day both a spontaneous and an official movement towards physical fitness and recreational activities for all.

The two handbooks therefore come at an opportune moment, for their main purpose is to give advice and guidance to all those who are responsible for conducting the activities of youth organizations, clubs, classes, and centres, and for selecting and training leaders.

Guidance for Youths and Men

In the book for youths and men a chapter deals fully with gymnastics in its broadest sense and includes three groupings of exercises: free-standing and floor exercises with a "bite" in them; stronger exercises, some of them with apparatus; and jumping, vaulting, and agility exercises. In combination these groups form a well-balanced treatment. Such a combination is commonly known as a gymnastic table, and a number of tables are given for the use of leaders. Exercises which should be performed with a rhythmic swing have not been overlooked, and there is also a comprehensive list of the various gymnastic exercises. Physical exercises and gymnastics are included in the handbook because these forms of activity give alertness, agility, control, balance, poise, and rhythm.

The teaching and organization of team ball games, national team games, general athletics, swimming, dancing, boxing, skipping, and wrestling are also fully dealt with, and a chapter on camping reflects the popularity of camping holidays. In the appendices there is advice for the organization of athletic sports, swimming sports, and boxing meetings.

Girls and Women

The book for girls and women is arranged under three main headings: general introduction; schemes of indoor training; schemes of outdoor training. A wide range of activities has been included, all of them within the scope of the working girl or woman who wants exercise but has limited opportunities for enjoying it. Differing ages, interests, and physical abilities are all taken into account. There is "keep-fit" work for those who like to take their "daily dozen" in company, and gymnastics for the more energetically inclined. To women and girls who prefer a more aesthetic and musical approach the section on dancing will appeal. A comprehensive survey is made of all the main open-air activities. Hockey, net-ball, cricket, tennis, rounders, stool ball, and lesser team games are dealt with in more or less detail, while swimming, athletics, and camping have chapters to themselves. In this book, as in the companion book for youths and men, the beginner player and the amateur leader as well as the professional coach have been kept in mind.

The International Spa Congress will take place in Budapest, under the presidency of the Archduke Joseph Francis, from October 7 to 14, in association with the inaugural meeting of the Royal Hungarian Academy of Science. A wreath will be placed at the foot of the statue of Semmelweiss, and visits will be paid to the more important thermal establishments in the vicinity. Five sub-committees have been constituted to organize the various scientific lectures and discussions, which will relate to the medical, technical, economic, legal, and propaganda aspects of spa treatment. Special arrangements are being made to exhibit to delegates and visitors the cultural, ethnographical, and tourist characteristics of Hungary. Included in the large and diverse programme of topics for consideration are the importance of thermal baths as regards public hygiene, medical and staffing questions relating to thermal establishments and spas, dietetics, and statistical work at spas. Lectures will be delivered in English, French, German, Italian, and Hungarian. A medical postgraduate course will be held concurrently, and the centenary of the Royal Medical Society of Budapest will be celebrated during the week of the Congress. Further details may be obtained from the Congress Office, Dorottya Utca 11, Budapest V, Hungary.

Local News

ENGLAND AND WALES

Epsom College Pensions

Later on in the year the Council of Epsom College will award two "France" pensions of £30 per annum each to duly qualified medical men in reduced circumstances. Candidates must be not less than 55 years of age, and, if single, must not be in receipt of an income, independently of any allowance from the College or the Royal Medical Benevolent Fund, of more than £100 per annum. If married, the combined incomes of the candidate and his wife must not exceed £150 per annum. Forms of application may be obtained from the Secretary, Epsom College Office, 49, Bedford Square, London, W.C.1.

Child Welfare in Wales

Speaking at the opening of a new maternity and child welfare centre at Glyn Neath during his official visit to South Wales last week, Sir Kingsley Wood said a child population, healthy and sound, was more than ever important to-day, not only for the sake of the children but because the fall in the birth rate had reduced the proportion of young lives in our population while the fall in the general death rate had increased the proportion of the older people. Infant mortality in England and Wales remained at a low level, and during the last ten years the rate of mortality had been less than half what it was at the beginning of the century. This had been largely due to the efforts of the State and the local authorities and voluntary agencies by the improvement in the environment of the child. Social, domestic, and sanitary and better housing conditions had played a great part. While the arrangements for supervising the health of children under the age of 18 months or 2 years were generally satisfactory, he desired to see a more systematic and periodical health visiting of all children under 5 who did not attend school. The further establishment in certain areas of special "toddlers clinics" and of day nurseries was also well worth while. Local authorities had in the main spared no trouble in making provision for destitute children in suitable homes, but perhaps the most important thing to-day was to find the right people to look after the children. Buildings were important but far less so than the staff. Children should not be retained in institutions but in homes under the guidance of people who studied their needs and made them useful citizens. In Wales there had been a continued and considerable expansion of services. In 1926 there were thirteen ante-natal clinics at which about 10 per cent. of expectant mothers attended; to-day there were 104 such clinics, and about 40 per cent. of the mothers attended them. In 1926 there were 250 infant welfare centres and there were over 300 to-day, and nearly 70 per cent. of the children under 5 attended them. He was glad to see that the Commissioner had been able to give, or had undertaken to give, grants towards the erection of twenty-four maternity and child welfare centres.

In an address later in the week to the representatives of the Welsh local authorities at Cardiff, the Minister said he hoped early in the new Session to introduce in the House of Commons two important measures, one to reduce the age limit for the award of pensions to the blind and the other to provide medical care for young persons who had left school.

There was still a considerable housing programme to be undertaken, at least 300,000 new houses being required to complete the slum clearance and overcrowding programme within the present statutory standard. New financial housing provision would have to be determined by Parliament early next year. In co-operation with the industry he hoped to make proposals for securing a reduction in the price of liquid milk to local authorities for the purpose of their maternity and child welfare arrangements. Local authorities would be in a position to extend their present schemes, under which milk was made available either free or at a reduced price, as circumstances might require. The expenditure of local authorities in South Wales on milk and food had more than trebled in the last ten years, and he hoped this policy of extension would be continued. There had been two important achievements in Wales during the past year: both the infant mortality rate and the tuberculosis death rate were the lowest so far recorded in Wales. But while this was gratifying, there were many conditions in the country that called for further treatment and attention.

Light for the Blind

In 1903 Miss Winifred Holt (now Mrs. Mather) and her sister became interested in the welfare of the blind, and founded an association, which three years later became the New York Association for the Blind, to prevent unnecessary blindness and to enable the blind to help themselves. The association flourished exceedingly, and on August 13 Mr. and Mrs. Rufus Mather told an interesting story of the work done by what has now become an international organization. The meeting was held by the kind permission of the Master and Wardens in the Clothworkers Hall, Mincing Lane. An account was first given in simple untechnical language of the association's projects, and two films were shown to demonstrate how an illiterate public could be taught to avoid preventable blindness. Short legends were appended to explain each scene, and these legends could be translated into the language of the country where they were being shown. Preventable blindness, it was explained, might be grouped under the headings of bad living conditions, dirt, insufficient nourishment, industrial accidents, improper lighting, trachoma, and ophthalmia neonatorum. Much had already been done in the United States, South America, and the West Indies. Mr. and Mrs. Mather had personally visited Norway, Denmark, Poland, Hungary, Egypt, Turkey, India, China, and Japan. In each country they had received help and encouragement from the heads of the administrative departments, and as the journeys had been made at their own cost the association had not been put to any expense.

SOUTH AFRICA

Pneumonia in Rand Miners

The report for 1936 of the health department of the Central Mining Rand Mines Group includes a survey of the incidence of pneumonia among the miners and the steps taken to combat this disease. In 1936 lobar and bronchopneumonia accounted for 4.46 per cent. of the total morbidity, and for 36.91 per cent. of the total mortality. Since the figures as far back as 1915 were 6.8 per cent. and 36.41 per cent. respectively, it appears that progress in dealing with this question has not been too satisfactory. During the first decade of the century the mortality from pneumonia alone was nearly twice the present mortality from all diseases, and to this factor may be partly attributed the prohibition of the recruitment of natives from north of latitude 22 degrees south. The practice of inoculation at first produced favourable results, but in recent years its protective value appears to have become negligible. It was suggested that this might be due to a change, clinical or bacteriological, in the type of pneumonia encountered. Careful investigation, however, disproved this theory. The report quotes a statement from the *American Journal of Public Health* (December, 1936) that "at the present time the chief reliance in the field of

prevention must be placed on isolation of the patients." Large-scale therapeutic trials were carried out with massive doses of vitamin A in the form of liver, liver extracts, or concentrated oil preparations. Although favourable results were at first obtained, a further and more extensive trial led to the conclusion that administration of vitamin A had no advantage over symptomatic treatment. Nor did the employment of sodium nucleinate, quinine, pneumococcal vaccine, serum, "omnadin," or "aurodetoxin" produce any significant results. The report summarizes the question by stating that intelligent symptomatic treatment and good nursing still constitute the best means of combating pneumonia as it affects natives employed in mines.

Correspondence

Expulsion of Placenta Praevia in Advance of Foetus

SIR,—Dr. J. W. Nankivell's graphic description, in your issue of September 11 (p. 527), of one of the most unusual happenings in midwifery practice must have interested all ardent obstetricians. The likelihood of such an occurrence is greatly lessened in these days by the improved modern methods of management of cases of unavoidable haemorrhage—even Caesarean section in certain instances of the complete placenta praevia. Things were very different in the last and preceding centuries, and the writers of those days make many references to cases in which the delivery of the after-birth preceded that of the child.

William Smellie himself describes cases and discusses their possibilities. Dr. Nankivell would, I am sure, enjoy reading Case 158 (McClintock's edition; vol. ii). Called by a midwife to a case of flooding, Smellie "found the placenta pushing through the external os [the term in his day for the vaginal orifice]; and the delivery of this was immediately followed by that of the child, which was alive, although the placenta came first. The midwife told me that when she found the placenta presenting, she was cautious of touching it with her fingers, remembering that when she attended my lectures I had observed that the death of the child, in flooding cases, might be owing to its losing blood from the laceration of the cake." Later he says, "but in such cases the child is commonly dead."

Amongst other writers Francis Mauriceau (in 1683) and Pierre Dionis (1729) describe these cases, and they both refer to "an old Practice amongst Midwives, to warm Wine in a Skellet, and put the after-birth into it before they separate it from the new-born Child; fancying that the Spirits of the Warm Wine are carry'd to the Child by the Navel String, and bring it (as they express it) to Life again. But tho' this is of no service to it, the Surgeon must by no means declare against it; for if the Child, having lost too much Blood, recovers not, the good Women will not fail to charge him with the murder of it."

This rare natural occurrence has even been advocated as a desirable method of treating certain cases of placenta praevia. Sir James Simpson, in 1841 and 1844, read papers before the Obstetric Society of Edinburgh to suggest and support this line of treatment. He considered it less dangerous, and one can see his point, than the practice then prevalent of forcibly extracting the child as quickly as possible after turning it, whatever the degree of dilatation of the cervix.

In Dr. Watt Black's *Selected Obstetrical Works* of Sir James Young Simpson (Edinburgh, 1871) there is given a "general tabular view of one hundred and forty-one cases in which expulsion or extraction of the Placenta preceded the birth of the child."

All's well that ends well, but I feel certain that Dr. Nankivell, and the family doctor who acted so promptly, would like to have had available for such a case a similar Maternity Emergency Service to that which Professor Farquhar Murray started in Newcastle-on-Tyne in 1935. Dr. Smellie would have given the opiate Dr. Nankivell prescribed, but how delighted he would have been to witness the improvement in the woman's condition brought about by the house-surgeon's intravenous saline and Dr. Facey's blood-transfusion.—I am, etc.,

Sheffield, Sept. 11. MILES H. PHILLIPS.

The "Other Half" of Medicine

SIR,—In your issue of August 28 Dr. Strauss saw fit to publish in full a letter written to another medical man about a patient. After some remarks Dr. Strauss states his belief that treatment given by him will result in a spontaneous remission of this patient's symptoms within six months.

Dr. Strauss's method of advocating the treatment he practises is not unfamiliar in connexion with forms of therapy employed outside the medical profession, but inside the profession, at least in the half to which I belong, it is still regarded as objectionable. May I venture to hope, Sir, that in future you will discourage the publication within your columns, by third parties, of reports from one medical man to another, whether for purposes of disparagement or otherwise.—I am, etc.,

London, W.1, Sept. 8. D. EVAN BEDFORD.

Sulphanilamide in the Treatment of Gonococcal Infections

SIR,—The necessity for a specific remedy in cases of gonococcal infection is so great as to be an international problem. Any research with this object in view is to be encouraged, particularly as gonococcal infection has long been a Cinderella among diseases from the aspect of investigation. It was therefore with considerable surprise that we read in your columns of September 11 the deprecatory account of the clinical value of sulphanilamide in gonococcal infections. The statement by Dr. Anwyl-Davies that sulphanilamide administered orally in acute cases of gonorrhoea is ineffective cannot be allowed to pass unchallenged.

During the last fourteen months we have had considerable interest in the action of *p*-aminophenylsulphonamide (prontosil album) in the treatment of gonococcal infections, and during this period it has been used in about 100 cases. Our early experiences showed that with an oral dosage as low as grains v t.i.d. occasional cases were seen showing rapid and marked improvement. With this dosage the number of cases responding were few but encouraging. Later, various schemes with a larger dosage were instituted, including the dosage utilized by Dees and Colston.

Recently we have given prontosil album orally in doses of grains xv t.i.d. for several weeks if necessary. Cases of acute gonococcal urethritis in the male have received this amount, some with no other treatment, some with daily irrigation with saline, and some with daily irrigation with pot. permang. 1 in 8,000. We have found that

the results in conjunction with daily urethral irrigation with pot. permang. are most encouraging, and were considerably better than when saline or no urethral irrigation was used. Of twenty-nine cases of acute gonococcal urethritis subjected to this dosage excellent results have speedily followed in twenty-one. Frequently the discharge has ceased and all symptoms have been relieved within three days. None of the twenty-one cases developed any complications. In other cases excellent results have been obtained in acute epididymitis and acute prostatitis. Favourable results have also been experienced in some cases of acute salpingitis and in vulvo-vaginitis.

Surely it will be a great calamity if the experience of Dr. Anwyl-Davies and his report to the Therapeutic Trials Committee of the Medical Research Council is allowed to stultify further research with a remedy which is of greater promise than any treatment that has been available in recent years.—We are, etc.,

D. ERSKINE.
A. G. JOHNSON.
V. E. LLOYD.

Guy's Hospital, S.E.1, Sept. 13.

Athletic Injuries of the Knee-joint

SIR,—After reading Mr. W. E. Tucker's excellent and very practical paper in your issue of September 11 (p. 525) one felt it a pity that he had not included in his otherwise very comprehensive article one or two further points which are of constant value to the general practitioner and yet not as widely recognized as they should be.

1. *Adhesive Strapping.*—While one is delighted to find Mr. Tucker stressing the importance of adequate fixation for a torn ligament or other joint structure, he omits to mention firm adhesive strapping, applied in successive layers in various directions so as to give support to the torn ligament while allowing activity in other directions. This is much more acceptable to the patient than plaster-of-Paris, which excludes him from his bath and has more weight and precludes most forms of sport. I have found adhesive strapping most valuable for all but complete tears, and even severe injuries yield to it. I had occasion to treat a man who tore most of the internal lateral ligament of his knee on the first day of a ski-ing holiday. After the knee was controlled by adhesive strapping in many layers he was able to continue his ski-ing for the rest of his three-weeks' holiday, provided he avoided Telemark turns on the injured leg, and he went all over rough snow and up and down mountains. After removal of the strapping some light adhesions were cleared up by cycling.

2. *Manipulation Without Anaesthesia.*—While agreeing heartily with Mr. Tucker that manipulation by force is resorted to far too often in these cases, I feel that he has not drawn sufficient attention to the frequency with which quite small local adhesions may keep up swelling and pain in a joint and not clear up with ordinary physiotherapy, yet yield dramatically to a forced movement judiciously applied while the patient is conscious but off his guard. In this method there is no danger of tearing any other structures or stretching muscles beyond their normal length. If the time and direction are judged correctly, which are matters of experience, the relief is immediate and the patient regains complete range of the joint or, in severe cases, steadily progressive increases of range.

3. *Graded Wedging of Shoes.*—The importance of taking strain off the knee-joint after injury by balancing the foot correctly cannot be exaggerated, but my experience is that it is not wise to use 1/4 in. wedges for all patients indiscriminately. Very few adults will feel comfortable with more than 1/8 in. inside wedges to the heels, while more than 3/16 in. is rarely tolerated; among athletes few need crooking of the sole, and some even need an *outside* wedge to the sole to prevent them slipping over in the shoe and getting a corn on the little toe.

4. *Congenital Subluxation of the Patella.*—In the discussion of quadriceps insufficiency no mention is made of congenital laxity of the ligamentum patellae, moderate degrees of which are quite common and may cause a sudden giving way of the knee that may simulate injury to the semilunar cartilage, but is not a true "locking," though it is usually started by some slip or strain. In a discussion last year in the Orthopaedic Section of the Royal Society of Medicine several of the speakers expressed the view that many knees, which have been opened for supposed cartilage injury and with negative findings, were really instances of this condition.

Trusting that you will allow me some of your valuable space for drawing attention to these points, which are apt to be overlooked in practice, though simple when recognized.—I am, etc.,

M. FORRESTER-BROWN, M.S., M.D.Lond.

Bath, Sept. 13.

Aetiology of Erythema Nodosum

SIR,—The latest theories concerning the aetiology of erythema nodosum relegate this very definite clinical entity to the realm of allergy, and the allergens responsible are said to range from tuberculin to the toxin of haemolytic streptococci. The observations throughout the following case and before the appearance of the eruption would seem to be of value in this regard.

A girl aged 4 years was seen with swollen glands on the right side of the neck. While the swelling was lower than the usual tonsil gland the throat was considered to be the source of infection. Some days later the local lesions of erythema nodosum appeared on both legs in the usual position anteriorly. They continued to appear in crops on the buttocks, the forearms, and on the face, particularly on the forehead, one typical lump being just above the bridge of the nose. The lesions went through the usual stages, showing finally mild ecchymosis. The patient's temperature ranged from 99° in the morning to 103° and 104° in the afternoon. The gland was not very tender, and no sore throat was complained of. There were mild joint pains, but these were not a marked feature.

The temperature subsided after about sixteen days but the swelling remained. A seaside holiday improved the patient's general health, but the gland did not diminish, and since it was causing some torticollis by virtue of its bulk it was removed, when it was found to contain pus. The latter on examination revealed *tubercle bacilli and no other organisms;* section of the wall of the gland showed giant-cell systems of the nature of tuberculous infection. One could safely assume, therefore, that the condition was tuberculous and not a mixed infection.

Nature is usually true to type in her skin manifestations, and erythema nodosum is such a definite clinical entity that one would hesitate to ascribe its causation to such widely differing types of infection as tubercle bacilli and haemolytic streptococci.

This case is so clear cut in its manifestations and pathological findings that one ventures to argue that, short of equally positive findings, erythema nodosum should be considered as of tuberculous origin unless proved otherwise.—I am, etc.,

London, N.7, Sept. 12. W. LEES TEMPLETON, M.D.

Relief of Rheumatic Conditions

SIR,—In a recent letter published in the *Journal* of July 10 (p. 88) I urged the importance of exercises conducted by the patient, rather than massage, for the relief of rheumatic conditions. In this connexion the results obtained by Dr. F. G. Bushnell on himself, and communicated to me, are of interest. Dr. Bushnell was, unfortunately, the victim of a very severe attack of rheumatoid arthritis. The method which Dr. Bushnell adopted for effecting relief could be followed in sanatoria devoted to the treatment of rheumatism in the same way as sanatoria are set aside for the treatment of tuberculosis.

In Dr. Bushnell's case the febrile period lasted about six months, and was spent in bed in hospitals. Dr. Bushnell, who was about 69, carried out such exercises as were possible while at "rest," but no orthopaedic measures, such as splints or correction of deformities under anaesthesia, were advised, and at the end of the febrile period he was left with flexed painful knees and elbows, etc., wasted limbs, and was unable to crawl more than a few yards or to mount steps. Having tried autogenous vaccines and various vaunted pharmaceutical "remedies" without effect, he resolved to assist natural recovery: (1) by exposure of his body to sun and air and by sea bathing; (2) by active and passive exercises of all affected joints and muscles, conducted when warm enough either in the open air or under water; (3) by rest; (4) by a balanced, adequate diet. He obtained the best climatic conditions in the Canary Islands, where there is sunshine daily, an even temperature between 60 and 70° F., and practically no rain. From being in 1934 almost a stretcher case, he is now able to walk slowly some six or eight miles over hilly mule tracks, to "trot" on the sand, and to swim in the sea several hundred yards—an immense improvement. He has found it necessary to work without ceasing for recovery, even to the fatigue point. The objectives are to retain general health, re-educate the muscles, and so overcome deformities. When the acute stage has subsided deformities can be dealt with by manipulation of the orthopaedic surgeon under conditions of anaesthesia, the patient afterwards maintaining the improved range of movement thus given by exercises. As remedial exercises are monotonous, rowing, swimming, cycling, gymnastics, and gardening help to keep the patient cheerful. Dr. Bushnell has found that voluntary contraction of spastic muscles against opposition, however evoked, tends to produce relaxation of such muscles and lessen deformity.

E. B. M. Vance (*Journal*, January 11, 1936, p. 53) described hand exercises, which, if carried out, would diminish greatly the number of stiff hands.

—I am, etc.,

St. John Clinic and Institute of Physical Medicine, Sept. 7. LEONARD HILL.

A Complication of Endoscopic Resection

SIR,—In a recent case of endoscopic resection at All Saints' Hospital a complication was encountered which might be of sufficient interest and rarity to merit publication.

A man aged 74, first seen in July of this year, gave a history of frequent painful micturition and nocturia; he had had several previous attacks of "cystitis." Cystoscopy and urethroscopy revealed a fibrous prostate, only slightly resilient to fluid pressure, with marked median bar enlargement and a trabeculated bladder. Residual urine measured 4 ounces. The posterior urethra was tight, but caused no obstruction to the introduction of a Gehring urethroscope (F 25). An *x*-ray plate revealed the presence of several prostatic calculi.

Pre-operative treatment by bladder lavage with 1 per cent. silver nitrate instillations and posterior urethral dilatation (Kollmann) was carried out. Routine dilatation to Clutton 28/32 preceded the introduction of the McCarthy instrument (F 28). Mr. F. McG. Loughnane resected 5.5 grammes of tissue, removing in all fifteen to sixteen pieces, and during the operation several prostatic calculi were evacuated in the bladder wash. The resectoscope was removed only at the end of the operation. Haemorrhage was minimal. Following irrigation with Mr. Loughnane's two-way rubber catheter for forty-eight hours the urine was clear and the catheter was removed. Convalescence was normal and apyrexial until the fifth day, when the patient complained of tenderness on the dorsum of the penis, at the peno-pubic angle, and rather to the left of the mid-line. The following day he had some loss of tactile sensation in the penis. On the seventh day I evacuated half an ounce of seropurulent fluid under considerable tension from the body of the left corpus cavernosum. The cavity appeared to be entirely limited by the sheath of the corpus, had no demonstrable connexion with the penile urethra, but contained two small prostatic calculi. On the following day the patient passed urine through his sinus as well as per urethram.

The cause of abscess formation is open to speculation, but there are two possible suggestions:

(*a*) That as a result of previous instrumentation mucosal abrasions were formed, with subsequent proliferation of granulation tissue, which may have incorporated two prostatic calculi liberated from the prostatic bed. (*b*) That abscess formation was secondary to a process of infection, extending forward from the prostate and carrying two prostatic calculi in its wake.

Mr. F. McG. Loughnane has kindly authorized publication of this interesting case.—I am, etc.,

All Saints' Hospital, S.E.11, Sept. 7. WILLIAM MICHIE. Senior House-surgeon.

Nutrition in the Falkland Islands

SIR,—On January 16 of this year you published a very interesting article by Dr. Cheverton on an epidemic of influenza on the Falkland Islands, which made me anxious to know something more about the conditions under which our "brothers" the colonists have to live. As a result of my inquiries I have come to the conclusion that under present conditions it is impossible for the islanders to be properly fed and to be A1 people. If Great Britain is to possess colonies, then it must be on the condition that the colonists are able to lead good, strong healthy lives, or, in other words, no colony should be retained at the expense of the community, and especially of the children.

Now it appears that malnutrition is a basic factor in the human beings, cattle, and sheep of the Falkland Islands. The average islander lives on mutton, bread, potatoes, and tea. Vegetables, which are so essential for everybody and especially for growing children, cannot be grown, or, if so, with great difficulty, as the weather, with so little sunshine and so much damp, does not allow of such vegetation. The soil, as Dr. Cheverton states, *is* chiefly peat or clay with some sandy outcrops, whilst trees are almost *nil*, so that the country may be described as bleak and inhospitable. The acid content of the soil is high and the available amount of calcium is *nil*. Such a state of soil combined with limited sunshine is responsible for a poor state of health amongst the children, whose resistance to gastric and respiratory diseases is very low. During the last two years as many as thirty operations for appendicitis have been performed amongst a

population of 2,500. The teeth of the children from 18 months upwards are rotten, and children at school have to wear dentures. The supply of cow's milk is limited, and one cannot hope for good milk from cows fed on such poor, acid soil, although the poor beasts do their best to maintain their strength by going down to the beach to eat seaweed.

The problem for us in Great Britain, and especially for the medical profession, is whether we as a nation are justified in continuing to allow women to give birth to children under circumstances which make it impossible for them to rear them on good healthy lines? Are we to allow the breeding of fragile children for the sake of retaining a colony?

In my opinion the time has arrived when a Royal Commission should be appointed to go into the whole problem of the conditions under which so many of our brothers and sisters who live in our colonial possessions are obliged to pass their lives.—I am, etc.,

Swansea, Sept. 8. G. ARBOUR STEPHENS.

The Shopman's Finger Lick

SIR,—Is it not time for the health authorities to take serious notice of the filthy habit of many shop assistants and others, especially those employed in shops where comestibles are sold, of licking their fingers before taking paper or bags for wrapping the food. To what extent is this habit responsible for the spread of infectious diseases? For every one of such persons may well be a potential carrier. This custom does not exist in every shop, but for all that is fairly common. I have myself walked out of a shop and left the goods on the counter. The habit is filthy, insanitary, and unnecessary, and appears to be a result of ignorance and bad training.—I am, etc.,

Clifton. HUBERT C. BRISTOWE.

The Services

DEATHS IN THE SERVICES

Surgeon Captain ERNEST FITZGERALD ELLIS, R.N. (retired), died at Bridgnorth on August 15. He was educated at University College, London, and took the M.R.C.S. and L.R.C.P. in 1901. Entering the Navy soon after, he attained the rank of surgeon commander on February 11, 1915, and retired as surgeon captain on January 7, 1924. He was appointed final medical examination officer of naval recruiting at Birmingham on May 25, 1926. He leaves a widow and a daughter.

Lieut.-Colonel CHARLES WILLIAM HENRY WHITESTONE, R.A.M.C. (ret.), died at Charmouth on August 23, aged 72. He was born at Waterford on November 27, 1864, the youngest son of the late Berkeley E. Whitestone of Dublin, and was educated at Trinity College, Dublin, where he graduated B.A., M.B., B.Ch., and B.A.O. in 1887. After serving as house-surgeon at Sir Patrick Dun's Hospital, Dublin, he entered the Army as surgeon on January 31, 1891; he became lieutenant-colonel on February 13, 1913, and retired on November 17, 1919. He served on the North-West Frontier of India in 1897-8, when he took part in the campaign on the Malakand, receiving the frontier medal with a clasp; and in the South African War from 1899 to 1902, when he took part in operations in Cape Colony, the Orange River Colony, and the Transvaal, and gained the Queen's medal with three clasps and the King's medal with two clasps.

Lieut.-Colonel GEORGE THOMAS LANGRIDGE, R.A.M.C. (ret.), died at Bournemouth on August 28, aged 88. He was born at Bath on May 9, 1849, was educated at Bart's, and took the M.R.C.S. and L.R.C.P.Lond. in 1871. After acting as house-surgeon at the Seamen's Hospital, Greenwich, he entered the Army as surgeon on September 30, 1873, passing in first. At the Army Medical School at Netley he gained the Herbert prize, and was first officer to receive his commission as surgeon immediately on joining after the abolition of the rank of assistant surgeon. He attained the rank of brigade-surgeon-lieutenant-colonel on July 22, 1896, and retired on August 2, 1899. He served in the second Afghan War in 1879-80, when he took part in the Battle of Charasiah, the two expeditions to Maidau, the affairs at Karatiga, Kila Bahadur Khan, Berai-Badam, the capture of the heights at Yukht-i-Shah, and the defence of Sherpur, receiving the medal with two clasps. He also served in the first Boer War in 1881 with the Natal Field Force, and in the Transvaal campaign. He was a member of the British Medical Association for nearly forty-nine years, having joined on July 28, 1885, and resigned on December 31, 1933.

Major ROBERT HAMPDEN CLEMENT, R.A.M.C. (ret.), died at Southampton on July 23, aged 76. He was born on October 31, 1860, was educated at the Carmichael School, Dublin, and took the L.K.Q.C.P. and L.R.C.S.I. in 1883. Entering the Army as surgeon on August 2, 1884, he became surgeon-major after twelve years' service, and retired on August 3, 1904. He served in the Sudan in 1884, in the expedition up the Nile, and in the South African War in 1900, taking part in operations in the Orange River Colony and receiving the Queen's medal with two clasps. He also rejoined for service in the war of 1914-18, from August 6, 1914.

Major CHRISTOPHER JAMES HEALY, R.A.M.C. (ret.), died in Dublin on June 25, aged 72. He was born in Dublin on October 21, 1864, and was educated at Trinity College, Dublin, where he graduated M.B., B.Ch. in 1887. After filling the post of house-surgeon at the Adelaide Hospital, Dublin, he entered the Army as surgeon-captain on July 28, 1891, became major after twelve years' service, and retired on July 28, 1911. He served in the Tirah campaign on the North-West Frontier of India in 1897-8, when he took part in the Mohmand campaign (medal with clasp), and in the operations in the Bara Valley (clasp); and in the South African War in 1901-2, in the operations in Cape Colony, receiving the Queen's medal with three clasps.

Major THOMAS EDWARD MOLES, R.A.M.C., died at Cairo on July 12. He was educated at Belfast University, where he graduated as M.B., B.Ch., and B.A.O. in 1925, immediately afterwards entering the R.A.M.C. He became major on January 26 last.

Universities and Colleges

LONDON HOSPITAL MEDICAL COLLEGE

The second open entrance scholarship, value £100, offered by the London Hospital Medical College, has been awarded to E. O. Williams of Exeter College, Oxford.

The directors of the Commonwealth Fund of New York have created a number of Commonwealth Fund Service Fellowships, tenable at American universities, not more than five of which will be offered in 1938 to persons holding appointments over-seas under the British Government, the Government of India, or the Government of a British Dominion, Colony, Protectorate, or Mandated Territory. Candidates must be of British descent and not have attained the age of 35 on September 1 of the year of award. They must submit a definite scheme of research work or advanced study to be carried out during their residence in the United States, and must produce evidence of their capacity to pursue it with advantage. Fellowships are tenable for a minimum period of fifteen months and a maximum period of twenty-four months, which will run from the date of departure from the country in which the Fellow is engaged in Government service to the date of his return. Applications, on the prescribed form, must reach the secretary, Commonwealth Fund Fellowships, 35, Portman Square, W.1, by February 1, 1938.

Obituary

GEORGE H. SIMMONS, M.D.

Editor Emeritus, *Journal of the American Medical Association*

We announced last week with deep regret the death on September 2, in Chicago, of Dr. George H. Simmons, who, as Editor of the *Journal of the American Medical Association*, for twenty-five years (1899–1924) rendered outstanding service to medical literature, to medical education, to medical organization, to science, and to the general public welfare. In June, 1924, during the annual meeting of the American Medical Association, he was entertained at a banquet and presented with his portrait painted by Arvid Nyholm: an account of the proceedings appeared in the *British Medical Journal* of September 13 of that year. This valedictory dinner, attended by 500 of the leading figures in American medicine, was regarded as the highest tribute that had been paid to a member of our profession in the United States. To Dr. Simmons more than to any man must be attributed the growth of the American Medical Association and the development of its famous *Journal* during the present century.



George Henry Simmons was an Englishman by birth and lineage. A son of George Simmons, he was born on January 2, 1852, at Moreton - in - Marsh, Gloucestershire, and went to school there. After the death of his parents he lived with his maternal grandfather, Richard Clifford, of the Rye Farm, Sezincote. In 1870 he decided to try his fortunes in America, and entering as a student of the University of Nebraska graduated M.D. from the General Medical College and the Rush Medical College of Chicago. He first practised at Lincoln, Nebraska, and was secretary of the Nebraska State Medical Society from 1896 to 1899. He was the founder of the *Western Medical Review*, and its success no doubt led to his appointment to be Editor of the *Journal of the American Medical Association*, which then had a circulation of about 8,000. The *J.A.M.A.* at that time, in the words of Dr. William J. Mayo, was "mediocre and without much influence, either within or without the medical profession. Its standard for acceptance of original contributions and advertising matter was without perspective or ideals." Under Dr. Simmons's editorship the circulation increased more than ten times, and the influence and prestige of the *Journal* grew in proportion. A few months after his appointment as Editor he was also made Secretary of the Association, and continued in this joint post until 1911, when he resigned the secretaryship and became Editor and General Manager.

In every department of his work George Simmons displayed energy, vision, resource, and leadership, but always with personal self-effacement. The *Journal of the American Medical Association* stands as a monument to his executive ability, his keen sense of justice, and close adherence to principle. Under his inspiration it has long stood for the highest in medical science, in medical education, and in professional ethics. Through it he led the fight against quackery and all forms of pseudo-medical fraud, and its rapidly increasing revenue under his direction enabled the Association to carry on a constructive programme of much value to the medical profession and the public. One of its greatest achievements was the weeding out of the inferior medical schools of former days, whose existence had been a reproach to the profession of the United States.

The testimonial dinner in Chicago on June 9, 1924, when he resigned the editorship of the *Journal of the American Medical Association*, gave an opportunity for public acknowledgement of the debt of American medicine to Dr. Simmons. Striking tributes to him and his work were paid by Dr. Harvey Cushing, Dr. Frank Billings, Dr. William J. Mayo, and Dr. William S. Thayer, and by others who could speak with intimate knowledge of his services as journalist, administrator, and reformer. The same note of admiration and affection ran through all the speeches. In his characteristically modest reply Dr. Simmons said that he had always believed and acted on the principle that the American Medical Association was primarily a scientific organization, with for its chief function the advancement of medical science and practice, and that all its efforts must be directed to the common good of the profession and the public. But, he added, while it was reasonable to boast of what had been done, the task was never ending.

After his retirement from active work, to live in a house on the sea coast of Florida, Dr. Simmons continued to keep a wise and watchful eye on the progress of medicine and the course of medical politics at home and abroad. He spent much time in travel and kept up his custom of paying visits to England in the summer. He was present as an honoured guest at the centenary celebrations of the British Medical Association in 1932, and on his last visit in 1936 called at our headquarters in Tavistock Square to renew old acquaintanceships but did not feel equal to the fatigue of attending the Annual Meeting at Oxford. He was then in his eighty-fifth year, and the infirmities of old age were beginning to tell; but nothing could impair his calm and statesmanlike outlook upon the medical scene or his kindly consideration for those who had the privilege of his friendship.

SIR GEORGE POLLARD, M.D.

The death of Sir George Herbert Pollard on August 27 removes a member of our profession who took an active part in public affairs. Born on October 20, 1864, he studied medicine at the University of Edinburgh, graduating M.B., C.M. in 1886 and taking the M.D., with honours, in 1890. After three more years at Edinburgh, where he acted as assistant to the professor of midwifery, he was called to the Bar by the Inner Temple, and on returning to his native town of Southport was elected to the local bench of magistrates. In 1896, the Diamond Jubilee year, he was mayor of Southport, and after two unsuccessful contests was elected in 1906 M.P. in the Liberal interest for the Eccles Division of Lancashire, sitting in the House of Commons for that constituency until 1918. During the war he was a medical adviser to the Ministry of Munitions on poison gas and chemical warfare, and a member of the Ministry's medical board. He received the honour of knighthood in 1909.

Sir George Pollard had been a member of the council of the London Dermatological Society and a vice-president of the Industrial Diseases Section of the Royal Institute of Public Health. He was also for some years a member of the Lancashire County Council. He married Charlotte Elizabeth, daughter of the late Thomas Butterworth of Burnley, who survives him.

Medical News

The annual dinner of the St. George's Hospital Medical School will be held on October 2, at 7.45 p.m., at the May Fair Hotel.

The annual dinner of past and present students of Charing Cross Hospital Medical School will be held at the Café Royal, Regent Street, W., on Saturday, October 2, at 7.30 for 8 p.m.

The annual dinner of the Westminster Hospital Medical School will be held at the Park Lane Hotel on Saturday, October 2, at 7.30 for 8 p.m.

The inaugural address at the London (Royal Free Hospital) School of Medicine for Women (University of London) will be delivered by Mr. H. L. Eason, C.B., C.M.G., in the Albert Levy Hall, Royal Free Hospital, on Friday, October 1, at 3.30 p.m.

The fifteenth annual meeting of the Academy of Physical Medicine will be held at the Hotel Walton, Philadelphia, on October 19, 20, and 21. The Academy, which is international in scope, will present a scientific programme based on reports of the most recent research and the newer techniques in physical medicine as they relate to the practice of the various specialties. In addition to the lectures, demonstration clinics will be held at the hospitals of the University of Pennsylvania, Jefferson Medical College, and Temple University. A copy of the programme may be had from Dr. William D. McFee, 41, Bay State Road, Boston, Mass.

The annual general meeting of the Invalid and Crippled Children's Society will be held at the Invalid and Crippled Children's Hospital, Balaam Street, Plaistow, E.13, on Tuesday, September 21, at 11 a.m., under the presidency of Sir Reginald Kennedy-Cox. A further £5,000 is still required for the proposed extensions of this hospital.

The two-hundreth anniversary of Bristol Royal Infirmary will be celebrated on October 22. At 5 p.m. members of the staff, students, and nurses are invited to inspect the alterations in the buildings and equipment, tea being provided. In the evening there will be a dinner at the University Union (tickets 13s. 6d., exclusive of wines), and it is hoped that as many as possible of the Infirmary's friends and supporters, with guests, will attend. In commemoration of the event a bronze replica of the Infirmary medal is to be issued. All who intend to be present at either or both of these ceremonies should communicate with the Secretary not later than September 30.

An international congress of the history of sciences will be held at Prague from September 24 to 28.

The sixtieth international postgraduate course will be held in Vienna from September 27 to October 10. Special reference will be made to advances in therapeutics. Further information can be obtained from the Kursbüro, Allgemeines Krankenhaus, Alsterstrasse 4, Vienna.

The forty-sixth French Congress of Surgery will be held at the Paris faculty of medicine under the presidency of Professor Gregoire from October 4 to 9 when the following topics will be discussed; pathogenesis and treatment of the immediate and late complications of embolism, pathology and treatment of recent burns of the skin, indications for operation and orthopaedic treatment of simple fractures of the leg and their results. Further information may be obtained from M. A. Vulliod, 12, Rue de Seine, Paris (6e).

The fifth congress of the Association of Scientific Photography and Cinematography will be held in Paris at the International Exhibition from October 7 to 9. Details of the programme may be obtained from Dr. C. Claoue, Rue Scheffer 39, Paris XVI.

A conference on the problem of malnutrition organized by the Council of Action for Peace and Reconstruction will be held in the Memorial Hall, Manchester, on October 2. The secretary of the conference is Miss Hilda Buckmaster, warden of the Ellis Llwyd Jones Hall.

The annual meeting of the German Dermatological Society will be held at Stuttgart from September 18 to 22, the chief subject for discussion being the significance of cutaneous tests.

A home for the treatment of post-encephalitic Parkinsonism is being endowed by Sir Alfred Law at Sparthfield, formerly the residence of the late Sir James Jones. The home will provide accommodation for thirty patients, and those who cannot afford fees will receive free treatment. It is understood that the benefactor decided to endow the home as a result of the work of Dr. C. C. Fenwick and Dr. Neuwahl on what has become known as the Bulgarian treatment of post-encephalitic Parkinsonism.

The September issue of the *Edinburgh Medical Journal* is a special education number.

The issue of *Paris médical* for August 7 contains an illustrated review of Dr. Lévy-Valensi of the history of French medicine as portrayed at the Paris Exhibition.

September 7 marked the centenary of the birth of Professor Hermann Schwartze of Halle, one of the pioneers of otology in Germany, who has given his name to the mastoid operation.

Dr. C. L. Park, Director of the League of Nations Far Eastern Health Bureau, is on his way to Hong Kong to confer with the authorities there on the measures to be taken in connexion with the outbreak of cholera.

Lieut.-Colonel E. D. Caddell, *M.C.*, late R.A.M.C., has been appointed, and has now taken up his duties, as secretary-general of the National Association for the Prevention of Tuberculosis, at Tavistock House North, Tavistock Square, London, W.C.1.

In Austria women number 665, or 9 per cent., of the medical practitioners, 138, or 13 per cent., of the dentists, and 314, or 19 per cent., of the pharmacists.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

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QUERIES AND ANSWERS

Lymphatic Oedema

"G.P." writes: I should be much obliged for information as to the treatment of this case of lymphatic oedema. The patient is a woman aged 35, both of whose ankles and legs swell very much on walking even a moderate distance; no pitting on pressure. The oedema subsides on resting for a time. She becomes very short of breath on slight exertion. Her height is 5 ft. 2 in. and her weight 12 st. 3 lb. In spite of a very small appetite and avoidance of everything that might put on weight she is getting stouter. Thyroid has been tried, but without benefit so far. The patient suffers from menorrhagia monthly. She used to work in a canteen, standing for twelve hours a day.

Facial Hirsuties in the Female

"RAYCUS" writes: Will any reader kindly give experience and details of treatment of facial hirsuties in the female by endocrine extracts?

Otitis Externa from Swimming Pools

Mr. ALFRED MERRIN, in reply to Dr. R. S. Gilchrist (*Journal*, August 21, p. 401), writes: Some years ago you published a letter from me in which I recommended the use of fibrous plasticine for ear plugs. I have used these plugs myself, and have found that they absolutely prevent water from entering the ears when swimming or diving. If Dr. Gilchrist will write to "Harbutts," 56, Ludgate Hill, London, E.C.4, enclosing 8d., and asking them to send a tin of fibrous plasticine, he will receive sufficient to last him many years. A portion of the plasticine should be fashioned into the shape of a tack and then inserted in the ear, the point foremost and the head well flattened against the ear. Pressure with the forefinger behind the ear will loosen the plug sufficiently to enable it to be withdrawn. The same plug can be used indefinitely.

Mr. L. A. RIDDELL (Cornwall) writes: When living on a little tropical island some years ago I became afflicted with a painful otitis externa due to frequent swimming in the open sea. Consultation of Castellani's *Tropical Medicine* suggested that it was a mycotic infection due to repeated maceration of the skin of the external ear. The treatment suggested was the application of "nascent iodine," formed (it was said) by the simultaneous use of sodium iodide and hydrogen peroxide locally. For some reason or other I tried to simplify the treatment and used a 1 in 3 watery dilution of tr. iod. mitis. This was applied with thin wisps of cotton-wool on a fine probe—the use of any stouter instrument being precluded by the great swelling of the skin of the meatus, which is a noticeable feature of the condition. The treatment is painful at first but it gives speedy relief, and I treated successfully not only myself but several others. Swimming can soon be resumed, and any relapse (which is very common once the condition has been acquired) can be nipped in the bud as a rule by just one application overnight whenever the tell-tale itching or wetness of the meatus appears.

Income Tax

Loss on Professional Year

"FORD," writing from the Irish Free State, explains that he is allowed cost of replacement of a car instead of depreciation. If that allowance exceeds the profit, can a refund be claimed for past years?

*** No. The cost of replacement is regarded as a professional expense of the year in which the car was replaced and cannot be given effect as regards prior years. The loss—that is, the excess of the cost of replacement over the year's earnings—can, however, be carried forward against future years.

Honorarium

"A. B. C." has been acting as honorary consulting surgeon to a hospital, receiving annually a gratuity of £50, and has understood that acceptance of the "gift" did not in any way prejudice his honorary position. Is the £50 liable to income tax?

*** In our opinion—yes. The scope of the charge under Schedule E is wide: tax is assessable in respect of "every public office or employment of profit," and the section includes as income "all salaries, fees, wages, perquisites, or profits whatsoever." "A. B. C." undoubtedly holds an office or employment, and the honorarium appears to be within the above description. The £50 is apparently not specified in any contract of office, but the fact that it is paid annually, and that the office was accepted and held in those circumstances, takes it out of the category of a "gift."

LETTERS, NOTES, ETC.

Buccal and Lingual Ulcers

Mr. HERBERT TILLEY, in replying to "Puzzled" (*Journal*, September 11, p. 564) writes: In the absence of any description of the ulcers one presumes that they are discrete, pale, superficial, and very sensitive to touch or even to the passage of liquids and semi-solid foods. Furthermore, perhaps it may be assumed that the ulcers have failed to respond to general treatment and to such local applications as silver nitrate, copper sulphate, etc. If these surmises be correct, it is more than probable that the lesions are caused by a deficiency of vitamin A and possibly D, in the patient's ordinary dietary. During the past two years three similar cases have come to notice, and, like "Puzzled's" patient, mine were also females who had proved equally resistant to medicinal and climatic treatment. But each of them responded quickly to preparations containing cod- or halibut-liver oils which are particularly rich in the first-mentioned vitamin. In addition to these remedies, the patients were urged to take an ample supply of egg-yolk and fresh green vegetables. In two of my patients intramuscular injections of campolon (Bayer)—a highly concentrated extract of cod and halibut oils—were followed by complete disappearance of the ulcers within three days! It may not be without significance that the four cases with which this note is concerned were females, and maybe their susceptibility to "buccal and lingual ulcers" is due to their addiction to the carbohydrate elements of foodstuffs, especially when presented in their most attractive forms and consumed frequently with ample quantities of tea. Man cannot live on bread alone!

Corrigendum

Cork Street Fever Hospital, Dublin

Our attention has been drawn to the omission of reference to Cork Street Hospital in the summary of Dublin teaching hospitals in our Educational Number (September 4). The hospital, founded in 1801, is one of the oldest fever hospitals in the British Isles, and is the largest teaching fever hospital (280 beds) in the Irish Free State. It is recognized by the National University, Trinity College, and the Irish Conjoint Board for undergraduate and postgraduate instruction, classes for medical students being held each term, and for D.P.H. students during the winter term.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

209 Bilateral Lingual Atrophy in Tabes

According to M. FELICI (*Riv. Sper. Freniat.*, June 30, 1937, p. 315) lingual hemiatrophy is uncommon and bilateral lingual atrophy extremely rare in tabes. He records three cases diagnosed as tabes in which both sides of the tongue were atrophic and showed fibrillary tremor; one had already had antisyphilitic treatment and admitted infection, but all had negative Wassermann reactions in the blood and cerebrospinal fluid. Two patients had muscular atrophy of the Aran-Duchenne type in the upper limbs. All had laryngeal crises, two had palatal paresis, one had laryngeal palsy, and one weakness of the masseters; such an "inferior bulbar syndrome" is always present when there is bilateral lingual atrophy. This condition, although possibly due to diffuse vascular meningomyelitis, may be attributed among other things to primary degeneration of the hypoglossal nuclei.

210 Enteric Fever

A. BOULET (*Thèse Paris*, 1937, No. 379) records his observations on 111 cases treated at the Val-de-Grâce Military Hospital, Paris, from 1926 to 1936. Of these, forty-four were cases of typhoid, nine of paratyphoid A, and fifty-seven of paratyphoid B, and in one the type was not stated. The majority had been inoculated several months before their attack, a few only a month or less before, and ten several years previously. In most of the cases the disease was mild. In ninety-four patients the febrile period did not exceed twenty days, and in nine it ranged from two to five days. Only eight cases had complications, myocarditis in three and intestinal perforation in one proving fatal. In the surviving group there was phlebitis in one and slight intestinal haemorrhage in three. Of the four deaths, two were due to typhoid, one to paratyphoid A, and one to paratyphoid B, giving a mortality of 4.5, 11.1, and 1.7 per cent. respectively for the three groups, and a total mortality for the 111 cases of 3.6 per cent.

211 Epidemic Myalgia

R. R. MACDONALD, B. HEWELL, and M. L. COOPER (*Amer. J. Dis. Child.*, June, 1937, p. 1425) report their observations on seventy cases of epidemic myalgia investigated at the Children's Hospital, Cincinnati, from July to October, 1935. During this period 282 cases were reported to the local department of health. The outstanding symptoms were pain (most commonly abdominal) and fever, both of which were sudden in onset. Twenty-five blood cultures taken from twenty-three patients were persistently negative, and spinal fluid cultures taken from three patients also remained negative. Throat cultures showed a variety of bacteria, but the only constant micro-organism was a slightly haemolytic streptococcus, which was also found in cultures taken from nasal swabs.

212 Early Symptoms of Acute Coronary Occlusion

SAMPSON and ELIASER (*Amer. Heart J.*, June, 1937, p. 675) have found that a single spontaneous attack of prolonged anginal pain strongly suggests the approach of a typical coronary thrombosis. The pain may be due to the sudden blockage of an artery which has been gradually narrowed to an extreme degree. In twenty-nine cases observed over a period of two and a half years the authors found that long-standing angina pectoris was present in about 50 per cent. The character of the premonitory attack of precordial pain in those patients who had had angina pectoris previously rarely differed from their former pain. The duration of the premonitory syndrome varied from two minutes to two hours, the average being one hour. The interval between the attacks varied between one and twenty-one days, but was usually a week. Electrocardiograms offered no assistance in the diagnosis of impending thrombosis. Records taken after the occlusive attack naturally showed characteristic pathological changes. A mortality of 35 per cent. was found in patients who had experienced the premonitory syndrome. The authors decide that it is still doubtful whether rest in bed increases the chances of survival in patients in whom the premonitory symptoms have been diagnosed. These may occur characteristically in patients who fail to develop typical signs of a coronary artery occlusion within a period of some weeks afterwards. Six patients who had a severe attack of pain were placed at complete rest and within one to three weeks their attacks had completely subsided. It is possible that occlusion was forestalled and that a collateral arterial supply developed in these cases.

Surgery

213 Chronic Portal Obstruction

V. LOZZI (*Rinasc. med.*, June 15, 1937, p. 371), after an allusion to the non-success of the usual surgical treatment of ascites in hepatic cirrhosis, considers the various venous anastomoses which have been effected. He remarks that Rosenstein's union of the inferior vena cava and the portal vein demands virtuosity even in a surgeon experienced in vascular operations, and regrets that anastomosis between the superior mesenteric and portal veins, as done by Bogoraz in 1912 and Krestiowsky in 1926, has not more often been tried. He has found that such a union remained pervious in seven out of ten dogs. The same operation has been done on an alcoholic subject, aged 49, with hepatic cirrhosis, and in a woman, aged 26, with portal thrombosis. Both made good recoveries, and the rate of accumulation of ascitic fluid was afterwards considerably less. Lozzi prefers a lateral anastomosis to the termino-lateral union made by the others, and regards a stoma of at least 15 mm. in diameter as essential. A less drastic proceeding proposed by the author is anastomosis of a radicle of the inferior mesenteric vein or of the ileocolic vein with an iliac vein; this method was tried by Ghiron without success.

214 Indications for X-Ray Therapy

H. HOLFELDER (*Wien. klin. Wschr.*, July 16, 1937, p. 1051) gives the results of his extensive experience in the treatment of malignant growths with *x* rays, and compares them with those obtained by operation. In small carcinomata of the skin surgery and irradiation give equally good results, whereas extensive inoperable skin carcinomata can be treated only by irradiation. The proportion of recurrences in these cases was only 20 per cent. Of cases of inoperable carcinoma of the breast treated with *x* rays, 40 per cent. were alive after three years, and 36 per cent. after five years. Prophylactic post-operative irradiation considerably improved the operative results; 68 per cent. of cases treated in this way were alive after three years and 54 per cent. after five years. Untreated bronchial carcinoma practically always proves fatal, but three cases treated with *x* rays were alive after seven, six, and four and a half years respectively. Similar results were obtained in cases of carcinoma of the oesophagus, in the treatment of which the author prefers *x* rays to intra-oesophageal applications of radium. *X*-ray treatment cured 5.5 per cent. of cases of inoperable carcinoma of the stomach, and an improvement was effected in 42 per cent. of all the cases treated. In lymphogranulomatosis *x*-ray

treatment considerably retarded the inevitable fatal issue. In pituitary tumours a clinical cure was obtained in 50 per cent. of cases, and the author thinks that in spite of the excellent operative results treatment by irradiation is preferable in these cases. A five-year cure in cases of osteogenetic sarcomata was obtained in 23 per cent. of cases by *x* rays alone, and in 31 per cent. by combined surgical and radiological treatment. The author stresses the importance of the collaboration between surgeon and radiologist in the treatment of malignant growths.

215 Statistical Study of Appendicitis

K. ÖSTERBYE (*Ugeskr. Laeg.*, July 8, 1937, p. 729) of Aarhus, Denmark, notes that the mortality from appendicitis, is nearly twice as high in Denmark, where some 4,000 cases of acute appendicitis are operated on every year, as it is in Norway and Sweden. This striking difference may be due to the differences in treatment, in the interval between the onset of the disease and operation, or in the dietaries of the Scandinavian countries. He suggests that further light could be thrown on this problem by the adoption of a standard method of classifying and recording results. He has set an example in this respect by comparing his own cases for the ten-year period 1926 to 1935 with the cases from Bispebjerg, Denmark. The Aarhus cases numbered 1,143, the Bispebjerg cases 2,038. The corresponding numbers operated on were 1,121 and 1,697 respectively; thus in Aarhus the percentage of cases operated on was much higher than in Bispebjerg, where Group III cases (Bauer's classification of 1910) of acute appendicitis with circumscribed suppurative peritonitis were treated conservatively. The three measures which distinguished the treatment of the Aarhus cases from that of the Bispebjerg group were as follows: (1) the cases were operated on irrespective of the group to which they belonged and of the duration of the disease; (2) drainage was only rarely resorted to; and (3) there was no post-operative treatment with opium. The mortality in Aarhus was 5.86 per cent. for all the cases, and 5.80 per cent. for all those treated by operation. The corresponding figures for Bispebjerg were 5.99 and 6.42 per cent. respectively. The author comes to the conclusion that he has been justified in his operative policy, chiefly because in early cases it is impossible, by means of the diagnostic tests at present available, to distinguish Bauer's Group I cases of acute appendicitis without peritonitis from Group III cases with circumscribed suppurative peritonitis.

Therapeutics

216 Physical Hyperthermia

F. WALINSKI (*Zbl. inn. Med.*, July 17, 1937, p. 593) has been using physical hyperthermia for ten years. Each patient was given 10 c.cm. of a 20 per cent. sodium chloride solution intravenously, and was then placed in a bath the temperature of which was 36° C., rising to 42° C. within ten to thirty minutes. Finally he was wrapped in a flannel jacket and five woollen blankets. The number and duration of treatments depended on the disease. Diseases of the central nervous system required from four to six hours, and cases of arthritis needed from one-half to three hours. The presence of cardiovascular and renal disease contraindicate the treatment, which has been applied to 534 cases, with no deaths. The sodium chloride inhibits sweating. With a rise of temperature the sodium chloride content of the blood increased, the blood pressure rose, acidosis occurred, there was a leucocytosis, and the blood sedimentation rate was usually increased. The blood sugar fell while the patient was in the bath, and then rose later. The author found that hyperthermia was as successful as malarial treatment in cases of tabes and cerebral syphilis, and in elderly or debilitated patients it was the treatment of choice. It had no effect on post-encephalitic Parkinsonism, myelitis, or amyotrophic lateral sclerosis. The results obtained in 159 cases of chronic arthritis were excellent. In seven cases of gonorrhoea in females six were cured without further local treatment; ten cases with inflammation of the adnexae were completely cured. The author believes that it is the high body temperature alone which accounts for the success of this therapy.

217 Gas Gangrene Therapy

A. BORCHARD (*Zbl. Chir.*, July 24, 1937, p. 1746), in spite of failures, believes that the best treatment for gas gangrene is the prophylactic administration of anaerobic serum. That even small lacerations may be the cause of this condition is illustrated in one of the author's cases, which developed a severe infection following a slight abrasion of the outer side of the little finger. The patient was admitted one and a half days after a bicycle accident, seriously ill, and with a high temperature and rapid pulse. Amputation or even disarticulation of the arm was out of the question. Borchard made a circular incision round the pectoral muscle and scapula, and down to the fifth rib a hand's breadth from the infected area. All the areas in which gas could be detected were incised, and hydrogen peroxide tampons were applied to each incision and constantly renewed. Large doses of anaerobic serum, cardiac stimulants, and oxygen inhalations were administered. Fresh incisions had to be made during the first fortnight as new accumulations of gas were discovered, but the patient was discharged after three months with all incisions completely healed. The author thinks that general treatment, while unable to overcome the infection alone, played an important part in raising the body's resistance. He is doubtful whether fascial incision, walling off the infected area from the healthy tissues, obstructs every route of infection, but he recommends a trial of this procedure, which can, if necessary, be followed by amputation.

Dermatology

218 Pituitary Hormones in Skin Disease

G. PIGHINI (*Policlinico*, Sez. Prat., July 5, 1937, p. 1293), who had previously shown the close relation between the skin and the neuro-hormonic system especially the hypophysis, records his observations on ten cases of alopecia areata, four of acne vulgaris, and two of acne rosacea treated by intramuscular injections of extract of the anterior lobe of the pituitary. Of the ten cases of alopecia areata seven were completely cured, two showed some improvement and were not followed up, and one showed no change. Two of the cases of acne vulgaris were completely cured and two showed considerable improvemen. The cases of acne rosacea were also completely cured The pituitary treatment was combined with the administration of thyroid and iodine to counteract excessive pituitary stimulation. Injections of 1 c.cm. of the extract were given for about twenty-five days, followed by an interval of a week and then resumption of the treatment.

219 Ringworm

E. S. DOWDING and H. ORR (*Brit. J. Derm. Syph.*, July, 1937, p. 298) examined tissue from about 200 patients in Alberta, Canada, and found that *T. gypseum* was responsible for 67 per cent. of ringworm. A culture of this fungus was obtained from scales taken from the fingers of a patient with ringworm of the hand, and this strain was used as a type culture. Fifteen other cultures isolated from patients with three different types of ringworm were identified as *T. gypseum*. The first group of seven patients showed vesicular lesions of the glabrous skin of the hand, wrist, arm, or shoulder. In the second group there were five patients with chronic, scaly, and sometimes vascular

lesions of the skin of the feet. In the third group there were three patients with pustular, boggy, nodular lesions of the beard, with some hair infection. Nine of the sixteen cultures of *T. gypseum* differed from the type culture in texture or colour of the mycelium, in pigmentation of the nutrient medium, or in microscopical characteristics such as the absence of macroconidia. No correlation existed between the clinical type of ringworm caused by the fungus and the variation which it exhibited on Sabouraud's medium.

220 Local Treatment of Leg Ulcers

A. TZANCK and M.-L. NERET (*Bull. Soc. franç. Derm. Syph.*, June, 1937, p. 993) describe four cases of varicose leg ulcers cured by the application of an ointment containing flounder oil (*l'huile de flétan*). The dressings were first renewed daily and later every three or four days. During the treatment the patients were confined to bed. The authors claim that the vitamin A content of this oil is greater than that of cod-liver oil. An ulcer measuring 6 cm. by 3 cm. healed in three weeks, and another measuring 3 cm. by 1 cm. healed in eighteen days. In all four cases reported other means of treatment had previously been tried with no result. The authors have been using the same treatment in a variety of other skin conditions, including eczema, lupus, etc., with encouraging results.

221 Exudative Erythemata

K. BINGOLD (*Med. Klinik*, July 2, 1937, p. 889) describes erythema exudativum multiforme as a general disease in which the skin condition predominates. Erythema infectiosum and nodosum are two clinical subdivisions of this disease. Aetiologically, syphilis, influenza, lymphogranulomatosis, and septic conditions must be borne in mind. In gonococcal endocarditis a polymorphous exanthem may be present. In mild as well as in severe cases of sepsis due to staphylococci eruptions may be found over the whole body, and in the earliest stage there is oedema of the papillary bodies and the cutis. Miliary abscesses appearing as papules occur in the stratum reticulare. In sepsis due to pyogenic haemolytic streptococci the skin is covered with papules which sometimes become pustular. Haemorrhages, roseoles, pustules, and widespread erythemata may occur together. In endocarditis due to pneumococci metastatic skin conditions are uncommon. In meningococcal infections of the skin the arteries and capillaries are affected; the clinical picture of erythema exudativum and nodosum may be seen, and roseoles and petechial or haemorrhagic exanthemata may be found. In endocarditis lenta bacterial emboli are found in the end-arteries of the skin, producing painful Osler's nodes. *B. pyocyaneus* produces an inflammation of the arterial wall resulting in a red wheal, which may become ulcerated. In all cases of erythema accompanied by a high temperature a blood culture should be done.

222 Gonococcal Epididymitis Treated by Leeches

M. SCHUBERT (*Derm. Wschr.*, July 17, 1937, p. 917) has been using leeches in the treatment of gonococcal epididymitis since 1936 with good results. Three leeches were applied as soon as this complication occurred, and within half an hour they fell off, engorged with blood. There was bleeding from the site of suction for about three hours afterwards. During the treatment rest in bed with the scrotum raised and applications of boric fomentations were ordered; urethral injections were stopped. Thirty-six patients treated in this way were compared with thirty-five treated in 1935 by other methods. The author found that: (1) treatment with leeches relieved pain more quickly than did other methods; (2) the inflammatory swelling did not regress as rapidly as the pain; (3) urethral injections could be resumed a few days earlier than in other treatments; (4) the average course of treatment could be shortened by a week. In 83 per cent. of cases the condition on discharge was excellent, and in 17 per cent. it was unsatisfactory. Schubert used leeches in five cases of gonococcal arthritis and in eight cases of non-specific epididymitis, and had surprisingly good results. He believes that the value of leeches lies in their restoring normal circulatory conditions; pain is thus relieved and spasm of the blood vessels inhibited.

223 Ultra-violet Irradiation in Skin Diseases

A. A. BABKOVA (*Arch. Sci. biol.*, 1937, 45, 1, p. 207) has investigated the sensory and motor chronaxia before and after the action of ultra-violet light in various types of skin diseases, including eczema, dermatitis, lupus erythematosus, lupus vulgaris, and dermatomycosis. She noted regular changes in the sensory chronaxia beyond the limits of one segment. The nature of these changes was determined by the functional state of the nervous system before irradiation; the healthy skin showed a lengthening of the chronaxia, while in the affected skin the previously lengthened chronaxia was shortened. The functional changes were identical in the different skin affections irrespective of the aetiology and clinical symptoms.

224 Poradenitis Venerea

T. HASHIMOTO *et al.* (*Jap. J. Derm. Urol.*, May 20, 1937, p. 165) have studied 185 cases of poradenitis venerea (lymphogranuloma inguinale) since 1928, 171 in men and 14 in women; 82 per cent. of the patients were in the third decade. In all but three the disease was of venereal origin. In 114 the primary lesion was found on the external genitalia. It occurred as a circular erosion with no infiltration, or as an irregular sore the size of a pea, or as rounded, hard, infiltrated nodules, with central depressions, slightly raised above the skin surface. The incubation period of the primary lesion was a week in seventy-five cases, and it lasted from one to forty days. Unilateral buboes were slightly more common than bilateral, the right and left sides being equally affected. The incubation period of the buboes was most commonly from two to four weeks. Frei's intradermal reaction was specific in 96 per cent. of cases. The duration of the disease depended on the degree of glandular inflammation; the shortest duration recorded was eighteen days and the longest 390, the average being from two to three months.

Obstetrics and Gynaecology

225 Bilateral Hydrosalpinx

C. BÉCLÈRE (*Bull. Soc. Obstét. Gynéc. Paris*, May, 1937, p. 381) again emphasizes the clinical importance of bilateral hydrosalpinx, which is usually only detected radiologically. The condition is more common than is usually supposed, and Béclère found it in 100 out of 800 cases which he investigated for tubal impermeability by lipiodol injections, and these were all gynaecological patients in whom diagnosis was difficult. In his personal experience of cases of sterility about one-quarter have bilateral hydrosalpinx, this representing one-half of those with bilateral tubal occlusion; the corresponding proportions in chronic genital infection are one-seventh and one-third respectively. The condition is less common in cases of metrostaxis without obvious cause and cases of intermenstrual pain, in both of which bilateral hydrosalpinx may be an incidental expression of a chronic infection. The cause in two-thirds of cases is a genital infection which has been chronic from the beginning and is nearly always gonorrhoeal; other cases are infection after labour or abortion, tuberculous infection—often occurring after ascites in childhood and diagnosed only by

microscopical examination of the specimen—and rarely, an acute peritoneal infection as in appendicitis. Clinically there are no decisive objective or subjective signs, but bilateral hydrosalpinx may be suspected when acute salpingitis has followed a gynaecological examination or manœuvre, when adnexal swellings disappear, and when treatment by diathermy in a chronic infection fails. Intermittent hydrorrhoea is only an initial and uncommon sign. Radiographic detection demands a supplementary plate made twenty-four hours after lipiodol injection, and important signs are the well-defined spherical droplets in the tube away from the middle line on both sides, and a precise and clean tubal shadow. The collections of fluid may remain unchanged for many years, but after reinfection or trauma they may turn into a pyosalpinx; they may also be subject to repeated subacute inflammatory attacks. In the presence of hydrosalpinx cervical dilatation or cauterization may provoke acute symptoms, and it is best to abstain from diathermy.

226 Pregnancy following Operative Sterilization

K. W. SCHULTZE (*Zbl. Gynäk.*, July 17, 1937, p. 1683) has collected from the literature thirty-two cases in which pregnancy occurred after occlusion of the tubes for the purpose of sterilization, and he also reports five cases of his own. In one of these the round ligament had been mistaken for the tube; in another a fistula had formed between the ovary and the tube following a partial salpingectomy.

227 Metritis and Diathermy-coagulation Therapy

C. MOUSSALLI (*Gynécologie*, May, 1937, p. 282) describes a special electrode for intra-uterine coagulation of the uterine mucous membrane in cases of metritis. The active part of the electrode is a short thin insulated rod which carries two crescentic platinum electrodes, each connected to a different terminal of the diathermy apparatus. The rod can be rotated and at the same time made to penetrate deeper into the uterine cavity. In this way the whole of the mucous membrane can gradually be coagulated. No special preparation of the patient and no anaesthesia is required. The coagulated mucous membrane gradually separates, and the healing is complete in about three weeks. The author has not met with a single accident in the 400 cases treated by this method.

Pathology

228 Biological Tests for Pregnancy

F. A. E. CREW (*Amer. J. Obstet. Gynec.*, June, 1937, p. 989), reporting from the Pregnancy Diagnosis Station, Edinburgh, calls the biological tests for pregnancy "weapons of precision." The Friedman test with rabbits is quicker and more delicate although more expensive than the Aschheim-Zondek test with mice. The Friedman test is done with two rabbits in medico-legal cases and combined with the Aschheim-Zondek in cases of suspected ectopic gestation. The Aschheim-Zondek becomes negative seventy-two hours after the expulsion of the embryo. Series of observations by Aschheim-Zondek tests enable varying diagnoses to be made according to the degree of reaction observed. For the diagnosis of foetal death the tests are not reliable, nor can they be trusted before one month after conception, or in unmarried girls aged from 13 to 17, or in women over 43. Uterine enlargement in mice when the ovarian blood spots are absent indicates very early pregnancy, idiopathic low hormone concentration, menopause, incipient menstruation after a period of amenorrhoea, recent death of the ovum, or some endocrine disturbance not connected with pregnancy. Repetition of the test ten days later may be necessary. Toxic specimens, usually after attempted abortion, killed thirty-four of the mice. Tests for hydatidiform mole were made by diluting the urine. After the removal of a mole the test becomes negative in three months unless chorion epithelioma has supervened or spread. It is therefore of value for differential diagnosis as well as in such conditions as tuberculosis, peritonitis, ovarian cyst, etc. Quantitative estimations of oestrin and gonadotropic and male hormones in blood and urine are undertaken at the laboratory. The results are not at present of great clinical value, but experience will make them of more than academic interest. Professor Crew points out that the laboratory reports are to be read by the clinician as evidence for diagnosis and not as being themselves indisputable. He also insists that the clinician must use the laboratory reports not as a final diagnosis but as a contribution towards it.

229 Polypeptidaemia in Pulmonary Tuberculosis

G. TOSI and E. LENCI (*Riv. Patol. Clin. Tuberc.*, June, 1937, p. 413) recall that the presence of polypeptides in the blood to the extent of 2 to 4 per cent. in physiological conditions is independent of alimentary protein digestion. In febrile and cachectic conditions a notable increase is encountered as an expression of increased endogenous tissue metabolism, but no clear connexion of hepatic disease, renal disease, or uraemia followed by hyperpolypeptidaemia has been made out. In an analysis of seventy-two cases of pulmonary tuberculosis they found that the estimation of the blood polypeptides in connexion with other methods of physical examination furnished a valuable aid to prognosis. In the "inactive" cases, most of which gave definite evidence of fibrosis, there was a slight increase; in "active" or evolutive cases a notable hyperpolypeptidaemia was usually found. The figures were in no way proportional to the degree of pyrexia or to the abundance of sputum.

230 Serological Diagnosis of Syphilis

O. SIEVERS (*Finska LäkSällsk. Handl.*, May, 1937, p. 395) reports from the Sero-Bacteriological Institute of the University of Helsingfors his experiences with 3,575 samples of blood taken from 3,025 patients. The Streng-Murto modification of Wassermann's reaction was employed, and its findings were compared with those of Kahn's "flockingsreaktion" and Müller's "Ballungsreaktion II" (KR and MBR II respectively). It is now generally agreed that the supplementing of Wassermann's reaction with one or both of the above-mentioned reactions is desirable. In 551 cases of syphilis the sera yielded mutually confirmatory reactions to KR and MBR II in 95.9 per cent. With regard to the cases in which the findings of the reactions were divergent, KR was positive and MBR II was negative in twenty-three cases, whereas in twelve KR was negative and MBR was positive. In most of these thirty-five cases of conflicting evidence the patients had already received specific treatment for syphilis. In 98.7 per cent (2,089 cases) of the control cases KR and MBR II confirmed each other, and in forty-four cases positive reactions were obtained with both these tests. The author defers to a later publication his discussion of these possibly misleading reactions in presumably non-syphilitic persons, associating this problem with that of non-specific positive Wassermann reactions. Of the twenty-seven samples of blood which reacted differently to KR and MBR II, twelve gave a positive reaction to the former and a negative reaction to the latter, while the reverse was the case with the remaining fifteen. The author is highly satisfied with the conformity of KR and MBR II, but as a matter of routine he employs both in the hope of avoiding mistakes. He repeats both tests when they are mutually contradictory if the blood is not taken from a definitely syphilitic patient. When both reactions are positive and Wassermann's reaction is negative he advises the continuous supervision of the patient.

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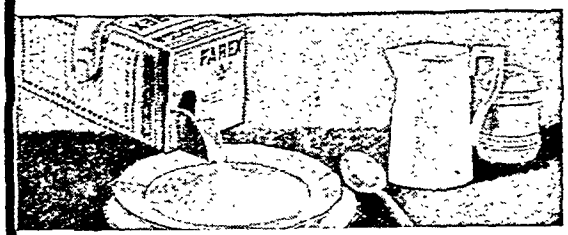
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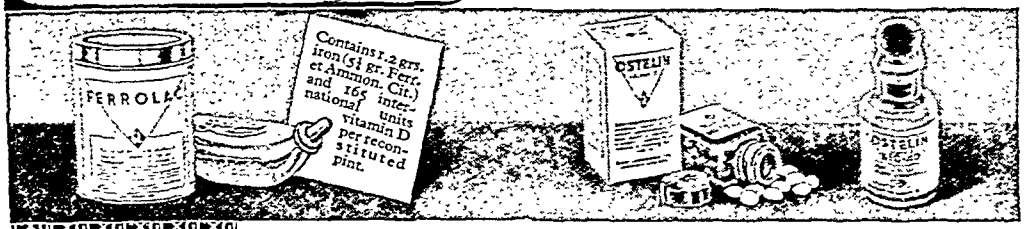
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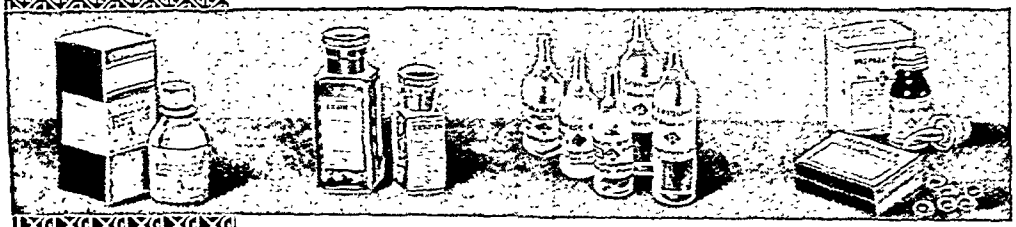


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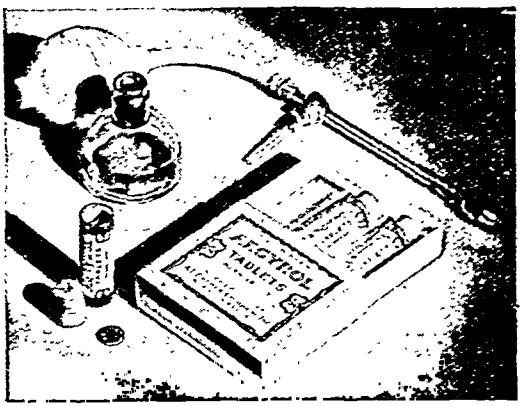
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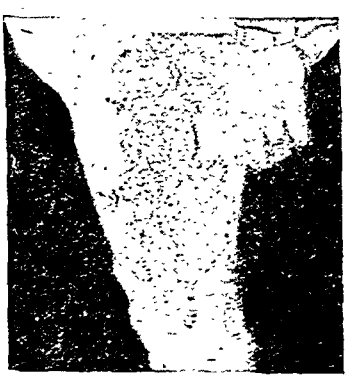
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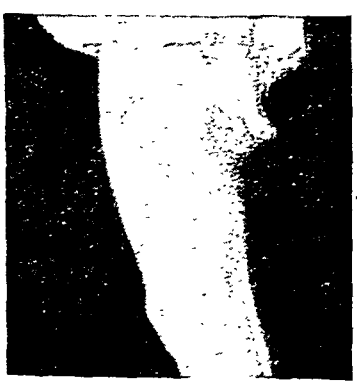
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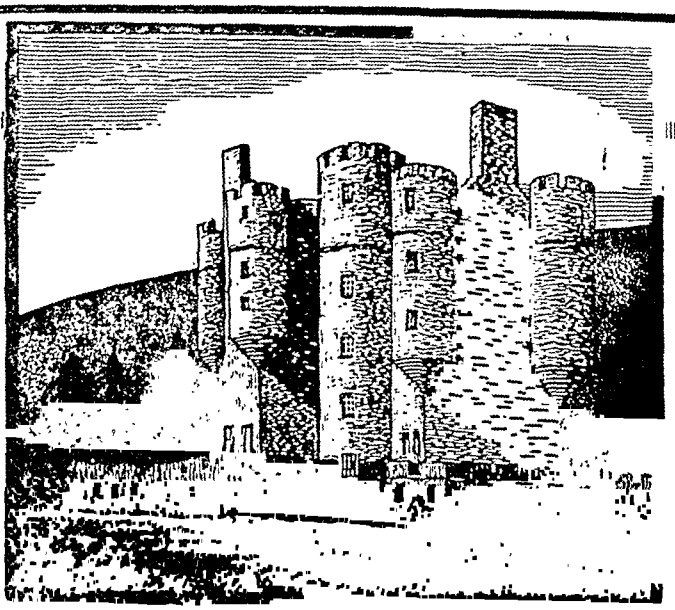
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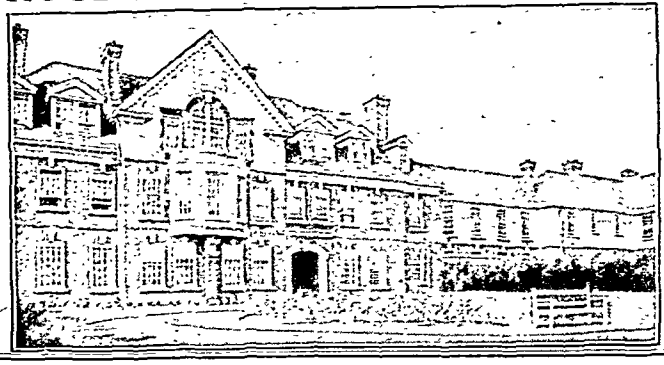
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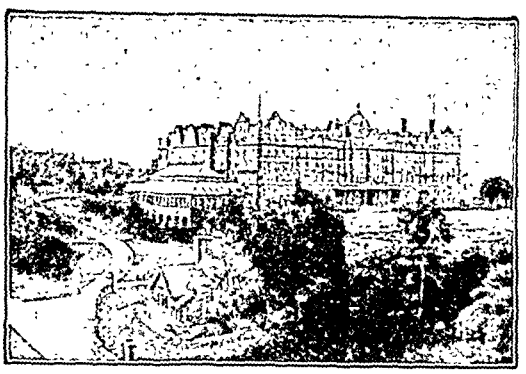
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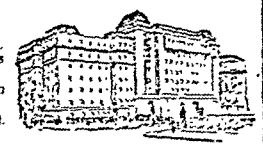
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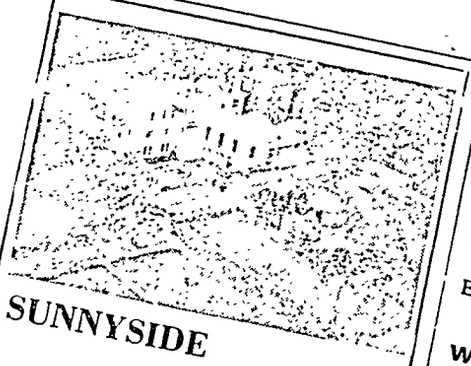
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Fridays at 5 p.m., October to December, commencing Friday, October 15th.

AN INTRODUCTORY LECTURE TO THE WHOLE EDUCATION COURSE

will be delivered at The Hastings Hall, British Medical Association House, Tavistock Square, W.C.1, by kind permission of the British Medical Association on Friday, October 8th, 1937, at 5 p.m., by CHARLES E. WHEELER, M.D., B.S., B.Sc.Lond., entitled "A Hundred Years of a Heresy."

Medical Men and Women are invited to attend this Lecture.

TUTORIAL CLASS

A class for individual study of the Materia Medica by the Repertory and References to Patients will be conducted by DOUGLAS M. BORLAND, M.B., Ch.B.Glasg., Physician to The London Homoeopathic Hospital, on

Fridays, at 6.15 p.m., October to March, commencing October 15th.

CLINICAL TUTORIALS

On Monday and Friday afternoons, at 2 o'clock throughout both the Winter and Summer Sessions, the Medical Tutor to the Hospital, WILLIAM WILSON RORKE, M.B., Ch.B.Glasg., conducts an Out-patient Clinic for the purpose of instruction in the application of Homoeopathic principles.

THE SIR HENRY TYLER SCHOLARSHIP COMMITTEE

also offer SCHOLARSHIPS to Medical Men in the Provinces desirous of taking a Post-Graduate Course at The London Homoeopathic Hospital during the Ten Compton-Burnett Lectures. Prospectus and further information regarding scholarships may be obtained on application to the Dean of the Education Course, London Homoeopathic Hospital, W.C.1.

CORRESPONDENCE COURSE

For the benefit of Doctors unable to attend the Post-Graduate Lectures, a Post-Graduate Correspondence Course has been initiated under the auspices of the British Homoeopathic Association. For particulars, apply to the Medical Secretary, British Homoeopathic Association, 43, Russell Square, London, W.C.1.

MANCHESTER ROYAL INFIRMARY

Post-Graduate Demonstrations

will be given by members of the Honorary Staff on Medical, Surgical and Special Subjects each week on Fridays from Friday, September 24th, until Friday, December 17th. All Demonstrations begin at 4.15 p.m. and are free. Details may be obtained from the Secretary for the Post-Graduate Demonstrations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE.

PRINCE OF WALES'S GENERAL HOSPITAL, N.15.

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ADVICE ON THE CHOICE OF SUITABLE SCHOOLS AND TUTORS

for BOYS and GIRLS with prospectuses of recommended establishments will be given free of charge to patents stating age of pupil, district preferred, range of fees and type of school required.

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BRITISH POSTGRADUATE MEDICAL SCHOOL

(University of London).

DEPARTMENT OF MEDICINE

A COURSE OF SIX LECTURES
on
MENINGITIS AND ENCEPHALITIS
will be given by
SIR ARTHUR HALL, D.Sc., M.D., F.R.C.P.
on
OCTOBER 5th, 12th, 19th, 26th,
NOVEMBER 2nd, 9th at 4.30 p.m.

DEPARTMENT OF SURGERY

A COURSE OF THREE LECTURES
on
ENDOSCOPIC METHODS OF EXAMINATION
will be given by
MR. V. E. NEGUS, M.S., F.R.C.S.
on
OCTOBER 1st, 8th, 15th at 2.30 p.m.

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

A COURSE OF FIFTEEN LECTURES
on
PRESENT-DAY OBSTETRICS
will be given as follows:—THURSDAY AFTERNOONS AT 3.30 p.m.

Oct.	7	Antenatal Care	Dame LOUISE McILROY, D.B.E., LL.D., M.D., F.R.C.P., F.C.O.G.
"	14	Radiology in Obstetrics and Gynaecology	Dr. R. E. ROBERTS, M.D., D.M.R.E.
"	21	Radiology in Obstetrics and Gynaecology (contd.)	Dr. R. E. ROBERTS, M.D., D.M.R.E.
"	28	Breech Cases	Prof. J. CHASSAR MOIR, M.D., F.R.C.S., F.C.O.G.
Nov.	4	Puerperal Sepsis	Dr. R. M. FRY, M.R.C.S., L.R.C.P.
"	11	Obstetric Emergencies	Dr. W. H. F. OXLEY, M.R.C.S., L.R.C.P., F.C.O.G.
"	18	Abortion	
"	25	Haemorrhage of Late Pregnancy	Prof. F. J. BROWNE, M.D., D.Sc., F.R.C.S., F.C.O.G.
Dec.	2	Haemorrhage of Late Pregnancy (contd.)	Prof. F. J. BROWNE, M.D., D.Sc., F.R.C.S., F.C.O.G.
"	9	Toxaemias of Pregnancy	Mr. G. F. GIBBERD, M.S., F.R.C.S.
"	16	Toxaemias of Pregnancy (contd.)	Mr. G. F. GIBBERD, M.S., F.R.C.S.
1938			
Jan.	6	Disproportion and Difficult Labour	Mr. LESLIE WILLIAMS, M.D., M.S., F.R.C.S., F.C.O.G.
"	13	Disproportion and Difficult Labour (contd.)	Mr. LESLIE WILLIAMS, M.D., M.S., F.R.C.S., F.C.O.G.
"	20	Caesarean Section	Mr. J. BRIGHT BANISTER, M.A., M.D., F.R.C.P., F.R.C.S., F.C.O.G.
"	27	Anaesthesia and Analgesia	Prof. J. CHASSAR MOIR, M.D., F.R.C.S., F.C.O.G.

These lectures are for regular students of the School, but a limited number of tickets are available, without fee, to medical practitioners.

Applications for tickets should be addressed to the Dean, British Postgraduate Medical School, Ducane Road, W. 12.

POST-GRADUATION SCHOOL

CENTRAL LONDON THROAT, NOSE & EAR HOSPITAL

GRAY'S INN ROAD, W.C. 1

COURSES FOR THE D.L.O. EXAMINATION

Two weeks' Course in Anatomy and Physiology for Part I commences on October 4th. Two weeks' Clinical Course for Part II commences on October 18th. The latter course includes Peroral Endoscopy and Pathology & Bacteriology Classes.

Full syllabus of these courses and of the routine clinical teaching which meets all the requirements of students for the D.L.O. Examination may be obtained from C. GILL-CAREY, F.R.C.S.Ed., *Dean.*

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Medical Students and Qualified Practitioners admitted to the Practice of this Hospital. Unusual opportunities are afforded of seeing Obstetrical Complications and Operative Midwifery (about one half of the total admission being primiparous cases). Over 2,700 patients are admitted to the Wards annually, and in the Ante-natal department there are over 20,000 attendances per annum. *Clinical demonstrations are given by the Staff daily.*
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OYAL EYE HOSPITAL MEDICAL SCHOOL

St. George's Circus, S.E.1.

D.O.M.S. COURSE.

An intensive NINE WEEKS' COURSE for Parts 1 and 2 of the D.O.M.S. EXAMINATION will commence on October 4th.

Fees Part 1, £5 5s.; Part 2, £10 10s. Applications are to be received by September 27th.

For further particulars apply to the Dean at the Hospital.

BRITISH POSTGRADUATE MEDICAL SCHOOL

DEPARTMENT OF PATHOLOGY

A COURSE OF SIX LECTURES on

THE PLANNING AND INTERPRETATION OF EXPERIMENTS IN MEDICINE

will be given by Dr. A. BRADFORD HILL, B.Sc., Ph.D. on *OCTOBER 6th, 13th, 20th, 27th, NOVEMBER 3rd and 10th, at 4.30 p.m.*

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

(University of London)

Denmark Hill, S.E.5.

THE PAST and PRESENT STUDENTS' DINNER, at which the DEAN (Dr. J. A. Drake) will preside, will be held on SATURDAY, OCTOBER 23rd, at 7.30 for 8 p.m., at the MAY FAIR HOTEL, BERKELEY STREET, W.1. The Dinner Secretary is Mr. TERENCE CAWTHORNE.

THE INTENSIVE POST-GRADUATE COURSE will be held on SATURDAY, OCTOBER 23rd, and SUNDAY, OCTOBER 24th.

J. A. DRAKE, M.D., F.R.C.P., D.P.H., Dean.

BURGH OF KILMARNOCK.

NEW MATERNITY HOSPITAL.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer at the new Maternity Hospital, Kilmarnock. Candidates must not exceed 45 years of age, and preference will be given to those possessing a qualification of the College of Obstetricians. The salary will be at the rate of £300 per annum, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £450 per annum, with free board, lodging, and laundry. The person appointed will be on the staff of the Medical Officer of Health, and will require, in addition to the duties of Resident Medical Officer at the Maternity Hospital, to undertake such other duties as may be assigned to him. The appointment, which will be a designated post under the Local Government and Other Officers' Superannuation Act, 1922, will be terminable by three months' notice on either side. The successful applicant will require to undergo a medical examination.

Applications, stating age, experience, and when at liberty to commence work, accompanied by one copy of each of three recent testimonials, enclosed in envelopes endorsed "Resident Medical Officer," must be lodged with the Subscriber by September 28th, 1937.

Council Chambers, Kilmarnock. N. J. CAMPBELL, Town Clerk.

September 9th, 1937.

COUNTY BOROUGH OF BRIGHTON.

BRIGHTON MUNICIPAL HOSPITAL.

THIRD RESIDENT ASSISTANT MEDICAL OFFICER (male).

Applications are invited for the above post at the Brighton Municipal Hospital, which is a General Hospital containing 620 beds.

Salary £300 per annum, with board, residence and laundry provided.

The appointment is a whole-time one, and will be for a period of one year.

Candidates must have held a house physician's appointment at a recognized hospital, and preference will be given to those who, in addition, have had practical experience of anaesthetics and maternity work.

The candidate must be single.

The post is designated under the Local Government and Other Officers' Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination before being appointed to the position.

Particulars and forms of application can be had from the undersigned.

Latest date for receipt of applications September 27th 1937.

September, 1937. JAS. H. ROTHWELL, Town Clerk.

WEST SUFFOLK GENERAL HOSPITAL, BURY ST. EDMUND'S.

(112 Beds.)

Applications are invited for the post of HOUSE SURGEON. Duties include charge of the Surgical beds. Salary £180 per annum, with board, lodging and laundry.

One other Resident Medical Officer.

Applicants must be registered Practitioners.

Applications, stating age, experience and nationality, with three copies of three recent testimonials, to be sent to the Secretary. Applications to be in by September 21st, 1937. The vacancy occurs October 1st, 1937.

E. E. HARDWICKE, Secretary.

September 4th, 1937.

POSTGRADUATE COURSE IN VENEREAL DISEASES

LONDON COUNTY COUNCIL (WHITECHAPEL) CLINIC, Turner Street, E.1

(Adjoining the London Hospital.)

A THREE MONTHS' COURSE of INSTRUCTION in MODERN METHODS in the DIAGNOSIS AND TREATMENT OF VENEREAL DISEASES will be given by LIEUT.-COLONEL E. T. BURKE, D.S.O., the Director of the Clinic, during OCTOBER, NOVEMBER and DECEMBER, 1937. Attendance at this Course will qualify, subject to the other conditions in the Regulations of the Ministry of Health, for the Certificate enabling the possessor to hold the post of a Venereal Diseases Officer under the Council of a County or County Borough.

The Course will consist of twenty-five systematic lectures accompanied by lantern demonstrations on Mondays and Thursdays at 2.30 p.m., beginning on October 4th and ending on December 23rd. Every Wednesday at 2.30 p.m. cases will be demonstrated. Those taking the Course will also attend the practice of the Clinic in order to obtain tuition in intravenous injections, etc. During the three months, 130 hours of attendance must be put in.

Those intending to take the Course must send their names to the Director on or before September 29th.

Fee: £10 10s.

HULL CORPORATION HEALTH DEPARTMENT.

ASSISTANT MEDICAL OFFICER OF HEALTH FOR PORT SANITARY WORK.

Applications are invited from duly qualified medical men, under the age of 40 years and of not less than three years' standing in their profession, for the appointment of an ASSISTANT MEDICAL OFFICER OF HEALTH, at a salary of £600 per annum, rising by annual increments of £25 to £700 per annum.

Candidates must hold a registered degree or diploma in State Medicine or Public Health.

The person appointed will be engaged primarily on routine Port Sanitary Work, Medical Inspection of Aliens, Bacteriological Work, and the Control of Infectious Diseases, but may be called upon to do work in any other department of the Public Health Services in accordance with the Corporation's scheme for the interchange of medical staff.

Experience in Port Sanitary Work and Infectious Diseases will be considered important qualifications for the appointment.

The appointment may be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922.

Applications, on forms to be obtained from the undersigned, with copies of not more than three recent testimonials, are returnable not later than noon on Thursday, September 23rd, 1937.

Health Department. NICOLAS GEBBIE, M.D., Guildhall, Hull. Medical Officer of Health.

September, 1937.

LIVERPOOL COUNTY BOROUGH. LOCAL EDUCATION AUTHORITY.

ASSISTANT SCHOOL MEDICAL OFFICERS

Applications are invited for THREE ASSISTANT SCHOOL MEDICAL OFFICERS in the Department of the Medical Officer to the Local Education Authority, at a salary in each case of £500 per annum, rising by annual increments of £25 to £700 per annum.

(Where a successful candidate holds a similar appointment under another Local Education Authority, and receives a salary in excess of the advertised minimum, a commencing salary of not less than the salary which the candidate is receiving under his (or her) existing appointment (not exceeding the maximum under the Liverpool Scale) may be paid.)

Candidates must be Registered Medical Practitioners, and must have had at least three years' experience.

The Officers appointed will be required to reside within the City, and devote whole-time service to the Local Education Authority, under the direction of the Medical Officer to the Local Education Authority, and will not be allowed to undertake any private practice.

The appointments will be subject to the Local Government and Other Officers' Superannuation Act, 1922, and the Standing Orders of the City Council.

Form of application, which may be obtained by forwarding a stamped, addressed foolscap envelope, should be returned, together with copies of three recent testimonials, to the undersigned not later than September 25th, 1937, and endorsed "Assistant School Medical Officer."

The canvassing of Members of the Education Committee or the City Council is strictly prohibited, and will be considered a disqualification.

W. H. BAINES, Town Clerk, and Clerk to the Local Education Authority.

Municipal Buildings, Liverpool, 2

September 17th, 1937.

ROYAL NAVAL MEDICAL SERVICE.

Vacancies exist for Medical Officers in the Royal Navy, and applications are invited for entry in January, 1938.

Candidates below the age of 28 years are preferred, and they must be registered under the Medical Acts. No examination in professional subjects will be held, but candidates will be required to attend for interview by a Selection Board.

Selected candidates will be entered for Service for a period of three years in the first instance, which may be extended to five years at the discretion of the Admiralty.

At the end of three years' service officers may retire with a gratuity of £400, but those who serve for five years will receive £1,000.

At the end of five years' Short Service permanent commissions will be given to selected officers who wish to make the Naval Medical Service their permanent career. Officers transferred to the permanent list will receive a gratuity of £1,000 (less Income Tax).

Opportunities are available for officers on the permanent list to specialise, and ample provision is made for Post-Graduate study.

Copies of the regulations for entry and conditions of service, including rates of pay and allowances, may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1, and from the Deans of all Medical Schools.

Applications for entry from intending candidates must be received not later than November 22nd, 1937.

COUNTY BOROUGH OF SMETHWICK.

SENIOR ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER

The Council invite applications from qualified medical men for the combined post of Senior Assistant Medical Officer of Health and Assistant School Medical Officer. The officer will rank next in seniority to the Deputy Medical Officer of Health.

The salary will be at the rate of £680 per annum, rising by £25 per annum to a maximum of £800 per annum. The officer will be required to reside at the Isolation Hospital and a deduction of £150 per annum will be made in respect of board, residence and laundry.

The officer appointed will work under the general supervision and control of the Medical Officer of Health and School Medical Officer, and will be required to render assistance in the general work of the department. The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the selected candidate will be required to pass a medical examination.

Forms of application may be obtained from the Medical Officer of Health, Public Health Department, Hales Lane, Smethwick, to whom application endorsed "Senior Assistant Medical Officer of Health and School Medical Officer," and accompanied by copies of three recent testimonials, must be delivered not later than first post on September 25th, 1937.

Canvassing, directly or indirectly, will disqualify.

Council House, FRANK CHAPMAN,
Smethwick. Town Clerk.
September 6th, 1937.

BOROUGH OF WILLESDEN.

RESIDENT MEDICAL OFFICER

Applications are invited for the post of Resident Medical Officer at the Willesden Municipal (Fever) Hospital. The salary will be at the rate of £250 per annum with board, lodging and laundry, and the appointment is for a period of twelve months. The Hospital admits all the notifiable diseases.

Applications, stating age, qualifications and previous experience, with copies of three recent testimonials, to be sent to the Medical Superintendent, Willesden Municipal Hospital, Brentfield Road, Neasden, N.W.10

E. A. PRATT,
Town Clerk.
September 6th, 1937.

CITY OF MANCHESTER.

MONSALL HOSPITAL FOR INFECTIOUS DISEASES (600 Beds.)

APPOINTMENT OF TWO RESIDENT ASSISTANT MEDICAL OFFICERS.

The Public Health Committee invites applications from registered medical men for the post of Resident Junior Assistant Medical Officer (grade 2) at the Monsall Hospital.

Preference will be given to applicants who have held resident surgical and medical posts in a general hospital, and have taken the diploma in Public Health, or have special experience in bacteriology, and who have had previous experience in fevers.

The salary for the appointments is £250 per annum with board, residence and laundry in addition, subject to the Manchester Corporation conditions of service.

The appointments will be made in the first instance for a period of six months, renewable for a further six months, but not renewable thereafter.

Full information and forms of application may be obtained from the Medical Officer of Health, Sunlight House, Quay Street, Manchester, 3, and applications for the post must be received by him not later than September 25th, 1937.

F. E. WARBRECK HOWELL,
TOWN CLERK.

Town Hall, Manchester, 3.
September 6th, 1937.

CITY OF COVENTRY.

MUNICIPAL GENERAL HOSPITAL.

The Public Health Committee invite applications from duly registered male medical practitioners in connection with two vacancies for ASSISTANT RESIDENT MEDICAL OFFICERS at the above Hospital (324 beds). The Hospital includes medical, surgical, obstetric and children's wards.

Each appointment will be for a period of one year. The salary will be at the rate of £250 per annum for the first six months and at the rate of £300 per annum for the second six months, with board, residence and laundry. The officers appointed will be required to pay to the Corporation any fees received in connection with their official work.

Applications, accompanied by copies of three recent testimonials, must reach the undersigned not later than first post on September 28th, 1937.

The Council House, A. MASSEY,
Coventry. Medical Officer of Health.
September 11th, 1937.

LANCASHIRE COUNTY COUNCIL.
PUBLIC ASSISTANCE COMMITTEE.
LAKE HOSPITAL AND DARNTON HOUSE, ASHTON-UNDER-LYNE, NEAR MANCHESTER.

APPOINTMENT OF JUNIOR RESIDENT MEDICAL OFFICER.

Applications are invited from registered medical practitioners for the appointment of Junior Resident Medical Officer at the above Hospital and Institution, comprising 390 and 525 beds respectively. The Hospital is recognized as a complete Training School for Nurses.

Candidates must be unmarried. Salary at the rate of £225 per annum, together with the usual residential emoluments.

The appointment will, in the first instance, be for a period of six months, the successful applicant being eligible for reappointment for a further period of six months at the end of that period.

Forms of application may be obtained from the County Medical Officer of Health, Public Assistance (Hospital and Medical) Department, County Offices, Preston, to whom all applications, accompanied by copies of not more than two recent testimonials, must be forwarded not later than Wednesday, October 6th, 1937.

County Offices, GEORGE ETHERTON,
Preston. Clerk of the County Council.
September 9th, 1937.

CITY AND COUNTY OF THE CITY OF CHESTER.

CITY HOSPITAL (258 Beds).

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER (Male) at the above Hospital. Applicants must have had experience in a Voluntary Hospital as a House Physician and/or experience as a Resident Medical Officer in a Municipal General Hospital. The person appointed will be responsible, under the direction of the Medical Officer of Health for the City, who is also Medical Superintendent of the Hospital, for the general medical work of the Hospital. The salary attached to the post is £400 per annum, rising by two annual increments of £25 to £450 per annum, with board, residence, and laundry.

Canvassing, either directly or indirectly, will be a disqualification.

Applications, stating age, qualifications, and previous experience, with copies of three recent testimonials, must be received by the Medical Officer of Health, Town Hall, Chester, on or before October 1st, 1937.

Town Hall, Chester. J. H. DICKSON,
September 13th, 1937. Town Clerk.

COUNTY COUNCIL OF MIDDLESEX.

RESIDENT ASSISTANT MEDICAL OFFICERS.

Applications are invited for the appointment of three Resident Assistant Medical Officers, two for duty at West Middlesex County Hospital, Isleworth, and one at Hillingdon County Hospital, Uxbridge. Candidates must be registered medical practitioners who have held resident appointments in a general hospital.

Special experience in surgery is required for the Isleworth appointments. The officer appointed to Hillingdon will act as an anæsthetist.

The officers appointed will work under the direction of the Medical Superintendent, and will devote their whole time to official duties.

Salary £400 per annum, rising by annual increments of £25 to £475 per annum, with board, lodging and laundry, valued at £100 per annum.

The appointments, which do not carry any superannuation rights, are for a period of four years, at the end of which period the officers will leave the Council's service. In a special case the Council may decide to retain an officer on the established staff in which case the salary will be increased to a maximum of £500.

Applications, stating age, qualifications and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than October 2nd. Application forms are not provided. Envelopes must be endorsed "Assistant Medical Officer, West Middlesex County Hospital," or "Hillingdon County Hospital," as the case may be. Relationship to any member or officer of the Council must be disclosed in the application.

Canvassing, directly or indirectly, will be a disqualification.

C. W. RADCLIFFE, "Z."
Clerk of the County Council.

Middlesex Guildhall,
Westminster, S.W.1.
September 8th, 1937.

COUNTY COUNCIL OF MIDDLESEX.

ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment on the permanent staff of an Assistant Medical Officer in the Public Health and School Medical Department. Salary £300 per annum, rising after two years' service by annual increments of £30 to £450, together with out-of-pocket travelling expenses.

Applicants must be duly qualified registered medical practitioners, and should have had special experience of ante-natal work. The possession of a Degree or Diploma in Public Health will be an additional qualification.

The duties of the post are the medical inspection of school children, the supervision of treatment of minor ailments, the carrying out of work under the maternity and child welfare schemes, and such other duties as may be required by the Council.

The officer appointed will devote whole time to the duties of the post and will be subject to medical examination which will be held during the pleasure of the County Medical Officer of Health, and will be terminable by one month's notice on either side.

Applications, stating age, qualifications and experience together with copies of not more than three recent testimonials, must be received by the undersigned not later than October 2nd. Relationship to any member or officer of the Council must be disclosed in the application. Application forms are not provided. Envelopes must be endorsed "Assistant Medical Officer 'Z'."

Canvassing, directly or indirectly, will be a disqualification.

C. W. RADCLIFFE,
Clerk of the County Council.

Middlesex Guildhall,
Westminster, S.W.1.
September 8th, 1937.

THE KIDDERMINSTER AND DISTRICT GENERAL HOSPITAL.

PATHOLOGIST.

The Committee are prepared to appoint a PATHOLOGIST and to pay him an honorarium of £200 a year. He must possess a registered medical qualification. He will be expected to attend at the Hospital on two days a week, and at such other times as may be necessary.

Applications to be sent, with copies of two testimonials, to the Secretary, Miss Susan Smith, South Cliff, Kidderminster.

GLENGALL HOSPITAL FOR MENTAL DISEASES, AYR.

Wanted, JUNIOR ASSISTANT MEDICAL OFFICER (male). General Practice or Hospital experience desirable. Salary £300 per annum (less contributions to superannuation fund), with board, lodging and laundry.

Applications, with copies of testimonials, to DR. MCRAE.

COUNTY COUNCIL OF MIDDLESEX.

The County (Tuberculosis) Sanatorium, Clare Hall, South Mimms, Middlesex.

RESIDENT ASSISTANT MEDICAL OFFICER (male).

Applications are invited for the above appointment. Candidates must be registered medical practitioners, not over 35 years of age, unmarried and of British nationality. They must have held resident hospital appointments. Practical experience in the diagnosis and treatment of tuberculosis will be an additional qualification.

Salary £400 per annum, rising by annual increments of £25 to £475, with board, lodging and laundry, valued at £100 per annum.

The officer appointed will work under the direction of the Medical Superintendent, and devote his whole time to his official duties.

The appointment will be subject to medical examination, which will be held during the pleasure of the Council, and is terminable by one month's notice on either side.

The appointment, which does not carry any superannuation rights, is for a period of four years, at the end of which period the officer will leave the Council's service. In a special case the Council may decide to retain an officer on the established staff in which case the salary will be increased to a maximum of £500.

Applications, stating age, qualifications and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than September 25th. Relationship to any member or officer of the Council must be disclosed in the application. Application forms are not provided. Envelopes must be endorsed "Assistant Medical Officer, Clare Hall 'Z'."

Canvassing, directly or indirectly, will be a disqualification.

C. W. RADCLIFFE,
Clerk of the County Council.

Middlesex Guildhall,
Westminster, S.W.1.
September 2nd, 1937.

COUNTY COUNCIL OF MIDDLESEX.

RESIDENT CASUALTY MEDICAL OFFICERS.

Applications are invited for the above appointments at Hillingdon County Hospital, Uxbridge, and Redhill County Hospital, Edgware. Candidates must be registered medical practitioners who have held the posts of both house physician and house surgeon at a general hospital, and have had considerable all-round experience.

Salary £150 per annum, with board, lodging and laundry valued at £100 per annum.

The officers appointed will be required to deal with casualties and admissions to the hospital, and to carry out such other duties as may be allotted to them.

The appointments do not carry any superannuation rights, will be subject to medical examination, are for a period of six months in the first instance, may be extended for an additional six months, and are terminable by one month's notice on either side.

The officers appointed will work under the direction of the Medical Superintendent and will devote their whole time to official duties.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than October 2nd. Application forms are not provided. Envelopes must be endorsed "Casualty Medical Officer, Hillingdon County Hospital," or "Redhill County Hospital," as the case may be. Relationship to any member or officer of the Council must be disclosed in the application.

Canvassing, directly or indirectly, will be a disqualification.

C. W. RADCLIFFE, "Z."
Clerk to the County Council.

Middlesex Guildhall,
Westminster, S.W.1.
September 8th, 1937.

BRISTOL ROYAL INFIRMARY.

Applications are invited for the post of SENIOR HONORARY ANÆSTHETIST. Candidates must be registered Medical Practitioners and hold a Diploma in Anæsthetics of the Conjoint Board of the Royal College of Physicians and Surgeons of England.

Applications, stating age, together with copies of not more than three recent testimonials, to be sent to the undersigned on or before October 16th, 1937.

ELLIS C. SMITH, F.C.I.S.,
Secretary and House Governor.

WINGFIELD - MORRIS ORTHOPÆDIC HOSPITAL, HEADINGTON, OXFORD.

RESIDENT HOUSE SURGEON (male) required. Salary £100 per annum. Duties to commence November 1st, 1937.

Applications, with testimonials, should be sent to the Secretary, Commander J. T. Henderson, R.N. (Ret.), before October 15th.

BOROUGH OF EALING.

DEPUTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified medical men with a Public Health Qualification for the position of Deputy Medical Officer of Health.

Candidates will be required to carry out medical inspection of school children and child welfare work, and such other work as may be assigned by the Medical Officer of Health.

The person appointed will be required to devote his whole time to the duties, and will not be allowed to engage in private practice. Salary will be at the rate of £750 per annum, rising to £900 by £25 per annum.

A deduction of 5 per cent. will be made from the salary in accordance with the provisions of the Local Government and Other Officers' Superannuation Act, 1922, which has been adopted by the Council, and the appointment will be subject to passing the Council's medical examination in connection therewith. Canvassing will be a disqualification.

Copies of the application form and terms of appointment can be obtained from Dr. Thomas Orr, Medical Officer of Health, Town Hall, Ealing, W.5, to whom applications, accompanied by copies of not more than three recent testimonials, must be delivered not later than September 30th.

R. H. WANKLYN,
Town Clerk.

Town Hall, Ealing, W.5.

COUNTY BOROUGH OF CROYDON.

PUBLIC HEALTH DEPARTMENT.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER FOR OBSTETRICS.

Applications are invited from qualified Medical men and women for the post of Assistant Medical Officer for Obstetrics. Candidates must have had practical Hospital experience in Gynæcology and Obstetrics, and of ante-natal and post-natal clinics.

The appointment will be for twelve months and the salary will be £300 per annum, with board, residence and laundry valued at £140 per annum.

The successful candidate will have opportunities will be given for the Membership of the Colleges of Obstetricians and Gynæcologists.

The officer appointed will be on the staff of the Medical Officer of Health, and work under his administrative supervision.

Application forms may be obtained from the Medical Officer of Health, Town Hall, Croydon, on receipt of a stamped, addressed foolscap envelope, and should be returned to him not later than 11 a.m. on Monday, September 27th, 1937, together with copies of three testimonials of recent date.

Canvassing in any form is prohibited.

JOHN M. NEWNHAM,
Town Clerk.

Town Hall, Croydon.
September 13th, 1937.

COUNTY BOROUGH OF BLACKBURN.

PUBLIC ASSISTANCE DEPARTMENT.

Applications are invited from Medical Practitioners (male) for the appointment of a RESIDENT JUNIOR ASSISTANT MEDICAL OFFICER at Queen's Park Hospital and Institution.

The staff consists of a Resident Medical Officer, a Resident Assistant Medical Officer, a Consulting Surgeon, a Laboratory Assistant and an X-ray Attendant.

There is a separate Infirmary, a separate Mental Block and a separate Hospital for children, and there is opportunity for experience in all departments, including Medical, Surgical and Midwifery cases. An X-ray apparatus is installed.

The person appointed will be required to devote his whole time to the duties, and also to act as may be directed by the Resident Medical Officer.

The appointment will be limited to a term not exceeding one year.

Salary for the first six months at the rate of £150 per annum, and thereafter at the rate of £200 per annum, together with board, apartments and attendance.

Applications, stating age, qualifications and experience, accompanied by copies of not more than three recent testimonials, must reach the Public Assistance Officer, Public Assistance Offices, Cardwell Place, Blackburn, not later than 10 a.m. on September 29th, 1937.

CHAS. S. ROBINSON,
Town Clerk.

Town Hall, Blackburn.
September 14th, 1937.

LIVERPOOL HAHNEMANN HOSPITAL, HOPE STREET.

Applications are invited for the post of HONORARY ASSISTANT RADIOLOGIST to the above Hospital.

Applications should be accompanied by a statement as to age, sex, and nationality, and by copies of three recent testimonials, and should reach the Registrar by Monday, September 27th.

Terms of appointment on application to the Registrar.

LONDON COUNTY COUNCIL.

PUBLIC HEALTH DEPARTMENT.

Applications are invited for two vacant positions of PART-TIME OBSTETRICIAN AND GYNAECOLOGIST. Appointments will be to the hospital service of the Council, but in the first instance one of the appointed officers will be allocated to DULWICH and ST. GILES' (Camberwell) Hospitals and the other to ST. MARY, ISLINGTON, ARCHWAY (Highgate) and HIGHGATE Hospitals. Remuneration £800 a year and £600 a year respectively. Each officer will be responsible, subject to the general administrative supervision and control of the medical superintendents, for the whole of the obstetric and gynaecological work at the hospitals to which he is attached (there are no maternity beds at Archway and Highgate Hospitals). Each officer will be required to live within a reasonable distance of these hospitals and to visit them daily and as required (weekly and as required in the case of Archway and Highgate Hospitals).

Application forms containing further particulars (stamped addressed envelope necessary) from the Medical Officer of Health (S.D 6), County Hall, Westminster Bridge, S.E.1. Forms returnable by September 24th. Canvassing disqualifies.

LONDON COUNTY COUNCIL.

Applications invited from Medical Practitioners with appropriate qualifications for the appointment of ASSISTANT PATHOLOGIST in the Council's pathological service. Salary £650-£25-£800.

For appointments in the Group Laboratories candidates should have special experience in one or more branches of pathology in relation to the diagnosis and treatment of disease.

For the appointment at the Central Histological Laboratory advanced experience in morbid histology and post-mortem work is essential.

Forms of application and further particulars (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 2), County Hall, Westminster Bridge, S.E.1, returnable by September 24th, 1937.

Canvassing disqualifies.

LONDON COUNTY COUNCIL.

TEMPORARY DISTRICT MEDICAL OFFICERS REQUIRED FOR THE FOLLOWING DISTRICTS:

(1) Area III, District I (part Lower Holloway and part Highbury). Provisional salary £135.

(2) Area V, District D (East Fulham). Provisional salary £160.

(3) Area VIII, District L (part Peckham, Dulwich and Sydenham). Provisional salary £222 10s.

Persons engaged required to carry out duties prescribed by Public Assistance Order, 1930, and to reside in or near district. Engagement until *March 31st, 1938, in first instance.* Remuneration and conditions subject to review.

Application form obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health, Staff Division A, County Hall, S.E.1, returnable by October 4th.

Canvassing disqualifies.

ROYAL BERKSHIRE HOSPITAL, READING.
(338 Beds.)

Applications are invited for the following resident appointments which fall vacant on November 1st, 1937:—

One HOUSE PHYSICIAN (male).

One HOUSE SURGEON to the Special Departments (Eye, Ear, Nose and Throat) (male).

One HOUSE SURGEON (male).

Appointments are for six months, and candidates must be fully qualified and registered.

Remuneration at the rate of £150 per annum, with board, residence and laundry.

Applications, stating age and experience, with copies of testimonials, to be sent to the undersigned on or before October 9th, 1937.

H. E. RYAN,
Secretary and House Governor.

TAUNTON AND SOMERSET HOSPITAL
(104 Beds), TAUNTON.

HOUSE PHYSICIAN (Male) required at once. Senior House Medical Officer and a House Surgeon also in residence. Three or six months' appointment. Salary rate of £100 p.a., board, residence, and laundry, and retention of certain fees.

Applications, with copies of not more than three recent testimonials, to

T. J. J. STACEY,
Secretary.

WORTHING HOSPITAL.

Applications are invited for the post of HOUSE PHYSICIAN, vacant on October 1st. The appointment is for six months. Salary at the rate of £130 per annum, with board, lodging and laundry. Candidate (male) should forward application, stating age, nationality, qualifications, and experience, accompanied by testimonials, to the undersigned.

A. V. OAKTON,
September 10th, 1937. Secretary-Superintendent.

LONDON COUNTY COUNCIL.

Applications invited from Medical Practitioners of at least one year's standing to undermentioned positions. Candidates must have held Resident appointment in a general hospital for at least six months. Married quarters not available.

ASSISTANT MEDICAL OFFICERS (Grade I).—Salary £350—£25—£425, with board, lodging and washing.

*(a) FULHAM HOSPITAL, St. Dunstan's Road, Hammersmith, W.6. (Two positions).

(1) Duties mainly surgical, experience in fracture work essential.

(2) Medical duties, obstetrical experience essential.

*(b) LEWISHAM HOSPITAL, Lewisham, S.E.13. Maternity, gynaecological and surgical duties.

*(c) ST. CLEMENT'S HOSPITAL, 2a, Bow Road, E.3. Medical duties. Experience in mental diseases essential.

(d) ST. GILES' HOSPITAL, Brunswick Square, S.E.5. Gynaecological and obstetrical duties.

(e) ST. JAMES'S HOSPITAL, Ouseley Road, Balham, S.W.12. Experience in children's diseases essential.

*(f) ST. NICHOLAS' HOSPITAL, Plumstead, S.E.18 Duties mainly surgical, experience in midwifery desirable.

ASSISTANT MEDICAL OFFICERS (Grade II). —Salary £250 a year, together with board, lodging and washing. Appointment for one year only in first instance (renewable for a second year under certain conditions).

*(g) LAMBETH HOSPITAL, Brook Drive, S.E.11. Duties mainly medical.

*(h) LEWISHAM HOSPITAL, Lewisham, S.E.13. (Two positions.)

(1) Duties mainly medical.

(2) Maternity, gynaecological and surgical duties mainly.

(i) PADDINGTON HOSPITAL, Harrow Road, W.9. Duties mainly medical.

*(j) QUEEN MARY'S HOSPITAL, Sidcup, Kent. Duties mainly medical, some surgical experience desirable.

(k) ST. JAMES'S HOSPITAL, Ouseley Road, Balham, S.W.12. Duties obstetrical and gynaecological, including anaesthetics.

*(l) ST. MARY, ISLINGTON, HOSPITAL, Highgate Hill, N.19. (Two positions.)

Duties mainly medical, experience in anaesthetics desirable for both positions.

*(m) ST. STEPHEN'S HOSPITAL, 369, Fulham Road, S.W.10. Duties mainly medical, experience in anaesthetics desirable.

* No accommodation for a woman.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health, Staff Division 2A, County Hall, S.E.1, returnable by October 4th.

Canvassing disqualifies.

PRESTON AND COUNTY OF LANCASTER ROYAL INFIRMARY.

The Board of Management invite applications from unmarried gentlemen, properly qualified and registered, for the post of HOUSE SURGEON. Duties in the Casualty Department and resident care of the beds of the Orthopaedic Surgeons and Assistant Surgeons.

Six months' appointment from October 1st. Accidents and casualties in 1936, 12,535.

Salary at the rate of £150 per annum, with board, residence and laundry.

Applications, stating age and qualifications, accompanied by copies of testimonials, to be forwarded as soon as possible to Mr. JOHN GIBSON, Superintendent and Secretary, Royal Infirmary, Preston.

September 14th, 1937.

WARNEFORD GENERAL HOSPITAL.
(164 Beds.)
LEAMINGTON SPA.

Required a HOUSE PHYSICIAN, also a HOUSE SURGEON. The appointments are for six months each. Salary £150 per annum, with board and laundry. The Hospital is recognized by the Royal College of Surgeons of England under paragraphs 21 and 23 of the Fellowship regulations.

Applications for the above posts from qualified registered Medical Practitioners (single men only) should be sent, together with three recent testimonials, to the undersigned on or before Monday, September 20th, 1937.

EDWARD L. WIRGMAN,
House Governor and Secretary.

WARNEFORD GENERAL HOSPITAL.
LEAMINGTON SPA.

CASUALTY OFFICER and JUNIOR HOUSE SURGEON (combined post) required. Duties to commence at once. Six months' appointment, renewable. Salary £150 per annum, with board, residence and laundry.

Candidates must be qualified, registered under the Medical Acts and unmarried.

Applications, stating age and experience, together with copies of recent testimonials, should be sent to the undersigned.

EDWARD L. WIRGMAN,
House Governor and Secretary.

COUNTY COUNCIL OF DURHAM

EDUCATION DEPARTMENT.

ASSISTANT OCULIST.

Applications are invited for the post of ASSISTANT SCHOOL OCULIST to the Education Committee. Candidates must be skilled Refractionists and must also have occupied the post of House Surgeon in an eye hospital, or in the eye department of a general hospital for a period of not less than six months. Commencing salary £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum, with travelling expenses in accordance with the County Regulations.

The person appointed will hold an established post under the Local Government and Other Officers' Superannuation Act, 1922, and will be subject to the provisions of that Act. He (she) will be required to devote his (her) whole time to the duties of the office and to reside at a place to be approved by the Education Committee. The appointment will be subject to three calendar months' notice on either side, expiring on the last day of any calendar month.

Canvassing, directly or indirectly, is prohibited and will disqualify.

Forms of application, to be returned not later than Saturday, October 9th, 1937, can be obtained from the Director of Education, Shire Hall, Durham, on receipt of a stamped addressed foolscap envelope.

THOS. B. TILLEY,
Shire Hall, Durham. Director of Education.
September 13th, 1937.

COUNTY BOROUGH OF WEST HAM.

PLAISTOW FEVER HOSPITAL.

Applications are invited for the appointment of a MALE SENIOR RESIDENT MEDICAL OFFICER at the above-mentioned Hospital.

The salary will be at the rate of £350 per annum, rising by annual increments of £25 to a maximum of £450 per annum, with residential allowances. The appointment is a designated post under the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and the statutory contributions under the Act will be deducted from the salary. The successful candidate will be required to pass a medical examination.

Candidates must have held a residential appointment in a general hospital, and preference will be given to candidates who have also had residential experience in a fever hospital.

Applications, accompanied by copies of three recent testimonials, must be made on forms obtained from the Deputy Medical Officer of Health, Municipal Health Offices, 88, Romford Road, Stratford, E.15, and returned to the Town Clerk, Town Hall, West Ham, E.15, not later than Monday, September 27th, 1937.

CHARLES E. CRANFIELD,
Town Hall, West Ham, E.15. Town Clerk.
September 13th, 1937.

PRINCESS ALICE MEMORIAL HOSPITAL, EASTBOURNE.

(Voluntary General Hospital, 120 Beds, Two House Surgeons.)

Applications are invited for the post of RESIDENT HOUSE SURGEON (male), vacant on October 9th, 1937. Salary at the rate of £150 per annum, with board and laundry.

Applications, with copies of three recent testimonials, should be delivered to the undersigned by first post on Wednesday, September 29th, 1937.

W. RUSSELL RUDALL,
September 13th, 1937. Secretary.

ROYAL HAMPSHIRE COUNTY HOSPITAL, WINCHESTER. (167 Beds.)

HOUSE SURGEON.

Applications are invited from fully qualified men for the above post to take up duties on November 1st next. Six months' appointment. Salary £125 per annum, with board, residence and laundry.

Candidates, who must be of British nationality, to make application to the undersigned, enclosing copies of three testimonials.

HERBERT MASLEN,
September 13th, 1937. Secretary.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

Applications are invited for the post of HOUSE PHYSICIAN. The appointment will be for six months from October 1st, 1937, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 per annum, with board, residence and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Tuesday, September 21st.

J. A. BEARDSALL,
Secretary-Superintendent.

THE STOCKPORT INFIRMARY.
(140 Beds.)

Applications are invited for the post of HOUSE SURGEON.

Applicants must be male and unmarried. Salary £150 per annum, with board, residence and laundry.

Duties to commence October 8th, 1937.

Applications are invited for the post of CASUALTY OFFICER and HOUSE SURGEON to the Orthopaedic and Gynaecological Departments. Previous experience is desirable.

Applicants must be male and unmarried. Salary £150 per annum, with board, residence and laundry.

Duties to commence November 1st, 1937.

The Resident Staff consists of 4 Resident Surgical Officer, two House Surgeons and a House Physician.

Applications, together with copies of three recent testimonials, stating age, nationality and qualifications, to be sent to the undersigned not later than September 21st, 1937.

H. G. PRICE,
September 9th, 1937. Secretary-Superintendent.

HULL ROYAL INFIRMARY.

Applications are invited from registered Medical Practitioners for the following post (male):—

SECOND CASUALTY OFFICER, vacant October 8th. Salary at the rate of £150 per annum, plus board, residence, and laundry.

In addition to carrying out duties in the Casualty Department, the Officer appointed will act as House Surgeon to one of the Honorary Assistant Surgeons, and will thus obtain Ward and Theatre experience. He will be eligible for promotion to a more senior post when a vacancy occurs.

The appointment will be for a period of six months, but will be determinable at any time by one month's notice on either side.

Applications, giving particulars of age, experience, and nationality, together with copies of recent testimonials, should be addressed to the undersigned

R. J. CARLESS,
September 13th, 1937. House Governor.

BARROWMORE TUBERCULOSIS SANATORIUM AND SETTLEMENT,
Gt. Barrow, Chester.

HOUSE PHYSICIAN (Male) required at once. The appointment is for six months, and is renewable. Salary £150 per annum, with board, residence, and laundry.

The Institution deals with all stages of Pulmonary Tuberculosis, and comprises Hospital and Sanatorium accommodation, extensive workshops for graduated work, and a Settlement.

Special treatment, Sanocrysin and Artificial Pneumothorax given.

Applications, marked "House Physician," with copies of three testimonials, should be sent to the Medical Director at the above address.

E. L. SANDILAND,
Medical Director

BURSLEM HAYWOOD AND TUNSTALL WAR MEMORIAL HOSPITAL, TUNSTALL, STOKE-ON-TRENT.
(66 Beds. Two Residents.)

Applications are invited for the post of JUNIOR RESIDENT HOUSE PHYSICIAN. Salary £150 per annum, with board, residence and laundry.

The appointment is for six months in the first instance, reappointment may be applied for.

Applications, stating age and experience, with copies of three testimonials, to be sent to the undersigned immediately.

C. E. LOWNDES,
Secretary

CITY OF DUBLIN SKIN AND CANCER HOSPITAL
(Incorporated by Royal Charter).
HUME STREET

DEEP X-RAY AND RADIUM THERAPIST.

Above whole-time appointment to fill vacancy occurring shortly. Applications are desired from medical practitioners who possess the qualification of D.M.R.E. or D.M.R. or equivalent practical experience. Salary £500 per annum, with allowances. Copies of testimonials are required

Full particulars may be obtained by application to "The Secretary."

STOCKTON AND THORNABY HOSPITAL.
Stockton-on-Tees.
(140 Beds.)

HOUSE PHYSICIAN (MALE) alternating with Casualty Officer, required for a period of at least six months, to commence October 1st, 1937. Salary £150 per annum, with board, residence, and laundry. Candidates must be duly qualified and unmarried. Applications, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned.

J. WILKINSON,
Secretary.

BRISTOL GENERAL HOSPITAL.

RESIDENT SURGICAL OFFICER AND REGISTRAR (male).

The Committee invites applications for the appointment. Salary at the rate of £200 per annum (plus estimated emoluments of £200 p.a.), with board, residence, etc., provided in the Hospital.

Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability. The duties attaching to the post are chiefly surgical, but being also in part administrative, experience in this direction is therefore essential.

Applications, accompanied by copies of testimonials, three of which must preferably be given in support of the application, to be forwarded to the undersigned on or before October 8th, from whom forms of application and copies of the duties may be obtained.

The Hospital contains 273 beds, and is a School of Medicine attached to the University of Bristol.

THOMAS W. GREGG, F.C.C.S.,
Secretary.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, WIGAN (180 Beds).

A vacancy occurs for an HONORARY ASSISTANT SURGEON, who must be legally registered to practise medicine and surgery, and reside preferably within six miles of the Infirmary.

Applications, with copies of two recent testimonials, stating age qualifications, etc., to reach the undersigned (from whom further information can be obtained) by Monday, October 4th. Canvassing will be a disqualification.

By Order of the Board of Management.
A. STANLEY BRUNT,
September 9th, 1937. General Superintendent and Secretary.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, WIGAN. (180 Beds.)

Wanted for twelve months, commencing October 1st, 1937, RESIDENT MEDICAL and SURGICAL OFFICER and REGISTRAR. Candidates must have held previous Resident appointments at a Hospital. Preference will be given to those possessing the F.R.C.S. or M.S Degree. The salary is at the rate of £250 per annum, with board, residence and laundry. Applications, giving proof of registration and not more than three testimonials, to be sent to the undersigned as soon as possible.

A. STANLEY BRUNT,
General Superintendent and Secretary.

GREAT YARMOUTH GENERAL HOSPITAL.
(72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two appointments). Duties to commence at once.

Applicant must be male and unmarried Salary at the rate of £140 per annum, with board, residence and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FREDK. L. GATFIELD,
Secretary

EAR AND THROAT HOSPITAL, BIRMINGHAM 3.

THIRD HOUSE SURGEON wanted (non-resident) Must be qualified and with clinical experience. Salary at the rate of £150 per annum, with lunch on six week-days, and an allowance of £50 per annum in lieu of board and lodging Appointment for six months to commence as soon as possible.

Candidates are eligible for election to Senior posts. Facilities for training for D.L.O.

Applications and testimonials to be forwarded to the undersigned immediately.

W. H. LOMAS,
Secretary.

SALFORD ROYAL HOSPITAL.
(256 Beds.)

The Board of Management invites applications from duly registered Medical Practitioners for the appointment of HONORARY DERMATOLOGIST.

Applications, accompanied by certificates of age and of registration, and by not more than six testimonials, must be delivered to the undersigned on or before 30th instant. (from whom all details of duties may be obtained)

By Order of the Board.
H B SHERSWELL,
September 13th, 1937. General Superintendent and Secretary.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN.
(80 Beds.)

Wanted—forthwith—RESIDENT HOUSE PHYSICIAN (LADY). Salary £130 p.a. The appointment is for six months. Applicants must be fully qualified. Applications, with three testimonials, to be sent to the undersigned.

ARTHUR N. WHISTON,
25, St. Mary's Gate, Derby. Secretary.

KENT COUNTY OPHTHALMIC AND AURAL HOSPITAL, MAIDSTONE.
(109 Beds.)

Applications are invited for the posts of SENIOR and JUNIOR OPHTHALMIC HOUSE SURGEONS, which become vacant on October 1st next. Each appointment is for six months

Candidates must be duly qualified and registered medical practitioners, single, and of British birth and nationality, and should have experience of refractions. Salary at the rate of £250 and £200 per annum respectively, with board, residence and laundry. The Hospital is recognized by the Examining Board for the D.O.M.S.

Applications, stating age and qualifications, together with copies of not more than three testimonials, should be sent to the undersigned.

JOHN W. STRICKLAND, Secretary.

VICTORIA HOSPITAL, BURNLEY.
(150 Beds.)

HOUSE PHYSICIAN (male).

Applications are invited for the above post, which will become vacant on September 30th. The duties include the giving of a certain number of anaesthetics. The appointment is for six months in the first instance, at a salary of £150 per annum, together with board, residence and laundry. At the end of this period reappointment may be applied for, and, if granted, the salary for the second six months will be at the rate of £200 per annum.

Applications, giving full details of qualifications and experience, stating nationality, together with copies of recent testimonials, should be addressed to the undersigned forthwith.

J. E. WHEATCROFT,
Secretary.

THE ROYAL HOSPITAL, WOLVERHAMPTON.
(Incorporated under Charter.)

HOUSE SURGEON required (General Surgery).

The Hospital contains 300 beds, includes the usual special departments, and is recognised by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months. Salary at the rate of £100 per annum. Board, furnished rooms, and laundry provided. Applications, with copies of testimonials, to be forwarded to the undersigned.

Wolverhampton.
September 13th, 1937. W. H. HARPER,
House Governor.

THE ROYAL INFIRMARY, BRADFORD

TWO HOUSE PHYSICIANS and FOUR HOUSE SURGEONS (MALE) wanted for November 1st
Six months' appointments

Candidates must be single and legally qualified Salary £150 per annum, with board, residence, and washing.

There are 345 beds and nine Resident Officers

Applications, stating age, qualifications, and previous experience, with copies of recent testimonials, should be sent to the undersigned not later than Monday, October 4th.

H. TRUSSON, F.C.I.S.,
House Governor-Secretary.

NORTH LONSDALE HOSPITAL, BARROW-IN-FURNESS. (152 Beds.)

There will be vacancies for a Resident Surgical Officer and a RESIDENT HOUSE PHYSICIAN at this Hospital on October 15th, 1937, and applications are invited for the positions from fully qualified male Practitioners experienced in the administration of Anaesthetics. Salaries, Surgical Officer £200 and Physician £175 per annum, with board, residence and laundry. Applications, stating age, qualifications, experience and nationality, accompanied by copies only of three recent testimonials, should be sent to the Secretary on or before September 30th.

NORTH RIDING INFIRMARY, MIDDLESBROUGH.

The General Board invite applications for the post of HONORARY DENTAL SURGEON.

Applications, stating age, qualifications, and experience, accompanied by copies of three testimonials, should be sent to the undersigned not later than Monday, September 27th, 1937.

By Order of the Board,
GERALD A. KENYON,
Secretary-Superintendent

BENN ULSTER EYE, EAR, AND THROAT HOSPITAL (INC.),
Clifton Street, Belfast.

HONORARY ASSISTANT SURGEON required for Ear, Nose, and Throat Department. Preference given to applicant holding the F.R.C.S.

Application to be made to the Honorary Secretary before October 14th, 1937.

THE LONDON HOMOEOPATHIC HOSPITAL,
Great Ormond Street and Queen Square,
Bloomsbury, W.C.1.
(A General Hospital of 200 Beds.)

The Board of Management invite applications for the appointment of:
PHYSICIAN FOR DISEASES OF CHILDREN.

Applicants must possess a registrable University Degree and the successful candidate must be or become a Member of the British Homoeopathic Society. It is required that successful candidates for posts on the Honorary Medical and Surgical Staff of the Hospital should show evidence of knowledge of the Theory and Practice of Homoeopathy within one year of appointment by having attended one or more of the Systematic Courses of Lectures at the Hospital.

In the event of a member of the Honorary Staff of the Hospital being appointed, candidates are asked to state whether they are prepared to stand for the appointment of Assistant Physician for Diseases of Children

Candidates will be required to attend a meeting of the Medical Committee on a date in October to be announced later.

Applications, stating age, with 35 copies of application and 35 copies of each testimonial, should be sent not later than September 30th, 1937, to the undersigned, of whom further particulars may be obtained.

L. J. KNOWLES,
Secretary.

THE LONDON HOMOEOPATHIC HOSPITAL,
Great Ormond Street and Queen Square,
Bloomsbury, W.C.1.

The Board of Management invite applications for the appointment of:
PHYSICIAN TO THE CHILDREN'S DISPENSARY at 41, Granville Gardens, Shepherd's Bush Green, W.12 (a Branch of the Hospital's Out-Patient Department).

The appointment entails attendance at the Dispensary on one afternoon a week for approximately two hours from 2 until 4 p.m.

Applicants must possess a registrable University Degree and be Associates or Members of the British Homoeopathic Society. It is also required that candidates shall have had some special experience in the treatment of children.

Candidates will be required to attend a meeting of a Sub-Committee at the Hospital for interview

Applications, stating age, with three copies of application and three copies of each testimonial, should be sent to the undersigned not later than September 30th, 1937.

L. J. KNOWLES,
Secretary.

ROYAL NORTHERN HOSPITAL,
Holloway, N.7.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Male). Candidates must be registered medical practitioners of at least two years' standing and have held at least two previous house appointments. Preference will be given to candidates experienced in practical operative surgery.

The appointment is for one year from November 9th, 1937. Particulars concerning remuneration and emolument (amounting to approximately £370 with board and residence), together with forms of application and rules, can be obtained from the undersigned

Applications, with copies of testimonials, should be sent on or before October 8th to

GILBERT G. PANTER,
Secretary.

VICTORIA HOSPITAL FOR CHILDREN,
Tite Street, Chelsea, S.W.3.
(138 Beds)

The Committee of Management invite applications for the post of HOUSE SURGEON for the period October 4th, 1937, to January 31st, 1938, with possibility of another appointment. Salary at the rate of £100 p.a., with board, lodging, and washing. Candidates must attend the Hospital for the purpose of an interview on Tuesday, September 28th, 1937, at 5 p.m. They must be registered under the Medical Acts. Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Monday, September 27th, 1937.

D. ST. JOHN BAMFORD,
Secretary.

THE LONDON CHEST HOSPITAL,
Victoria Park, E.2.,
formerly City of London Hospital for Diseases of the Heart and Lungs.
(Bus, Tram and Rail, Cambridge Heath, L.N.E. Railway.)

A vacancy for a HOUSE PHYSICIAN (male) will occur on November 1st. Six months' appointment. Salary at the rate of £100 per annum Board, residence and laundry provided.

Applications, with copies of three testimonials, should be sent to the Secretary on or before October 5th.

N.B.—Vacancies occur at an interval of two months.

ROYAL LONDON OPHTHALMIC HOSPITAL
(Moorfields Eye Hospital),
City Road, E.C.1.

HONORARY ASSISTANT PHYSICIAN.

Applications are invited for the office of Honorary Assistant Physician to the above Hospital.

Candidates must be Fellows or Members of the Royal College of Physicians of London.

Canvassing is not permitted. Candidates are requested to send applications, with copies of testimonials, to the Members of the Committee of Management and the acting Medical and Surgical Staff, whose names and addresses can be obtained on applications to the Secretary.

Applications, stating age, with copies of not more than three testimonials, must be received by the undersigned not later than October 7th, 1937.

A. J. M. TARRANT,
Secretary.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL,
Gray's Inn Road, W.C.1.

ASSISTANTS IN THE OUT-PATIENTS' DEPARTMENT.

There are the following vacancies:—
SECOND ASSISTANT to attend on Saturdays at 11.30 a.m.
THIRD ASSISTANT to attend on Tuesdays at 5 p.m.
THIRD ASSISTANT to attend on Mondays at 2 p.m.

The duties are to assist the Surgeons in seeing the patients, and the posts are honorary ones.

Applications, which may be for periods of three, six or twelve months, should be sent to the undersigned before September 24th.

JOHN H. YOUNG,
Secretary-Superintendent.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL,
Gray's Inn Road, W.C.1.

RESIDENT HOUSE SURGEON (MALE).

There will be a vacancy for a THIRD RESIDENT HOUSE SURGEON to enter on duty on October 1st, 1937. The appointment will be for a period of nine months: three months as Third House Surgeon, three months as Second House Surgeon, and three months as First House Surgeon. Remuneration at the rate of £75 per annum.

Applications, accompanied by copies of not more than three testimonials, should be sent to the undersigned as soon as possible.

JOHN H. YOUNG,
Secretary-Superintendent.

LONDON HOSPITAL, E.1.

There are vacancies for TWO HONORARY ASSISTANT DENTAL SURGEONS. The successful candidates, who will also receive an appointment in the Dental School, will each be required to attend on two afternoons a week.

Applications, with copies of testimonials, should be sent to the House Governor, and should arrive not later than on Wednesday, October 20th.

A. G. ELLIOTT,
House Governor.

ELIZABETH GARRETT ANDERSON HOSPITAL, EUSTON ROAD, N.W.1.

The Managing Committee invite applications from qualified medical women for the appointment of: HONORARY PHYSICIAN to the Children's Department. Applicants must hold the M.D. degree, and be Members of the Royal College of Physicians.

Fifteen copies of applications, giving full particulars, with copies of three recent testimonials, should be sent to the undersigned before October 1st, 1937.

JEAN R. MURRAY,
September 3rd, 1937. Secretary.

ELIZABETH GARRETT ANDERSON HOSPITAL, EUSTON ROAD, N.W.1.

Applications are invited from fully qualified medical women for the post of MEDICAL Registrar—Non-Resident. Honorarium £100 per annum.

Particulars can be obtained from the undersigned, to whom applications, with testimonials, should be sent before October 1st, 1937.

JEAN R. MURRAY,
September 3rd, 1937. Secretary.

ELIZABETH GARRETT ANDERSON HOSPITAL, EUSTON ROAD, N.W.1.

Applications are invited from fully qualified medical women for the posts of HONORARY CLINICAL ASSISTANTS in the Medical and Surgical Departments. Particulars of the posts vacant can be obtained from the undersigned, to whom applications should be sent.

JEAN R. MURRAY,
September 1st, 1937. Secretary.

THE HOSPITAL FOR SICK CHILDREN,
Great Ormond Street, London, W.C.1.

Applications are invited for the post of RESIDENT SURGICAL OFFICER, which becomes vacant on November 1st, 1937. Salary £200 per annum.

The appointment is tenable in the first instance for one year, but may be held for a period of two years, subject to annual re-election.

Candidates must be unmarried, possess a legal qualification to practise, and must have held a responsible hospital appointment at a general hospital.

Applications must be received by noon on Monday, September 27th, 1937, and candidates must be prepared to attend for interview at the hospital on Wednesday, October 6th, 1937, at 4.45 p.m.

Full details of the appointment and forms of application are obtainable from the undersigned.

HERBERT F. RUTHERFORD.
August, 1937 Secretary.

THE HOSPITAL FOR SICK CHILDREN,
Great Ormond Street, London, W.C.1.

A RESIDENT HOUSE PHYSICIAN (male) and a RESIDENT HOUSE SURGEON (male) are required. Duties to commence on October 18th, 1937.

The appointments are tenable for six months. Salaries at the rate of £100 per annum.

Candidates must be unmarried, possess a legal qualification to practise, and have held a responsible appointment at a general hospital.

Applications must be received by noon on Monday, September 27th, 1937, and candidates must be prepared to attend for interview by the Joint Committee at 4.45 p.m. on Wednesday, October 6th, 1937.

Further particulars and forms of application are obtainable from the undersigned.

HERBERT F. RUTHERFORD.
August, 1937. Secretary.

DREADNOUGHT HOSPITAL, GREENWICH, S.E.10 (Seamen's Hospital Society).

Applications are invited for the non-resident post of RECEIVING ROOM OFFICER (male), for six months from October 15th. Salary £200 per annum, with lunch and tea. Hours of attendance week-days 9 a.m. to 5 p.m., Saturdays 9 a.m. to 12 noon. Applications, stating age, nationality, and experience of previous house appointments, accompanied by copies of testimonials, to be sent in immediately to the undersigned.

F. A. LYON,
August 26th, 1937. Secretary.

ALBERT DOCK HOSPITAL, CONNAUGHT ROAD, E.16.
(Seamen's Hospital Society.)

RESIDENT MEDICAL OFFICER required for six months from October 1st. Salary £110 per annum and a proportion of fees, with board, residence and laundry. Candidates must be male. Applications, with copies of three testimonials, to be sent in immediately to the undersigned.

F. A. LYON,
Secretary.
Seamen's Hospital Society, Greenwich, S.E.10.

NATIONAL HOSPITAL, QUEEN SQUARE, W.C.1.

HONORARY ASSISTANT OPHTHALMIC SURGEON.

Applications are invited for the post of Honorary Assistant Ophthalmic Surgeon and should be sent to the undersigned on or before September 30th, 1937. Applicants should be Fellows of the Royal College of Surgeons of England.

GODFREY H. HAMILTON,
Secretary.

NATIONAL HOSPITAL, QUEEN SQUARE, W.C.1.

HONORARY DENTAL SURGEON.

Applications are invited for the post of Honorary Dental Surgeon, and should be sent to the undersigned on or before September 30th, 1937.

The qualifications required are F. or M.R.C.S. and L.D.S. Any further particulars may be obtained in the Secretary's Office.

GODFREY H. HAMILTON,
Secretary.

NATIONAL HOSPITAL, QUEEN SQUARE, W.C.1.

REFRACTION OFFICER.

Applications are invited, from fully Registered Practitioners, for the post of CLINICAL ASSISTANT in the Refraction Department, and should be sent to the undersigned on or before September 30th, 1937. Two sessions each month, honorarium £1 1s. per session.

GODFREY H. HAMILTON,
Secretary.

STANNINGTON CHILDREN'S SANATORIUM.
(310 Beds.)

RESIDENT ASSISTANT MEDICAL OFFICER
(female).

Applications are invited from duly qualified medical women for the above post. Candidates must have held a resident hospital appointment since qualifying, and have had experience in the diagnosis and treatment of Tuberculosis and Bacteriology.

The Sanatorium deals with all forms of Tuberculosis, surgical and medical, in children, and is fully equipped for the work.

Salary £250-£300 p.a. according to experience, with full residential emoluments.

Applications, marked R A M O, with copies of testimonials, should be sent not later than September 27th to the Secretary MR. ISAAC NIXON, 21, Eldon Square, Newcastle-upon-Tyne, 1.

THE CHRISTIE HOSPITAL AND HOLT RADIUM INSTITUTE, WITHINGTON, MANCHESTER, 20.

Applications are invited for the post of RESIDENT MEDICAL OFFICER to the above Hospital and Institute for duty with the Radiotherapy Department. Appointment is for six months in the first instance, but is renewable. Salary at the rate of £150 per annum, plus residence (private suite), board, etc.

The appointment offers an excellent opportunity of obtaining experience in Radium and X-ray Therapy. Candidates must have had previous Medical and Surgical experience.

Applications, stating age, qualifications and previous experience, to be submitted immediately to the undersigned.

PERCY N. GLASS,
Superintendent

JERSEY GENERAL HOSPITAL AND POOR LAW INFIRMARY

Applications are invited for the post of HOUSE SURGEON, duties to commence on October 1st next. The appointment is for six months, at a salary of £175 per annum, subject to reappointment Board, residence and laundry are provided.

Applications, stating age, nationality and qualifications, with copies of recent testimonials, should be addressed to the Secretary-Accountant, from whom all further particulars may be obtained.

H. S. PLYMEN,
Secretary-Accountant

HARLOW WOOD ORTHOPAEDIC HOSPITAL, near Mansfield Notts (155 Beds.)

Applications are invited for the post of HOUSE SURGEON (male). The salary is at the rate of £200 per annum, with board, residence and laundry. The duties may include attendance at the associated Hospitals and Out-patient Clinics, and commence on November 1st, 1937. The appointment will be for six months and may be renewed for a further six months.

Applications, stating age and experience, with copies of testimonials, should be received by the Secretary not later than September 22nd, 1937.

GENERAL INFIRMARY, SALISBURY
(Voluntary Hospital, 191 Beds, now in course of extension to 225 Beds.)

HOUSE SURGEON (male) required to commence duty at the end of September.

The appointment is for six months, with the right of applying for reappointment for a further period of six months. Candidates must be unmarried, fully qualified and registered.

Salary £125 per annum, with board-residence.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be obtained.

MINEHEAD & WEST SOMERSET HOSPITAL, MINEHEAD, SOMERSET

Applications are invited for the post of RESIDENT HOUSE SURGEON (male or female) to this Hospital. Duty to commence on October 1st, 1937. Appointment for a period of six months. Salary £150 per annum, with board, residence and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than September 25th, 1937.

W. H. P. RODDA,
Secretary.

HOVE GENERAL HOSPITAL, HOVE.
(50 Beds.)

Applications are invited for the appointment (vacant October 1st) of SENIOR RESIDENT MEDICAL OFFICER (male). Salary £150 p.a., with board, apartments and laundry. The appointment offers excellent opportunities for surgical experience.

Applications, stating age and qualifications, together with three recent testimonials, to be forwarded to the undersigned as soon as possible.

K. C. BOOKER,
Secretary-Superintendent

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL), City Road, E.C.1.

Applications are invited for the posts of TWO OUT-PATIENT OFFICERS to attend on Wednesdays and Saturdays (mornings) each week. Candidates must be registered Medical Practitioners.

Salary at the rate of £100 per annum. The Out-Patient Officers will be appointed for a period of one year and will be eligible for reappointment. Copies of regulations can be obtained on application.

Applications, with testimonials, stating age and qualifications, together with photograph, must be received by the undersigned not later than September 30th, 1937.

A. J. M. TARRANT,
Secretary.

KING GEORGE'S SANATORIUM FOR SAILORS, LIPHOOK, HANTS

(Seamen's Hospital Society) For the Treatment of Pulmonary and Non-Pulmonary Tuberculosis.

ASSISTANT MEDICAL OFFICER (single, male or female) required as from October 15th for six months. Salary at the rate of £200 per annum in the first instance. Applications, with copies of not less than three testimonials, to be sent in on or before September 24th to the undersigned.

F. A. LYON,
Secretary, Seamen's Hospital Society, Greenwich, S.E.10.

Greenwich
August 27th, 1937

DONCASTER ROYAL INFIRMARY
(185 Beds.)

HOUSE PHYSICIAN (male) required immediately. Six House Surgeons are resident. Salary at the rate of £175 per annum, with residence, board and laundry. This large industrial area offers excellent opportunities for gaining experience.

Applications, accompanied by not more than three testimonials, to be sent to the undersigned immediately.

R. LANCASTER,
Secretary-Superintendent

THE LADY CHICHESTER HOSPITAL, HOVE, FOR FUNCTIONAL NERVOUS DISEASES.
(60 Beds.)

SENIOR HOUSE PHYSICIAN required. Six months' appointment at £100 per annum all found. Also JUNIOR, at £50 per annum. Valuable experience for Diploma in Psychological Medicine.

Duties to commence immediately. Applications, with testimonials, to be sent to the Secretary, Mr P. F. Spooner, 33, West Street, Brighton.

August 21st, 1937.

ROYAL SURREY COUNTY HOSPITAL, GUILDFORD
(216 Beds.)

WANTED, OCTOBER 1st, 1937, HOUSE PHYSICIAN (Male).

Six months' appointment; duties House Physician and part-time Casualty Officer.

Salary £150 per annum, with board, residence and laundry.

Applications, stating age and essential particulars, with copies of not more than three testimonials, to reach the Secretary-Superintendent not later than September 21st, 1937.

SCARBOROUGH HOSPITAL, YORKSHIRE
(140 Beds.)

Wanted, TWO FEMALE HOUSE SURGEONS, one to take up duties on October 18th, 1937, and one to take up duties on November 1st, 1937.

The appointment to be until April 30th, 1938.

Salary at the rate of £150 per annum, together with board residence, laundry, etc.

Applications, stating age and experience, together with copies of not more than three recent testimonials, to be sent to the Hon. Secretaries no later than the first post on September 21st, 1937.

THE BUCHANAN HOSPITAL, ST LEONARDS-ON-SEA
(103 Beds.)

HOUSE SURGEON (female) required to commence duties October 1st, 1937. Salary from £125 per annum according to experience.

Candidates must be duly registered medical practitioners, and applications, which should include three copies of recent testimonials, should be sent to the undersigned immediately.

FRANK HART,
Secretary

GLASGOW CORPORATION MENTAL Hospitals Service.

JUNIOR ASSISTANT PHYSICIAN wanted for Hawkhead Mental Hospital. Salary commencing £300, with board, apartments and laundry. The Hospital is in outskirts of Glasgow and offers excellent facilities for research work. Apply to Medical Superintendent, Hawkhead Mental Hospital, 510, Crookston Road, Glasgow, S.W.2.

THE ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Road, S.E.1.

RESIDENT CASUALTY AND ORTHOPAEDIC HOUSE SURGEON.

Applications are invited from qualified male practitioners for the post of Resident Casualty and Orthopaedic House Surgeon to work in the Out-Patient Department with care of Orthopaedic beds, vacant on October 1st, 1937, at £150 per annum. Candidates for this post should have held a previous appointment. The appointment is in the first instance for a period of six months.

Applications, with copies of testimonials, should be forwarded not later than September 23rd to the Secretary at the Hospital, from whom further particulars can be obtained.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, High Holborn, W.C.1.

Applications are invited for the appointment of REFRACTION OFFICER, for attendance on Tuesday and Friday afternoons, for a commencing period of three months, i.e., November 1st, 1937, to January 31st, 1938, after which the selected candidate will be reappointed for a further six months, if recommended by the Medical Committee.

Salary is at the rate of £100 p.a., payable monthly.

Candidates must be duly qualified medical practitioners, and have had experience in Refraction work.

Applications, with copies of testimonials, are to be sent to the Secretary (from whom further particulars can be obtained) on or before September 30th, 1937.

GENERAL LYING-IN HOSPITAL, York Road, Lambeth, S.E.1.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER and ANAESTHETIST. Salary at the rate of £100 per annum, with board, residence and laundry.

Appointment for three months, commencing October 1st. The successful candidate will, subject to satisfactory service, be required to succeed to the Senior Medical Officer's post for a further three months.

Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to the Secretary not later than Monday, September 27th.

SAINT MARY'S HOSPITAL FOR WOMEN AND CHILDREN, PLAISTOW, E.13.

Applications are invited for the posts of RESIDENT SURGICAL OFFICER and RESIDENT HOUSE PHYSICIAN (vacant November 1st), male or female. The appointments are for six months and will expire on April 30th. Board and residence are provided. Salaries at the rate of £155 and £150 per annum respectively, including £5 allowance for laundry. Personal canvassing not desired.

Applications, with copies of three recent testimonials, to be sent to the undersigned not later than October 5th.

ERNEST WILKES,
Secretary.

ROYAL NORTHERN HOSPITAL, Holloway, N.7.

Applications are invited for the following posts:

CASUALTY OFFICER (Locum), vacant November 1st, 1937.

The appointment is for three months, with salary at the rate of 4 guineas a week, with board, residence and laundry. Forms of application and rules can be obtained from the undersigned.

Applications, with copies of testimonials, should be sent on or before October 1st to

GILBERT G. PANTER,
Secretary

ST. JOHN'S HOSPITAL, LEWISHAM, S.E.13.

Applications are invited from registered medical practitioners to fill the office of CLINICAL ASSISTANT to the Medical Officer in Charge of the Electrical and Massage Department. The successful applicant will be required to attend the hospital on three half-days a week at an honorarium of 50 guineas p.a.

Application, should be received by the undersigned, who will be pleased to give further particulars.

J. G. GILBERT,
Secretary-Superintendent

ST JOHN'S HOSPITAL, LEWISHAM, S.E.13.

Applications are invited for the post of MEDICAL REGISTRAR (male) to attend the Out-Patient Department on two half-days a week, namely Monday afternoons and Thursday mornings.

Honorarium of 50 guineas will be paid.

Applications, with copies of testimonials, should be received by the undersigned, who will be pleased to give further information.

J. C. GILBERT,
Secretary-Superintendent

APPOINTMENTS—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C. 1 (in the case of Scottish appointments, with the Scottish Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE	CONTRACT PRACTICE—*(contd.)*	CONTRACT PRACTICE—*(contd.)*
ABERTYSSWG MEDICAL AID SOCIETY *(Medical Officer.)*	LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL. *(Medical Officer.)*	MID-RHONDDA MEDICAL AID SOCIETY. *(Assistant Medical Officer.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C. 1.

Town or District	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES *(All Friendly Society Appointments.)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney, N.S.W.	**VICTORIA** *(All Institute or Medical Dispensaries.)*	The Honorary Secretary, Victorian Branch, British Medical Association, Medical Society Hall, Albert St., East Melbourne, Victoria.	**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association "Shell House," 205, St. George's Terrace, Perth, Western Australia.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec. Queensland Branch, British Medical Association, B.M.A. House, 225, Wickham Terrace Brisbane, B.17.				

September 15, 1937 By Order of the Council. G. C. ANDERSON, *Secretary.*

THE CHILDREN'S HOSPITAL, KING EDWARD VII MEMORIAL, BIRMINGHAM, 16

RESIDENT MEDICAL OFFICER. ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited for the above posts. Candidates for the post of Resident Medical Officer must be qualified and registered, and have held a responsible Resident appointment at a teaching Hospital. The salary is at the rate of £175 per annum, with board, residence and laundry. The appointment is tenable for one year, as from December 1st, 1937, and the Officer is eligible for re-election for a second year.

Candidates for the post of Assistant Resident Medical Officer must be registered and qualified, and have had previous experience in the diseases of children. The duties may include assistance in the Pathological Department. The salary is at the rate of £125 per annum, with board, residence and laundry, and the appointment is tenable for one year as from November 1st, 1937.

Candidates should forward their applications, with Certificate of Registration, and any credentials which they may desire to offer, to the undersigned on or before October 2nd, 1937.

HAROLD F. SHRIMPTON,
September 1937. House Governor.

THE DEWSBURY AND DISTRICT GENERAL INFIRMARY, DEWSBURY.

The Post is a recognised one by the Royal College of Surgeons (England).

Applications are invited for the post of SENIOR HOUSE SURGEON (male). Salary £200 per annum, with board, residence and laundry.

The Infirmary is a new Voluntary Hospital of 100 Beds, and has the usual Special Departments, with Visiting Consulting Specialists in attendance.

Applications, stating age and hospital experience, together with copies of recent testimonials, to be sent as immediately as possible to my office.

FRED SMITH,
Secretary-Superintendent.

ROYAL BUCKINGHAMSHIRE HOSPITAL, AYLESBURY.
(In course of extension to 120 Beds.)

Applications are invited for the following posts:
(1) SENIOR RESIDENT MEDICAL OFFICER. Salary £200 per annum.
(2) JUNIOR RESIDENT MEDICAL OFFICER Salary £150 per annum

Board, Residence and Laundry provided.

Candidates must be fully qualified and registered. Previous experience in Hospital appointment desirable, as well as in administration of Anaesthetics.

Senior appointment vacant October 1st, and Junior appointment vacant about October 30th, each for six months and renewable.

Junior eligible to fill Senior post when vacant.

Applications, stating age, qualifications and experience, with copies of not more than three testimonials, should be sent to the undersigned by September 20th.

F. G. DAWES,
Secretary.

THE GUEST HOSPITAL, DUDLEY.

(General Hospital—107 Beds—shortly to be increased to 160 Beds.)

The Resident Staff consists of a Resident Surgical Officer and two House Surgeons.

TWO HOUSE SURGEONS (male) required. One to enter upon his duties on October 1st, and the other to commence on November 2nd. Salary at the rate of £100-£130, according to experience, with furnished apartments, board and laundry. Candidates must be fully qualified and registered. Duties include Medical, Surgical, Ear, Nose and Throat Ophthalmic, Orthopaedic, Gynaecological work, etc.

Applications, stating age, qualifications and experience, accompanied by copies of testimonials, to be sent to the undersigned.

H. RAYMOND HURST,
House Governor and Secretary.
September 3rd, 1937.

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(127 Beds.)

RESIDENT SURGICAL OFFICER (MALE).

Applications are invited for the above post from those holding the Fellowship of one of the Royal Colleges of Surgeons.

The appointment is for a term of one year, with provision for an extension of a further twelve months, and the successful candidate will be expected to commence duties immediately.

Salary will be paid during the first twelve months at the rate of £300 per annum and will be increased to £350 per annum during the second twelve months in the event of an extension of the appointment being agreed upon. In addition to this salary the post includes the provision of board, residence and laundry.

Applications, stating age, qualifications, and nationality, together with copies of three recent testimonials, are to be addressed to the undersigned, and should be forwarded as soon as possible, endorsed "R.S.O."

H. WILKINSON,
Superintendent.

BURSLEM-HAYWOOD & TUNSTALL WAR MEMORIAL HOSPITAL, TUNSTALL, STOKE-ON-TRENT.
(66 Beds. Two Residents.)

Applications are invited for the post of SENIOR RESIDENT HOUSE SURGEON. Salary £175 per annum, with residence and laundry.

Surgical experience necessary; good opportunity for Surgical and Orthopaedic work. The appointment is for six months in the first instance, reappointment may be applied for.

Applications, stating age and experience, with copies of three testimonials, to be sent to the undersigned immediately.

C. E. LOWNDES,
Secretary.

(Advertisements continued on p. 52)

BRITISH MEDICAL JOURNAL

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B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1

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WANTED IMMEDIATELY, INDOOR ASSISTANT (male) for Practice near Cardiff. Salary £300 p.a. and £50 car allowance. Must be reliable. Protestant preferred.—Address, No. 537, B.M.A. House, Tavistock Square, W.C.1.

WANTED OCTOBER 1ST, MALE INDOOR ASSISTANT, £300, all found. One-third share in 6-12 months if suitable: 5 miles from B'ham. Large panel. Good scope and opportunity for keen man in comfortable bachelor's house. Work moderate. Early rise in salary if partnership not desired. Urgent.—Address, No. 528, B.M.A. House, Tavistock Square, W.C.1.

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WANTED, EARLY OCTOBER, ASSISTANTSHIP, indoor or outdoor. Hospital and G.P. experience. Own car.—Address, No. 325, B.M.A. House, Tavistock Square, W.C.1.

WANTED, INDOOR MALE ASSISTANT, October 12th. Hospital experience preferred; panel and private; good prospects for suitable man. British, Protestant, N.W. District. —Address, No. 542, B.M.A. House, Tavistock Square, W.C.1.

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WANTED, MALE ASSISTANT, October 1st. Industrial Practice 10 miles Birmingham. Furnished apartments over Surgery. Some experience panel. Salary £325, all found. Definite view suitable man. Full particulars; photo.—Address, No. 530, B.M.A. House, Tavistock Square, W.C.1.

WANTED, TO START SOON, MALE ASSISTANT, English or Scottish, for large practice in South Yorks. town. Indoor. Salary, £300-£350 p.a. Car, dispenser, hospital. Experience not essential.—Address, No. 434, B.M.A. House, Tavistock Square, W.C.1.

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WANTED, ASSISTANT, WITH VIEW partnership, end September. Border Country town. Salary £500 or according qualifications. Surgical experience preferred.—Address, No. 509, B.M.A. House, Tavistock Square, W.C.1.

WANTED, INDOOR ASSISTANT, northern town. Young, single man required. British. Some experience of General Practice desired. Partnership in view.—Address, No. 507, B.M.A. House, Tavistock Square, W.C.1.

WANTED, MALE ASSISTANT (INDOOR) FOR mixed panel and private practice in East Lancs. Suit recently qualified. Salary £300 p.a., all found. Car provided. Protestant graduate preferred.—Address, No. 324, B.M.A. House, Tavistock Square, W.C.1.

WANTED, MARRIED ASSISTANT FOR South Lancashire Practice. Salary £400, plus furnished house, car, and allowance for maid. Must be keen, energetic and reliable. Usual bond. —Apply, stating age, experience, nationality, and religion to Address, No. 320, B.M.A. House, Tavistock Square, W.C.1.

WANTED, NEAR CARDIFF, PERMANENT outdoor male ASSISTANT in October. Salary £312 p.a., all found. Car allowance.— Address, No. 527 B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANT, MALE, *single, not over 30*, Protestant, for industrial and private Practice, Yorkshire. Some previous experience. Salary £300 and all found. Car allowance.—Address, No. 532, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR ASSISTANTSHIP, with or without view. Married, age 32; keen and reliable; 5 years' experience Hospital and G.P. Own car and equipment. House essential. Would take charge of Branch.—Address, No. 526, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR MALE ASSISTANT, keen, married or single, London, Western suburb. Salary £450 to commence, with good regular increase. Car required. Modern house available.—Address, No. 538, B.M.A. House, Tavistock Square, W.C.1.

WANTED, SINGLE, MALE, ASSISTANT FOR Glamorgan colliery Practice. Salary £350 p.a., indoor, or £400 p.a. outdoor, with rooms and attendance.—Address, No. 438, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT (FEMALE) WANTED END OF September for general practice in seaside resort on East Coast. *Salary £312 p.a. indoor.* Hospital. Must be ex-H.S. or H.P., good Anaesthetist with some Midwifery experience. English or Scottish.—Address, No. 540, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT, MAN OR WOMAN, REQUIRED in pleasant London suburb. Residential neighbourhood; comfortable flat and car available.—Address, No. 515, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT REQUIRED EARLY OCTOBER, Scottish or English, male, unmarried, experience essential. £300 to commence, all found. £50 car allowance and garage. Own rooms at branch, London, Kent border.—Address, No. 511, B.M.A. House, Tavistock Square, W.C.1.

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DOCTORS REQUIRING QUALIFIED Dispensers, Nurse-Dispensers, Secretary-Dispensers or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSER'S BUREAU, 3, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

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A superannuation scheme on a contributory basis will be arranged. According to the Articles of Association the appointment is an annual one, and is confirmed each year at the Annual General Meeting of the Society.

Applicants should give full details of their qualifications and experience, including Secretarial work. The names of three references should be given.

Further information can be obtained from the Secretary, to whom applications should be sent by October 2nd, 1937. No canvassing is allowed.

Victory House,
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WANTED, YOUNG PARTNER IN MIXED Practice in South Coast resort. Share worth £600 p.a. to commence, with increase later. Panel 1,150. Premium 2 years' purchase. Capital essential. House to rent.—Address, No. 533, B.M.A. House, Tavistock Square, W.C.1.

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KENT COAST RESORT.—JUNIOR PARTNER wanted in large mixed-class Practice averaging £4,500 per annum. Panel 1,400. One-fifth share to begin with at 2 years' purchase. Preliminary assistantship. Ex-H.S., H.P. Well-educated Scotsman with G.P. experience preferred.—No. 502, B.M.A. House, Tavistock Sq., W.C.1.

M.B., B.CHIR. (CAMBRIDGE), AET. 26, ex-H.P. and with G.P. experience, desires PARTNERSHIP, town or country. Good house, with some garden essential.—Address, No. 323, B.M.A. House, Tavistock Square, W.C.1.

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WANTED, IN 2-3 YEARS' TIME, MIXED General PRACTICE in Scotland, preferably town in Ayrshire, with scope for increase, agents, etc., please note.—Address, No. 501, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—MIXED GENERAL PRACTICE in London or Suburbs. Large panel essential. Immediate cash available. Strictly confidential.—Address, No. 250, B.M.A. House, Tavistock Square, W.C.1.

WANTED, PRACTICE URGENTLY required in S.W. country district. About £750 p.a. Nice house, preferably to rent. Genuine Buyer.—THE WESTERN MEDICAL AGENCY, 22, Clare Street, Bristol, 1 (Bristol 22689).

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M.B., B.CH. (35), WIDELY EXPERIENCED, seeks PRACTICE, willing meanwhile act Locum or Assistant. Excellent references.—Address, No. 535, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL WOMAN DESIRES TO PURCHASE sound PRACTICE.—Write, giving full particulars, to Address, No. 301, B.M.A. House, Tavistock Square, W.C.1.

N. DEVON. COUNTRY PRACTICE IN delightful part. Average £1,450 p.a., increasing. Panel 800. 2 years' purchase. Hunting, fishing, etc. Good house.—THE WESTERN MEDICAL AGENCY, 22, Clare Street, Bristol, 1 (Bristol 22689); and 25, South Molton Street, W.1 (Mayfair 6941).

OLD-ESTABLISHED MIXED PRACTICE. Panel 1,300, in small town, agricultural district. Good cottage hospital. One-third share for disposal, with view to succession. Preliminary assistantship considered.—Address, No. 525, B.M.A. House, Tavistock Square, W.C.1.

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Applications, together with copies of three testimonials, should reach the undersigned on or before Tuesday September 28th.

F. DUDLEY HOBBS, B.A.,
Secretary.

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W. H. BAINES,
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21 KENT AND SUSSEX BORDER.—Old-established and steadily increasing PRACTICE in beautiful country district. Cash receipts, 1936, £628. Panel over 500. House (4 bedrooms, etc.), garage and good garden, main drainage, etc., to rent. Scope. Premium two years' purchase.

22 ISLE OF WIGHT.—PARTNERSHIP in well-established middle-class Practice of nearly £2,650 p.a. Panel 1,200. Visits 3/6 to £1 1s., medicine extra. House with 4 bedrooms, etc., garage and garden. Good society and sport of all kinds. Premium one-half share two years' purchase.

23 N.E. COAST.—PARTNERSHIP (after preliminary Assistantship) in mixed Practice, about £3,300 p.a., in seaport town. Panel 2,600. A suitable house could be obtained. One-third share at first to suitable man at two years' purchase (or near offer), with option to increase to two-fifths in three years and to four-ninths later.

24 LONDON, W.1.—DEATH VACANCY.—SPECIAL PRACTICE in SKIN DISEASES. Cash receipts year ended 31st March, 1937, £1,815. Consultations two and three guineas. Accommodation for professional and residential purposes, if required, to rent

British Medical Bureau

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(FOUNDED 1880.)

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Practices and Partnerships for Disposal (continued).

25 S.E. COAST.—PARTNERSHIP in old-established Practice, averaging £4,100 p.a. in growing resort. Panel 3,000. Modern corner house (3 bedrooms, etc.) for sale or to rent. Premium for one-fourth share, two years' purchase.

26 ISLE OF WIGHT.—Well-established PRACTICE about £1,200 in seaside resort. Panel over 725. Good corner house (5 bedrooms) with central heating, garage and small garden for sale or rent. Good scope. Premium £2,250.

27 SUFFOLK.—Old-established country PRACTICE about £1,100 p.a. Panel 832, returning for 1936, £582. Good house (3 bedrooms), garden and garage. Rent £40 p.a. Premium one and three-quarter years' purchase or near offer.

28 LONDON, E.—Old-established PRACTICE of £1,793 p.a. in populous district. Panel 2,500. House (6 bedrooms, etc.), to rent. Premium two years' purchase.

29 S. OF ENGLAND.—PHYSIO-THERAPY PRACTICE of £1,000 p.a. in an important town. Fees, 10/6 to £1 1s. Premium £1,250 (including certain equipment).

30 N. WALES WATERING PLACE.—PARTNERSHIP in old-established Practice of £6,000 p.a. Panel 2,600. Nice flat with garage. Welsh must be spoken. Premium for one-fifth share one and a-half years' purchase.

31 E. ANGLIA.—PARTNERSHIP in an old-established Practice of £2,800/£2,900 p.a. in prosperous country district. Panel 1,530. Double-fronted house (6 bedrooms), garage and garden. Freehold for sale or to rent. Premium for one-third share one and three-quarter years' purchase.

32 LONDON, E.—Middle-class PRACTICE of over £2,400 p.a., in outlying district. Panel 2,870. House in good repair. Garage and garden. Freehold for sale. Premium two and one-quarter years.

33 W. OF ENGLAND.—PARTNERSHIP in old-established Practice of £6,600 p.a. in a beautiful country district. Panel 4,500 and appointments worth £1,325 p.a. Centrally situated house (5 bedrooms), for sale. Premium for one-fifth share, £2,750.

34 MIDDLESEX.—PARTNERSHIP (with preliminary Assistantship) in a steadily increasing Practice in a very good residential district on the Thames. Cash receipts, 1935, £4,844; 1936, £5,465; 1937, £6,264. Panel 2,700 and appointments £727 p.a. Premium for one-fifth share two and a half years' purchase

35 LONDON, S.E.—PRACTICE of about £500 p.a. Panel 533. House with surgery accommodation to rent, or rooms next door. Premium one year's purchase, or offer.

36 W. OF ENGLAND.—Country PRACTICE doing about £1,400 p.a., in picturesquely situated village. Panel over 600. Good stone-built slate roof house (4 bedrooms, dressing-room, etc.), garage and charming garden, about ¾ acre, for sale. Hunting, fishing, shooting. Premium £2,800.

37 LONDON, W.2.—Old-established PRACTICE in residential district. Receipts last year, £1,440. Panel 1,000, about. Good house to rent at £130 p.a. Premium two years' purchase.

38 MID-DEVON.—Increasing Country PRACTICE about £800 a year, in delightful part. Appointments and panel return over £350 p.a. Excellent house (6 bedrooms, dressing-room, etc.), in 1¼ acres of grounds. Separate surgery accommodation. Electric light and main water. Garage and stabling. Freehold for sale. Scope. Premium £1,200.

39 LONDON, E.15.—Old-established PRACTICE averaging £1,670 p.a., in populous suburban district. Panel 1,990. Small house in excellent repair. Rent £50 p.a. Good scope. Premium two and a quarter years' purchase.

40 S. MIDLANDS.—PARTNERSHIP (short preliminary Assistantship) in Practice, over £5,000 p.a., in first-rate town. Panel nearly 5,000. House with 4 bedrooms, garage and garden, to rent. One-fifth share at first at two years' purchase.

41 LONDON, S.E.—Old-established and increasing PRACTICE of £2,500 p.a. in suburban district. Panel 2,000. Detached double-fronted house (5 bedrooms, etc.), garage and garden. Freehold for sale. Premium two years' purchase.

42 S. MIDLANDS.—Old-established PRACTICE of over £1,000 p.a. in beautiful country district on Bucks and Northants borders. Panel 536. Attractive house (6 bedrooms, etc.), Freehold for sale, or rent. Premium two years' purchase.

43 S. OF ENGLAND.—PRACTICE of about £300 p.a. carried on by a medical woman in a cathedral town. Panel 100. House (2 bedrooms, etc.), to rent. Premium £500.

44 AUSTRALIA.—Old-established PRACTICE of £1,400 p.a., in agricultural township. Good house (3 bedrooms, etc.), for sale. Prem. £1,600 and £250 for X-ray plant.

45 MIDLANDS.—Old-established PRACTICE in beautiful country district. Cash Receipts last year £1,280, including appointments worth about £60, and a panel between 650 and 700. Visits 2/6 to £1 1s. without medicine. Nicely situated house (4 bedrooms, dressing-room, etc.), with nice garden and two garages. Rent about £90 p.a. Premium two years' purchase.

46 N. WALES BORDER.—PARTNERSHIP (with early succession) in old-established County Practice, about £2,500 p.a., in important town. No panel. Surgery premises could be purchased or rented. The private residence is available if required. A share up to one-half would be sold at first with early succession. Premium two years' purchase.

47 LONDON, S.W.1.—SPECIAL PRACTICE for catarrhal conditions, nasal catarrh, hay fever, asthma, etc., etc., about £1,000 p.a., in commanding position in Grosvenor Place. Consultations 1-3 guineas. Special terms for series of treatments. Excellent accommodation to rent at £100 p.a., on lease. Scope. Premium one and a-half years' purchase

48 SEASIDE TOWN WITHIN AN HOUR OF LONDON.—Very old-established PRACTICE. Receipts average £625 p.a. Panel about 300. Nice detached house (5 bedrooms), with garage and garden, for sale or rent. Good scope. Premium £1,000.

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A. SOUTH-WEST ENGLAND.—Old-established and increasing PRACTICE in large town. Cash receipts average £1,813. Panel 1,413. Good house (7 bedrooms), garage and garden for sale, price £1,400. Premium for Practice, £3,626.

B. EDINBURGH.—Receipts £800. Panel 1,000. Suitable house for sale. Premium—Practice and house, £2,300.

C. LONDON, N.—CONSULTING ROOMS with SMALL NUCLEUS in large residence along with, if required, part of the house. Excellent opportunity for Doctor to build up practice. Moderate rent.

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(*FOUNDED* 1880)

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YORKSHIRE (W.R.).—PARTNERSHIP SHARE worth £1,700 p.a. with Panel of 1,169 and appointments £80 p.a. in practically unopposed Country PRACTICE. *Nice detached house, 2 reception, 4 bedrooms, garage, ¾-acre* garden and tennis lawn. Electricity, etc. Premium—2 years' purchase. Reason for sale—ill-health of Vendor.—No. 985.

DERBYSHIRE.—Old-established mixed-class PRACTICE, near beautiful country and within easy reach of large town. Average cash receipts £1,100 p.a. Panel 970 and transferable appointments £200 p.a. Scope. Nice detached house, 2 reception, 6/7 bedrooms, garage and large garden. Freehold. Premium—1¼ years' purchase.—No. 991.

LANCS TOWN.—Very old-established mixed Panel and Private PRACTICE; *in present hands 35 years. Cash receipts last year £916. Panel 1,223.* Scope. Excellent detached house, 2 reception, 5 bedrooms, garage and small garden. For sale, or would rent on lease. Premium—1¼ years' purchase. Vendor retiring.—No. 1,004.

LINCOLNSHIRE.—PARTNERSHIP in good mixed-class Practice in pleasant town. Average cash receipts £2,450 p.a. *Panel 1,200.* Appointments £190 p.a. Scope. Nice house in good condition, 2 reception, 5 bedrooms, garden. Rent £68 p.a. Premium—half share—2 years' purchase.—No. 1013.

LANCS TOWN.—Old-established Panel and Private PRACTICE in large town. Average cash receipts £1,360 p.a. Panel 900. Scope. Good house, 2 reception, 4 bedrooms, garage. Rent £60 p.a. Expenses low. Premium 1½ years' purchase.—No. 987.

MANCHESTER.—Old-established Private and Panel PRACTICE. Cash receipts last year £1,222. Panel 800. Scope. Good house, 2 reception, 5 bedrooms, 2 Professional rooms. Premium—Practice—1¼ years' purchase.—No. 1009.

NORTH-WEST COAST. — Old-established middle-class PRACTICE in Seaside town. Cash receipts £1,100. Panel 350. Nice house, garage and garden. *Premium*—1¼ years' purchase.—No. 961.

LIVERPOOL.—Well-established PRACTICE in pleasant district. Receipts £800 p.a. Panel 650. Good house, 5 bedrooms, garden and garage. Premium—1 year's purchase.—No. 928.

WELSH BORDER.—PARTNERSHIP in old-established PRACTICE in Country district. Panel 2,432. Good house, garage and large garden. Premium—share worth £800 p.a., best offer.—No. 956.

NORTH WALES.—Old-established PRACTICE near Sea and Country, capable of great increase. Cash receipts last year, £1,026. Panel 800. Nice surgery premises. Premium, best offer.—No. 905.

NEAR MANCHESTER.—Sound middle and working class PRACTICE. Average cash receipts £2,692 p.a. Panel over 2,500. Scope. Detached corner house, 2 reception, 4 bedrooms, 3 Professional rooms, garage and garden. Premium—1¼ years' purchase.—No. 952.

SOUTH YORKSHIRE.—Old-established Private PRACTICE in present hands 35 years. Cash receipts last year £1,240. No Panel, Clubs or appointments. *Detached modern house, garage and garden. Premium, best offer.*—No. 1017.

YORKS (N.R.).—Old-established unopposed Country PRACTICE in beautiful district near to large town. Cash receipts approximately £1,200 p.a. (including £455 p.a. from Panel). Good house, 2 reception, 5 bedrooms, large garden, garage, water, gas and electricity. Rent £70 p.a., on lease. Premium—2 years' purchase of near offer, to include drugs and fittings.—No. 973.

DERBYSHIRE.—Old-established PRACTICE in pleasant district near large town offering great scope for increase owing to building developments. Suitable for two men in partnership. Cash receipts last year £3,436. Panel 3,394. Two good houses, with ample accommodation and modern conveniences, each with garage, garden and tennis court. *Premium*—2 years' purchase.—No. 955.

NEAR MANCHESTER.—Very old-established mixed-class PRACTICE capable of much increase owing to building developments. Cash receipts last year £1,006. Panel 470. Nice detached house, 2 reception, 5 bedrooms, garage and large garden. Separate entrance to surgery. Price £650. Premium—Practice—1 year's purchase. Vendor retiring.—No. 875.

NORTH WALES.—PARTNERSHIP (after short Assistantship) in old-established *middle-class Practice in pleasant Coast town. Knowledge of Welsh* desirable. Cash receipts last year £6,717. Panel 2,600. Well-equipped Hospital. Incoming partner would be required to live in flat. Premium—1/5th share—1¼ years' purchase.—No. 988.

CHESHIRE/DERBYSHIRE BORDER.—Old-established PRACTICE in Country district. Cash receipts last year £700 (increasing). *Panel 862. Great* scope. Excellent house, 2 reception, 4 bedrooms, 3 Professional rooms (separate entrance), garage and good garden. Premium—£1,000.—No. 989.

MANCHESTER.—PARTNERSHIP in sound old-established mixed Panel and Private Practice. Average cash receipts £5,500 p.a. Panel over 4,000 and appointments £760 p.a. Good houses available to rent. Premium—2/9th share—2 years' purchase (to include share of book debts, drugs, etc.).—No. 1001.

CUMBERLAND.—Old-established and practically unopposed Seaside and *Country PRACTICE in delightful district. Cash receipts last year £868.* Panel 225 and transferable appointments £255 p.a. Excellent house, 3 reception, 8 bedrooms, electric light and gas, garage and garden. For sale, freehold. *Premium—Practice*—1½ years' purchase.—No. 998.

NEAR NEWCASTLE-ON-TYNE. — Colliery PRACTICE. *Cash receipts last* year £952. Panel 800. Scope. Good house to rent. Premium—1¼ years' purchase.—No. 978.

CHESHIRE TOWN.—PARTNERSHIP (after preliminary Assistantship) in mixed-class Practice. Cash receipts last year £3,293. Panel 3,000. Scope, especially for a surgeon. Good house available. Premium—ONE-THIRD SHARE—2 years' purchase.—No. 992.

MANCHESTER.—Very old-established mixed Panel and Private PRACTICE. Cash receipts last year £2,100. Panel 2,800. Scope. Good house, 2 reception, 4 bedrooms, 3 Professional rooms, garage. Rent £75 p.a. Premium—2 years' purchase, or near offer.—No. 990.

NOTTINGHAM.—PARTNERSHIP in old-established Practice. Cash receipts £2,500 p.a. Panel 3,000. Nice house. Premium—half-share —£2,400.—*No. 975.*

DEATH VACANCY. — SHEFFIELD. — Very old-established mixed-class PRACTICE in late *incumbent's hands 20 years. Cash receipts* last year £1,664. Panel 1,200. Scope. Good house, 2 reception, 6 bedrooms, 3 Professional rooms, garage. To rent. Premium, best offer.—No. 999.

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NORTH WALES COAST.—Middle-class PRACTICE. Receipts £1,417 p.a. Panel 415. Excellent house with ample accommodation, garage and garden. Premium—£2,100.—No. 929.

SUFFOLK.—Old-established Country PRACTICE, practically unopposed. Cash receipts last year £1,081. Panel 835 (yields £582 p.a.). Scope. Good house, 2 reception, 3 bedrooms, garage and nice garden. Rent £40 p.a. Premium —best offer.—No. 993.

LANCS TOWN.—Old-established mixed-class PRACTICE. Cash receipts last year £1,136. *Panel 975. Good house and surgery premises to rent.* Premium—£1,500. Vendor retiring.—No. 1,007.

NORTH-WEST COAST.—Well-established PRACTICE in Seaside town. Cash receipts £500-£550 p.a. Panel 450. Modern flat to rent at £80 p.a. inclusive of rates. Premium—1¼ years' purchase.—No. 1,005.

LANCS TOWN.—Mixed-class PRACTICE. Cash receipts £1,010. Panel 1,050. Good house. Premium—1¼ years' purchase.—No. 951.

LEEDS.—Small PRACTICE in present hands 54 years. Cash receipts over £500 p.a. Panel 400. Scope for energetic man. Suitable house for sale or rent. Premium—1 year's purchase.—*No. 1014.*

LANCS TOWN.—*Old-established* mixed-class PRACTICE in large town about 6 miles from Manchester. *Cash receipts* £1,800 p.a. Panel 1,500. Scope. Good house, 3 reception, *6 bedrooms*, 3 Professional rooms, garage. Rent £72 p.a. Premium—1¼ years' purchase.—No. 996.

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The maximum commission payable on the sale of any Practice or Partnership in Great Britain placed exclusively in the hands of this Agency is £50 (fifty pounds), which sum covers goodwill, drugs, surgery fittings, fixtures and furniture, instruments and book debts, but not house property. Schedule of Terms will be forwarded on application.

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1. KENT COAST.—FAVOURITE SEASIDE RESORT.—PRACTICE established 40 years and now for disposal as vendor is going abroad. Gross cash receipts average £1,921 p.a., including about £550 from Panel and £235 from Clubs. Good hospital. Vendor on staff. Scope for increase and for some surgery. Good freehold house available with ample accommodation. Freehold £1,200. Premium 2 years' purchase.
2. DORSET COAST.—A VERY FAVOURED LOCALITY.—PRACTICE, old-established held by vendor for 10 years and only for disposal as he wishes to devote whole time to pathology. Gross cash receipts for past year about £1,127. Selected panel of 250 patients. Fees 3/6 upwards, including medicine. Visits from 5/-. Few midwifery cases at from 3 guineas. Good house in ¾-acre for disposal, freehold. Accommodation consists of consulting room, 2 reception, 5 bedrooms and 2 attics. Good garden and garage. Premium 2 years' purchase.
3. KENT.—LARGE TOWN.—PRACTICE (with scope for increase) established by vendor 12 years ago now for disposal owing to ill-health. Gross cash receipts are stated to be about £700 p.a., including a Panel of about 800 patients. Fees, advice and medicine 2/6. Visits from 3/6 to 5/-. Midwifery from 3 guineas. House situated in a pleasant and secluded garden, contains 2 large public rooms with commodious hall and staircase, 4 large bedrooms, [illegible] Premium
4. [illegible] ACTICE [illegible] patients. Visits 5/- [illegible] large and 3 smaller bedrooms with separate servant's quarters. Excellent consulting rooms, garage for 2 cars.
5. HAMPSHIRE NUCLEUS—stated to be producing now at the rate of £5 per week and to offer considerable scope for an energetic worker.
6. COAST TOWN.—Old-established, held by Vendor past 3½ years and now for disposal as he wishes to specialise. Gross earnings for year ending 31/3/37, approximately £2,183. Panel of about 770 patients producing about £425 p.a., and appointments producing about £100 p.a. Fees 3/6 and 5/-. Visits from 5/-. Good house available, freehold £1,100. Accommodation consists of consulting room, 7 bedrooms, 2 reception rooms, etc. [illegible] ear offer.
7. [illegible] is practically unopposed and country, was [illegible] 40 years ago and now for disposal owing to [illegible] three years have been about £540 p.a., and there is stated to be good scope for increase as practice has been neglected. Panel of about 600 patients. Suitable house available on rental at £30 p.a., with 2 reception and 4 bedrooms, garden and garage. Premium 1½ years' purchase.
8. CROYDON AREA.—Rapidly increasing PRACTICE, established 5 years ago, for disposal as vendor [illegible] to be: 1935, £1,127; 1936 [illegible] patients. Fees 1/6 to 3/- [illegible] available. Fees practically [illegible] 2 years' purchase.
9. EAST LONDON.—Old-established PRACTICE producing about £1,800 p.a. Panel of nearly 2,600 patients. Fees 2/- to 3/-. Visits from 3/-. Midwifery, 3 to 5 guineas, about 20/30 cases yearly. Very good house on rental at £120 p.a. Accommodation consists of surgery, waiting room, 2 reception and 4 bedrooms, 2 maids' rooms and bathroom. Garage. Premium £3,600.
10. LONDON.—Outlying Northern Suburb.—PARTNERSHIP—A one-third share is available in a rapidly expanding Practice. Receipts for past three years are approximately £1,924-£2,900 and £3,550. Panel of 2,354 patients. Fees 2/6 and 3/6—visits 3/6 upwards. Midwifery about 40/50 cases per annum, minimum 4½ guineas. Considerable scope for further increase. Ingoing partner must be well experienced and have held Hospital appointments, be interested in medicine and children, and, in addition, be a good anaesthetist. Short preliminary assistantship.
11. LANCS.—High-class Seaside and Residential Town.—Easily worked old-established PRACTICE for sale. Gross cash receipts about £1,100 p.a., including a panel of about 325 patients. Fees 3/6 to 10/6. Visits 5/- to 21/-. Midwifery about 12 cases p.a. Minimum 5 guineas rising to 15 guineas. Mostly non-dispensing. Low expenses. Suitable house available with consulting and waiting rooms, 2 reception, 3 bedrooms and a maid's room and box room. Large garden and garage. Leasehold for sale or would be rented. Premium 1½ years' purchase. There is stated to be good scope for increase for an energetic man.
12. SUSSEX.—ATTRACTIVE COUNTRY DISTRICT NEAR SEA.—PARTNERSHIP.—A one-fourth share is offered (after a preliminary assistantship) in an old-established and expanding Practice. Gross cash receipts for 1936 were about £3,300 and for the past 8½ months approximately £2,700. Panel of 1,300 patients. Appointments worth over £300 p.a. Maisonette available or Senior partner might build new house. Premium 2 years' purchase.
13. OPHTHALMIC PRACTICE for sale in a capital Australian City.—Gross cash receipts approximately [illegible] consulting rooms can be rented at £180 p.a.
14. PHYSIO-THERAPEUTIC [illegible] X-ray work in large town. ONE HALF [illegible] ver £2,000 p.a.
15. WEST END PRACTICE.—Death Vacancy.—Skins—Genito-Urinary—V.D., Electro-Therapy, etc. Gross cash receipts for past 12 months about £1,515. Fees 2 and 3 guineas. Suitable accommodation available. Premium by arrangement.
16. NORTH-WEST COAST.—Well-established PRACTICE, with seaside town and country work, producing £1,299, including panel and appointments worth about £400 p.a. Suitable house with 3 bedrooms, etc., garden, garage. Rent £50 p.a. Sport of all kinds. Premium only £1,250 for quick sale.
17. NORTH-EAST COAST.—Well-established non-panel PRACTICE, averaging about £900 p.a., but capable of extension as considerable building is in progress. Very good house, with 6 bedrooms, etc. Price £1,500. Premium 1½ years' purchase.
18. SOUTH COAST.—PARTNERSHIP.—A ONE-HALF SHARE in good middle and upper-class practice producing about £2,550 p.a. Panel of 1,300. Fees 3/6 to 21/-. Suitable house can be rented at £65 p.a. Easily worked, and scope for increase. Premium 2 years' purchase.
19. DEVON COUNTRY.—Old-established PRACTICE producing about £800 p.a. including about £310 from panel of 428 patients. Freehold house for disposal containing 2 reception rooms, lounge hall, 6 bedrooms, waiting room, consulting room, etc., 1½ acres of garden, garage for 2 cars and stabling. Freehold £2,600. Premium £1,200.
20. LANCS.—Suburb of large town. PRACTICE producing about £800 p.a. with panel of 467 patients. Suitable house on rental at £90 p.a. inclusive. Stated to be scope for increase. Premium £1,100.
21. LONDON, S.E. 11.—Old-established working class PRACTICE producing approximately £500 p.a. Panel of about 500 patients. Can be worked as lock-up. Premium 1 year's purchase or any reasonable offer accepted.
22. YORKS.—LARGE TOWN.—Well-established better working-class PRACTICE. Receipts for last 12 months about £1,176 with Panel of 1,150 patients approximately. Fees, minimum 2/6 with visits from 3/6 to 7/6. Freehold house for disposal at £900 containing 3 bedrooms, 2 living rooms, surgery, waiting room, etc. Vendor wishes to specialise.
23. EASTERN COUNTY AND MARKET TOWN.—HALF-SHARE PARTNERSHIP in Practice established some 100 years owing to retiral of junior partner. Average cash receipts over £2,400 p.a., of which over £700 comes from Panel and P.A.C. Suitable house available on rental. Ingoing partner should not be more than 30, preferably have a degree and some hospital experience.
24. ASSISTANTSHIP—with a view to a PARTNERSHIP SHARE to produce about £1,100 p.a., in a well-established Practice. Ingoing man must be young, have had considerable hospital experience, and preferably held an Ophthalmic H.S. He should be married or engaged, and a Protestant. Will applicants please give full details of experience, etc.
25. DEVON, SOUTH COAST.—A well-established good-class entirely private PRACTICE producing for the past 12 months about £1,000. Panel could be had if desired. Fees 2/6, 3/6, 5/- and 7/6, with a few visits up to 21/-. Non-dispensing. Suitable house containing consulting room, 2 reception rooms, 6 bedrooms, for sale. Freehold £1,400. Partnership introduction. Would be suitable for ex-I.M.S. or similar.
26. DEVELOPING NORTHERN SUBURB.—A 3/8TH SHARE is offered in a well-established and growing Practice. Receipts for 12 months to 1/4/37 amounted to about £5,200, including about £80 from appointments and a [illegible]
27. [illegible] ished for [illegible] to about [illegible] and 3/6. [illegible] Suitable house with good accommodation and separate surgery available on lease at £60 p.a. Premium £1,100, plus good debts, drugs and surgery equipment at valuation. Vendor giving up owing to ill-health.
28. LONDON, E.2.—Lock-up PRACTICE established 80 years for disposal. Income about £800-£900 p.a., with Panel of about 1,150 patients. Fees 2/6 and 3/6. Visits from 3/6. Suitable accommodation available consisting [illegible] ing room, the remainder being sub-let for [illegible] Premium 2 years' purchase to include [illegible] etc.
29. [illegible] hours 10-1 and 5.30-6.30, producing about £1,000 p.a., including £200 from Panel and appointments. Suitable accommodation available.
30. BAYSWATER.—PRACTICE, established some 65 years for disposal. Gross receipts about £1,440 p.a., with 1,000 Panel patients. Suitable house on lease at £130 p.a. Premium 2 years' purchase.
31. SURGICAL OPENING.—WITHIN 50 MILES OF LONDON.—A £1,000 share is offered to a FIFTH PARTNER in an old-established Practice. The patients comprise all classes and there is little visiting done under 10/6. Ingoing partner would do all surgery, but must be prepared to do ordinary G.P. as well. Choice of houses. Applicants must be 28-40, preferably hold a degree and must have their English Fellowship. Premium 2 years' purchase.
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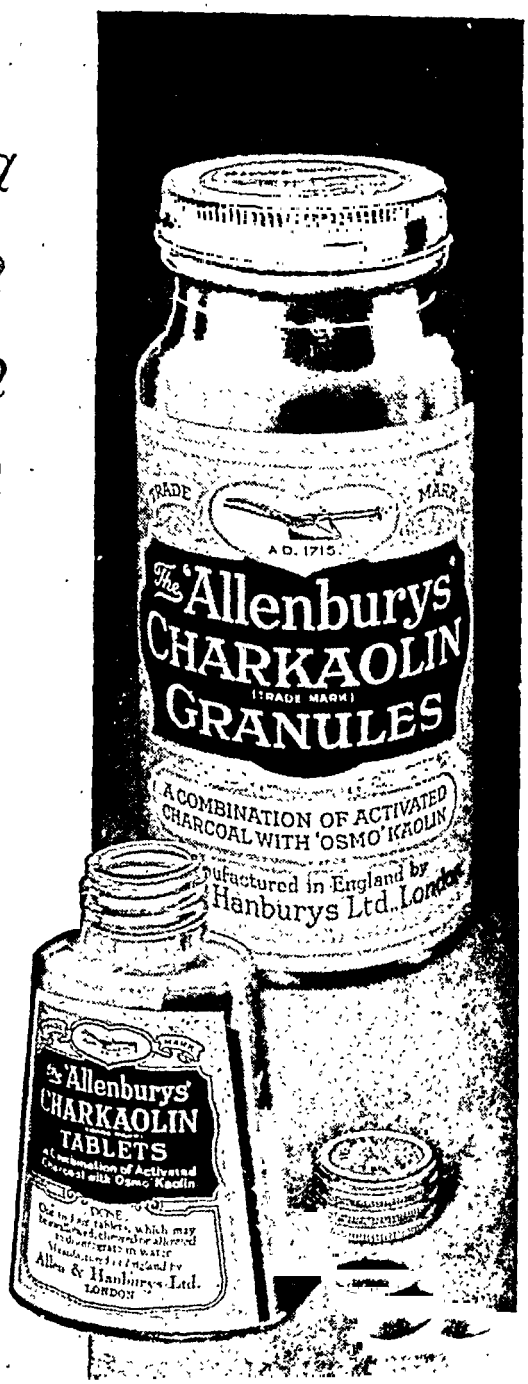
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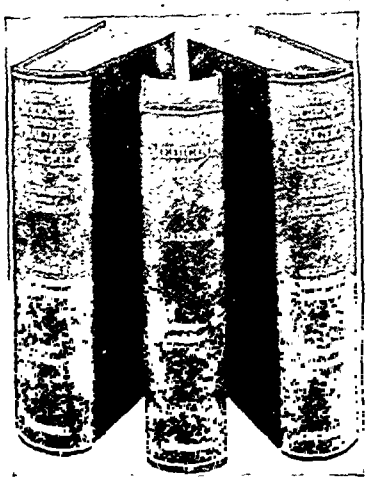
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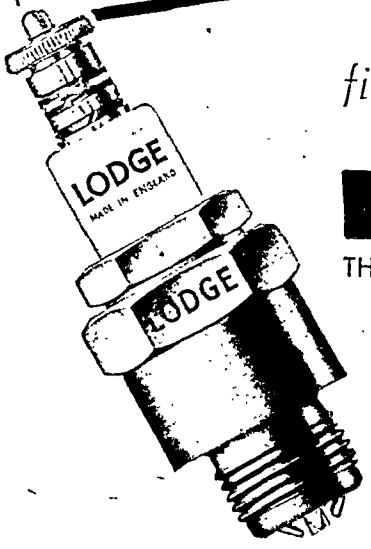


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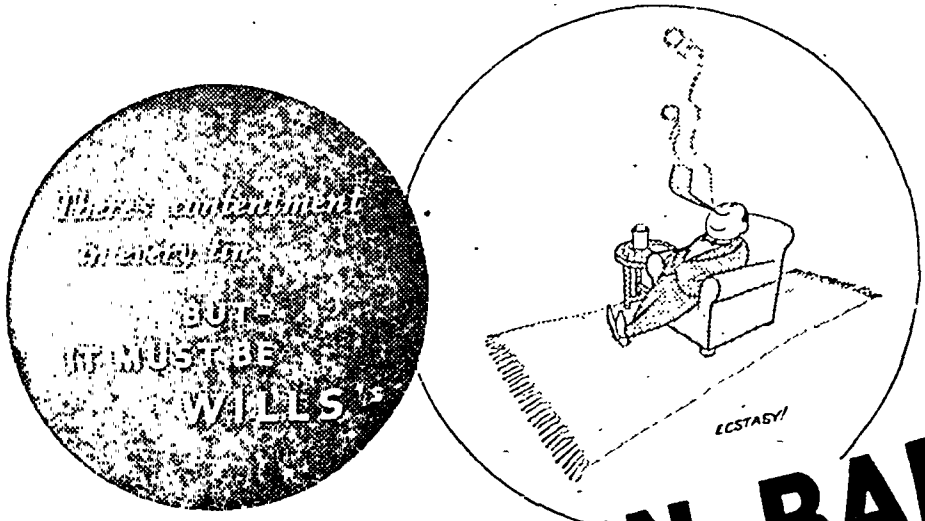
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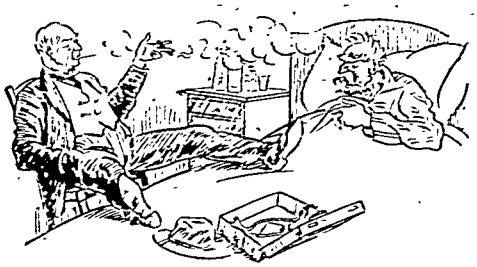
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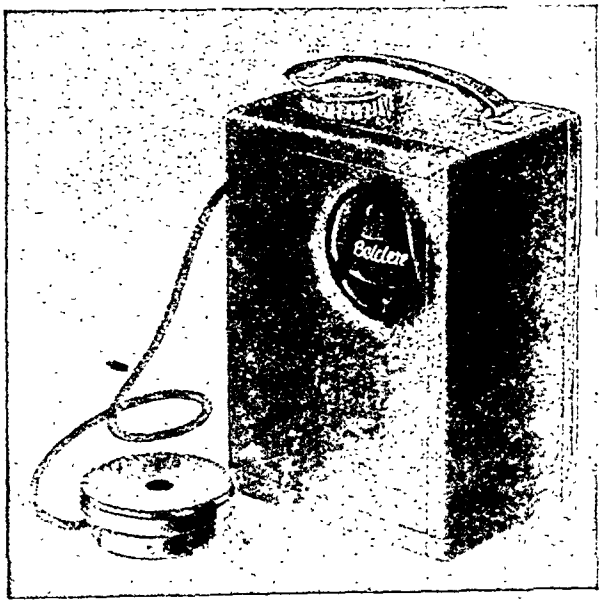
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DESOUTTER

CASE RECORDS

Case No. H2029. 1934

Mrs. B., a patient with a left Syme's amputation, came to see us in 1934 with an appliance that she had been wearing for two years which was ugly, heavy and ill-fitting, and causing her great discomfort. As a result of incorrect alignment the steel supports had caused pressure sores to develop at the inner side of the knee and outer end of the stump.

The end bearing, which should be the great asset of Syme's amputation, was taking practically no weight, by far the greater part of the weight being taken on a thigh corset with a bearing on the ischial tuberosity. Yet, in spite of this, the end pad of the stump was already showing signs of loosening due to the outward lateral movement which took place at every step (see Figure 1). If such end results are obtained, it is small wonder that many surgeons may regard Syme's amputation as unsatisfactory. In point of fact a Syme's can be as satisfactory an amputation as any other, when correctly fitted, as the case in question shows.

A plaster cast of the stump was taken, the positive copy of which was suitably modified to make use of the weight bearing points under the knee, and to ensure that the end bearing pad could expand without friction whilst taking a full share of weight. A leather glove was then moulded to the cast (see Figure 2) and encased in a light metal shin with a thin stainless steel cup forming the end bearing, giving great strength combined with lightness and a smooth outline, the mechanism for the ankle movement being a self-contained unit under the end bearing. Owing to the fact that the lower end of a Syme's amputation is much larger than the leg above it, it is only necessary to allow the lower end of the leather glove to open; the fastenings to the metal shin are quick and simple and so firm that once the limb is on it cannot be pulled off. The result is a comfortable light limb of neat appearance (this of no small importance to a woman), taking the weight on the end bearing and below the knee (see Figure 3).

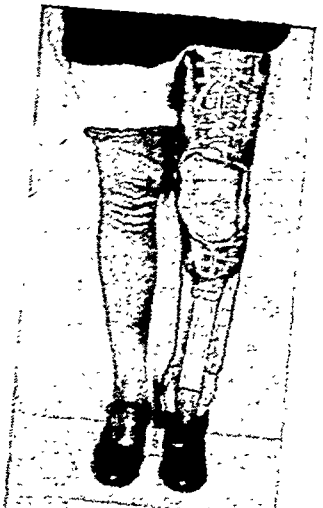


FIG. 1

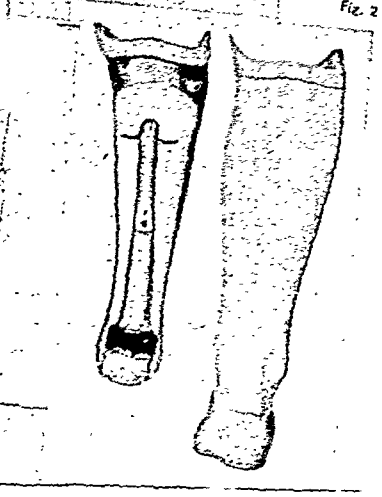


FIG. 2

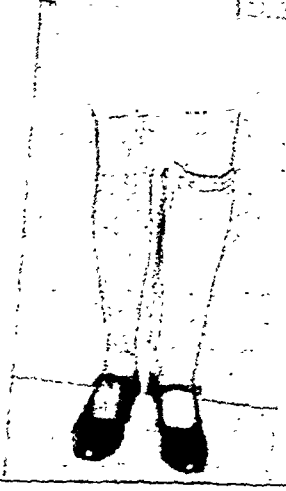


FIG. 3

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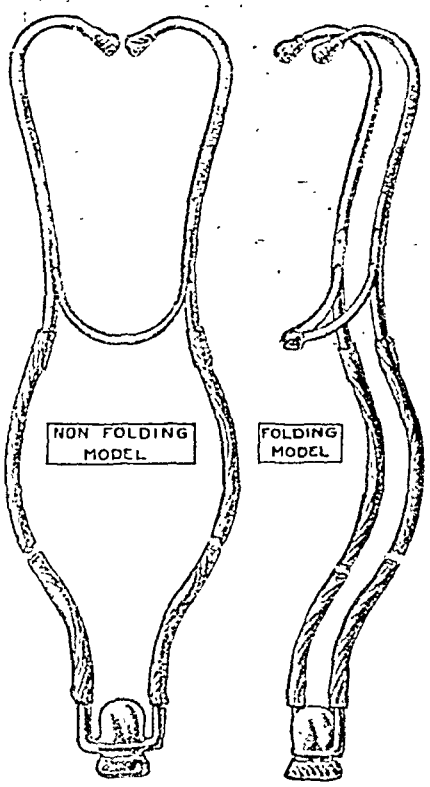
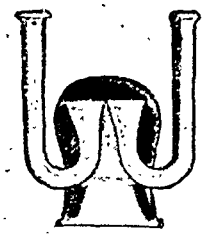
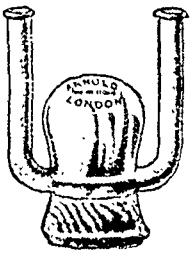


FIG. E
Non-Folding
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FIG. F
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EACH
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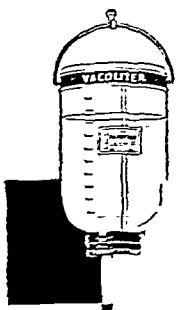
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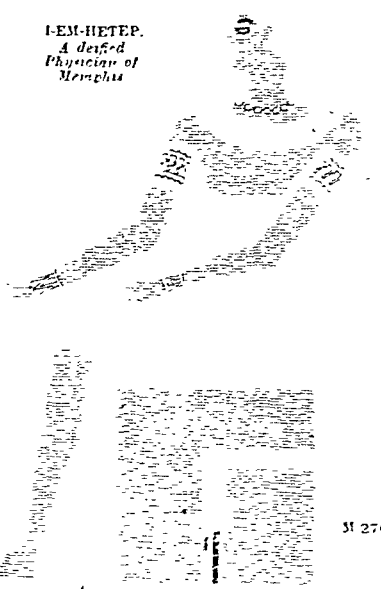
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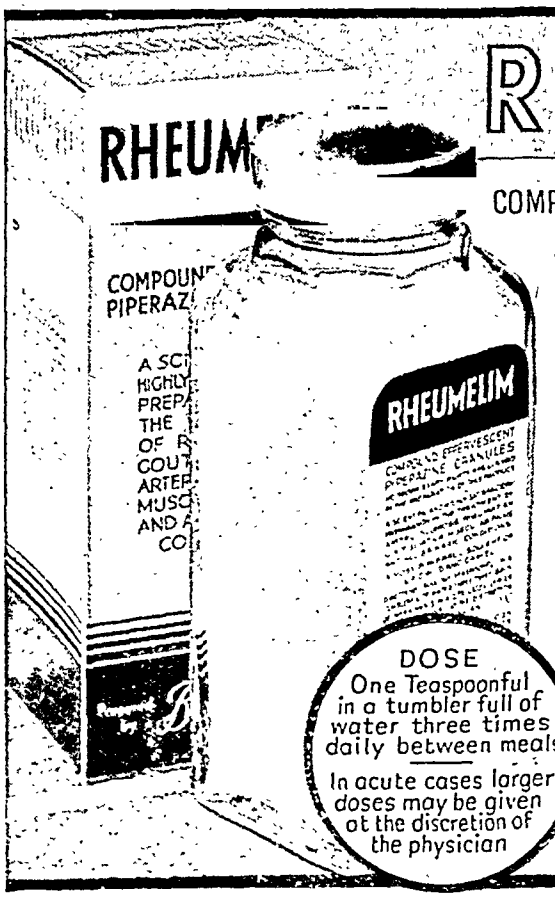
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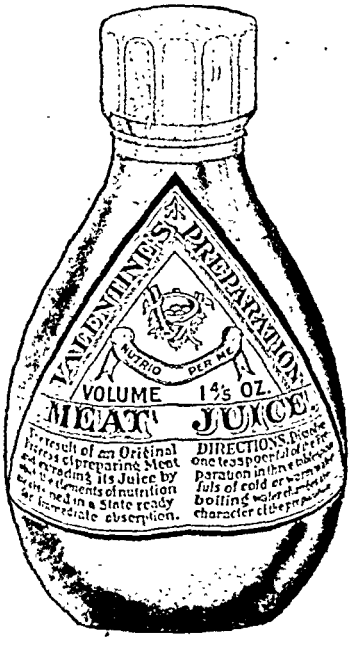
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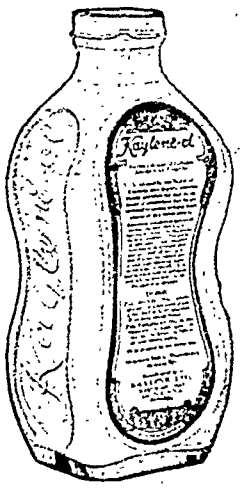
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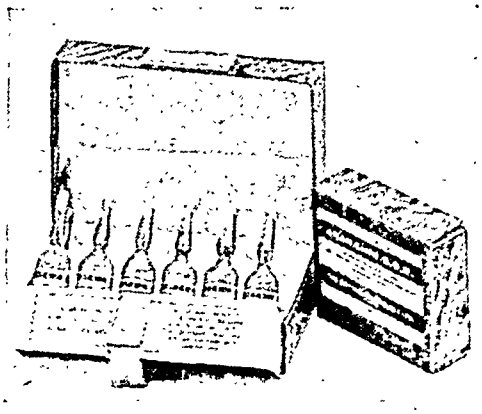
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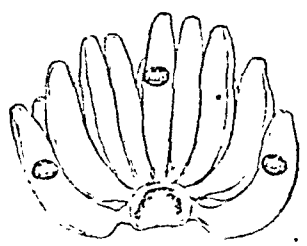
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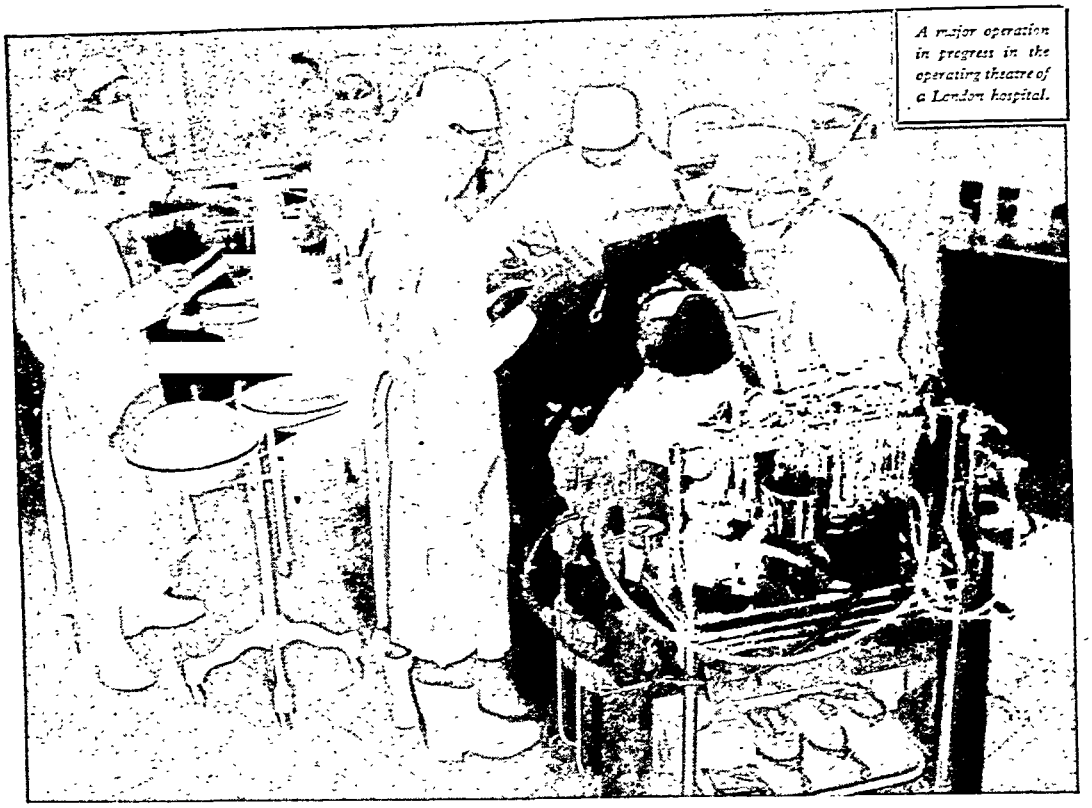
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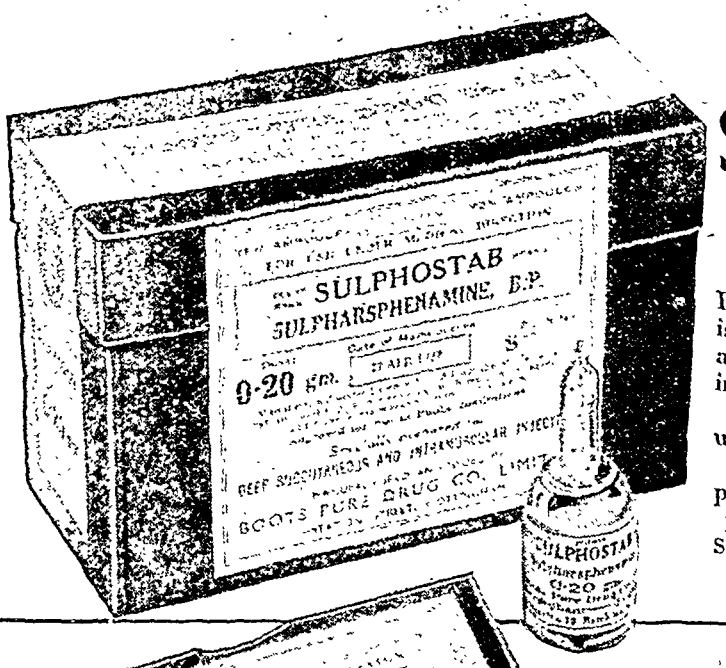
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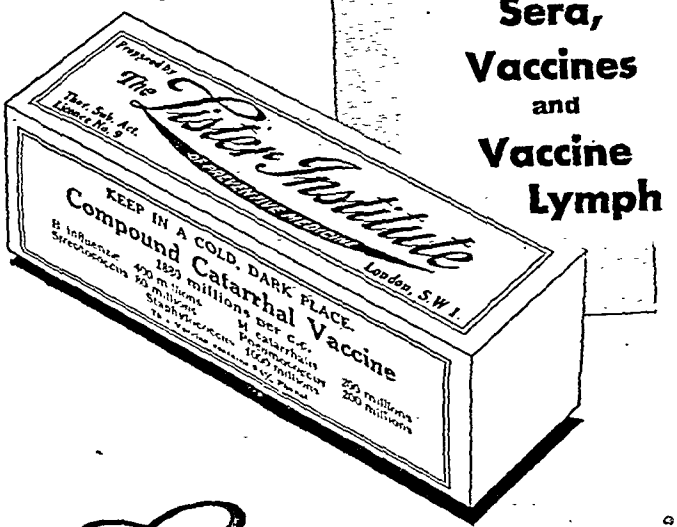
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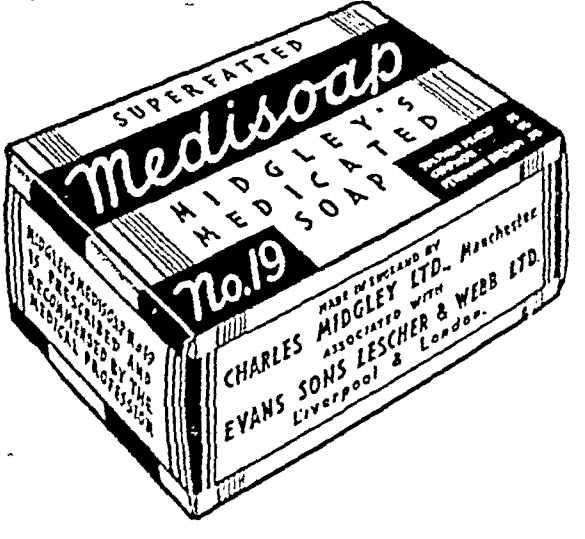
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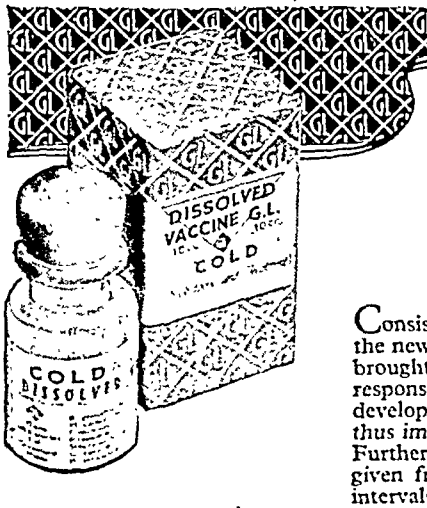
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BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 25 1937

THE WIDER ISSUES OF HEALTH LEGISLATION IN INDUSTRY*

BY

LEONARD P. LOCKHART, M.D.

Medical Officer, Boots Pure Drug Co., Ltd., Nottingham; Chairman, Association of Industrial Medical Officers

The new Factories Bill/Act,† in spite of omissions and shortcomings, represents a very considerable advance in social legislation. Under certain provisions health and safety are automatically improved. There are other provisions, however, which depend for their effect almost entirely on the manner in which they are implemented. There is nothing automatic for instance about Clause 11, which provides for medical supervision, nor about those wide new powers of the Secretary of State, nor about Clause 46, which deals with the removal of dust or fumes. The effectiveness of these provisions and of many more will depend to a very great extent not only on the available degree of care and skill, but on a high level of co-operation and of common consent to make the results as good as is humanly possible. It is here that we touch the wider issues of legislation, which can be regarded as of two kinds. It can produce some results by fiat, but, on the other hand, a great deal of modern social legislation defies accurate check and depends for its success on the existence of a widespread desire that in a particular field progress shall be made. Any enactment aiming, for instance, at a higher standard of first-aid work in industry would fall into this latter category. Such a law could be utterly defeated by a variety of factors.

It is not true that the legislature can always be the prime mover in social progress. More probably it is very rarely so. As Benedetto Croce recently said, "Discipline which contains Society instead of being contained in it leads to a suppression of the intelligence." Good laws must follow in the wake of experiment, and it is perhaps true to say that in the social field they act as pegs securing advances pending a new forward movement. They make obligatory on the many what the few have already found to be good practice. To some such an idea is heresy, but it seems the only practical one in relation to a developing system such as modern industry. It is useless to legislate that things shall be done if there are not enough people with the necessary experience to do them. Hence there must always be a vanguard of voluntary effort and experiment before a position is consolidated by law.

Experimental Work

A great deal of experimental work in industrial health has been done by individual employers, and much of what is known as industrial welfare has proved so valuable to the general well-being of the worker that the new Bill/Act is to give to it the force of law (vide clauses 2, 3, 5, 11, 41, 42, 43). It has ceased to be voluntary, and is to become an obligation. Much of the work that is still being done voluntarily and against which the charge of paternalism has at times been levelled is in fact the developing embryo of future law. If it fails to be socially valuable it should be dropped. If it is successful sooner or later it will become a statutory obligation. Holidays with pay, medical and educational services, a shorter working week, the study of incentive schemes, pension arrangements, and feeding facilities are but a few of the fields of experiment at the present time. Without the voluntary activity of certain progressive employers, aided by the co-operation of many of the trade unions, we should not now have acquired the necessary data to form the basis of much of our new industrial law.

To obstruct this voluntary work would be very short-sighted, because experimental laws lead to confusion, and the real social growth cells develop strength only in a free environment. Dr. Lane will later explain to you the details of one determined voluntary experiment which has produced results of profound social significance. The policy of the Industrial Welfare Society has been criticized at times, but looking back nearly twenty years no one can deny that it is the voluntary effort called forth by the Society which has been a most powerful stimulus to progress and which has enabled ideas to become acceptable that ten years ago would have been rejected as unworkable. Without the practical experience of such voluntary schemes the health provisions of the present Bill/Act would have encountered an opposition in Parliament undoubtedly sufficient to wreck many of them. Robert Hyde and his co-workers deserve recognition by our profession.

Under the new Factories Bill/Act undertakings which have discharged their duties faithfully in the light of modern knowledge will find few if any new legal burdens placed on them. Certain things that were formerly done voluntarily will now be done under statute—that is all. The burden falls on those who have hitherto worked to minimal standards. These will have to adopt a new standard, and their competitive advantage over more conscientious firms will be reduced. In the long run such competitive advantage is probably illusory because good conditions and healthy workers lead to sound industrial operations, but on the short view it often happens that a firm working to a low hygienic standard can undersell the more expensively operated concern which increases its overhead costs by giving safer and more healthy conditions of work. Regarded in this way the new Bill/Act will enable progressive minds to work out new advances.

* Read in opening a discussion in the Section of Medical Sociology at the Annual Meeting of the British Medical Association, Belfast, 1937.

† At the time of writing the Factories Bill is still before Parliament. By the date of delivery it is probable that the Bill will have become law.—L. P. L.

Some day these will be enshrined in statute and a new forward step made possible.

Legislative Proposals

The present Bill/Act has made provision for interim advances by granting to the Secretary of State very wide powers (wider than in any previous Factory Act) to make rules and orders having the force of law. It is obvious, however, that the detailed needs of a developing system, such as modern industry, could not be met by constant recourse to the full legislative routine. Parliament has insufficient time and technical knowledge for these urgent but frequently recurring matters. Our public health system would long ago have broken down if the Minister had not extensive executive power, but some form of statutory Advisory Board may be desirable, for it is important that a wide range of knowledge should be available to the Minister, not only when he chooses to call for it, but when the parties most directly concerned desire that it shall be called. This proposal is no reflection on an efficient department served by a body of zealous public servants, but it is the demand that new conditions be met by new methods. Many of the wider issues of industrial health, such as the psychoneuroses and emotional disturbances, together with their physical sequelae, arise not out of unhealthy conditions such as H.M. inspectors are concerned with, but out of methods of work, methods of selection of staff, systems of supervision, payment, and incentive which it might be improper or difficult for civil servants to concern themselves with. The Advisory Board would, however, be free to raise and discuss these matters before they are entangled in prejudice by becoming political questions.

For the time being we must take the Bill/Act as it is and realize that it pegs industrial health and welfare at a higher level than ever before, and that provision will have been made for detailed improvements in that standard pending some future date when a new law becomes necessary. Our interest therefore ceases to be with enactments and becomes fixed upon four bodies of individuals:

1. Those who carry out the provisions of law in industry.
2. Those experts called in to advise or supervise.
3. Those who by research and experiment will pave the way to new advances.
4. Those who teach and in whose power it is to stimulate an intelligent and informed determination to make progress.

The wider issues of health legislation can be summarized in one word—education. This is the task that lies before the present generation. The long fight to obtain recognition of society's duty to its members is all but won. The next task will be more laborious, and it will lack the spectacular victories of the earlier political struggles. It involves raising the enthusiasms of indifferent but not hostile people, passing new ideas into the currency of daily thought and action and bringing about co-ordination between diverse and at times conflicting interests, and, above all, stimulating individual responsibility. The success or failure of the attempt means more than the health of groups of industrial workers. It means the health and ultimate fate of democratic society.

Protection of the Worker

Men and women are still injured, poisoned, and inadequately treated in respect of occurrences in industry that ought not to happen. In some cases there is criminal neglect and in others there is that element of chance which exonerates everyone. Neither of these classes need concern us here. The law can look after the former and improved technique the latter. On the other hand, the great mass of industrial mishaps, maltreatment, or neglect arises because of shortcomings in what one might term "the industrial conscience." Partly this is due to a lack of awareness, partly to lack of knowledge, but very largely to a failure to appreciate the problem in its entirety. The safety and health of the worker must be the paramount interest on any plant or process. The temptation to stop short in the search for proper protection and to hope for the best is strong and must be resisted. Even the worker will sometimes resist protective measures, but then we must go a stage further back and try to find out why. It may be that earnings are reduced if protective gear is used. It may be that prolonged unemployment has reduced skill to such an extent that any further handicap is crucial. The responsibility for solution is then shifted from the technical staff to the general administration or even to the State itself.

Proneness to Accident

Accident proneness may be inherent in the individual, but it may be the result of the impact of a particular system of working on certain temperaments. It may even be that a system comes into general use in a trade and that its effect on individuals is entirely lost sight of. The result may be an increase in accidents or in ordinary sickness, and no medical supervision as envisaged in Clause 11 of the Bill/Act will be able to detect causes unless there is a full appreciation of the possible effects of methods of work on the general health of the worker. A differential diagnosis in such cases often calls for the co-operation of several different people, and for a medical opinion, but whatever the particular trouble any investigation must be a wide one: social issues, personal issues, and often chemical or mechanical issues are involved. A change of foreman may affect an accident rate, beneficially because he runs his shop well, adversely because he harasses and distracts the men. A certain well-controlled and prolonged experiment on the effect of noise resulted in the unexpected conclusion that in this particular case the personality of the supervisors entirely overbalanced the effects of the physically produced noise. It was under the better supervisor that the greatest well-being was experienced, irrespective of the type of machine used.

Personality in Industry

These effects of personality tend to be lost sight of in highly organized plants. The tendency is often to place too much reliance on the physical and too little on the temperamental. Neither must be ignored, but balanced judgement and a good deal of knowledge are essential. Health is a state of poise and internal harmony. It may be upset in a host of different ways, and the results may be seen in increased accidents, increased sick absence, lower production, or even in remote symptoms such as local social unrest. The village in proximity to a pit felt to be a risky one is not in social harmony. These things are not by any means digressions. So much is moving within the industrial organism to-day. So many changes sweep across whole trades and occupations irrespective of single factories that it becomes necessary to link up general health conditions with industrial methods and tendencies in order to get a complete picture of events, and to this must be added the continually lengthening list of chemical hazards. Once, however, safe and just conditions of work have been produced it is deeply harmful to the self-respect, general health, and proper social development of the individual if responsibility is removed from him or her. Unless as individuals we can retain

enough of our personality to achieve personal successes or failures and have some scope for personal adventure in life, we all tend sooner or later to find other outlets for our self-expression; the escape into illness is one of them, and it is by no means generally recognized.

Responsibilities of the Employer

If we are going to look further afield than the actual work in our search for causes of ill-health, hazard, or accident, how far has the individual employer a duty in respect of these conditions? Some are obviously his responsibility, such as the bad selection or inadequate education of supervisors or foremen, and methods of pay that put a premium on taking risks. He also has a duty in certain cases to attend to the transport and feeding of his employees, but in other instances matters are obviously beyond his scope—for example, loss of skill due to prolonged unemployment, rush orders to fulfil contracts for which there is no real urgency, demands from the public for articles which are hazardous to produce and necessary only for the dictates of passing fashion. In many ways the pace at which work is demanded and the sudden changes that occur in the nature of the demand place a very great strain on even the most conscientious employer. After all, if he loses orders his employees lose work, and the whole question of precipitate ordering becomes a social question of some magnitude.

Perhaps enough has been said to indicate the wide range of influences additional to those covered by law that bear upon working conditions and indirectly on the worker. The worker stands at the focal point of a very complicated system of influences, and as things develop the system does not tend to become simpler. It may be that society will be constrained to pause and consider before long whether anyone gains much by the amount of hurried work and whether, conversely, a number of people, particularly the productive worker and those who immediately administer his work, do not suffer a great deal in ways that are as yet beyond the scope of legislation but not beyond the range of that research and inquiry which must, in the nature of things, precede any legislative action. It is certainly true that in many works young employees get a quite inadequate amount of time spent on their training, both technically and in respect of safety.

Medicine and Industry

Medicine in one way and another is coming more and more into intimate contact with industry. The new Factories Bill/Act brings the possibility of medical supervision on a wide scale into practical affairs. The selection of staff, the training of supervisors, and the investigation of production problems have medical implications. It is necessary to know something physiological and psychological regarding workers for particular jobs such as motor driving, flying, and deep-sea diving. Skin conditions, ophthalmic problems, and cardiac efficiency are but three on the physiological list, while the type of worker who is temperamentally unfitted for particular tasks is now receiving much attention. It is no use working these things out if we have no social mechanism for effecting transfers or for absorbing misfits where they will be assets. Misfits are not just psychological oddities. There are also countless physical misfits such as asthmatics, diabetics, orthopaedic cases, and ex-tuberculous patients. We cannot just relegate such people to an industrial scrap-heap. They have a right to be fitted in, provided that for their part they are willing to co-operate in reasonable measures for their welfare. The difficulties at present of dealing with these cases are great, but as they are overcome, or perhaps in order that they may be overcome, we need large numbers of medical men and women who are able to relate medical data to industrial conditions and who understand something at first hand of actual industrial problems. Industry is an intricate affair. It is full of all sorts of anomalies, but not everyone realizes that they are anomalies. It is in this connexion that it becomes so obvious that in general education a biological interpretation should be given so that the future administrators of industry and of the social services could be enabled to appreciate more fully the nature of the problems that face them. Such a question as the shortening of the working week and the increase of leisure has marked biological factors. Working conditions are an integral part of the process of living, and work is a part of life. A proper increase in leisure is essential, but the four-hour or five-hour working day is a myth—not theoretically or economically, but biologically. Somewhere there is an optimum balance between work and leisure which politicians and statesmen cannot determine without a knowledge of the biological and psychological needs of an emergent society. Planning must fit man and not man the planning. The present lack of a biological background to social action is nowhere more evident than in our views on workmen's compensation. An injured man needs temporary financial aid pending cure, or compensation for any permanent loss of earning power and vitality, but he also needs the services of a proper rehabilitation scheme. To stimulate the will to rapid cure and to find suitable work in which the man can complete his cure are twin problems. The longer a man is idle the harder is the process of return to work.

Industrial Training for Doctors

An industrial training for doctors as a postgraduate course with practical experience is essential. The financial difficulties are great, because merely visiting industries is quite inadequate and the proper training takes time. In addition to a study of processes some insight into managerial functions and technique is necessary to enable the doctor to understand the problems of administration. We are but at the beginning of a new phase, and how we deal with it is a matter of very great importance. During the great war the Army learnt that it was essential to bring in the medical staff when discussing major operations. Industry is now in the same phase. It is beginning to take medicine into its counsels and to give it more than a purely research and supervisory function. Progress is slow, but a step in the right direction was taken when the British Medical Association decided to prepare an ethical code for doctors working directly or indirectly in industry. They legislated for a new idea, and the proposals are before the Representative Body at this meeting. They went further when, in order to deal with the wider issues of social medicine, they formed a joint committee with the Trades Union Congress.

Until a few years ago a mere handful of medical men and women surveyed the major medical problems of industry. Mostly civil servants, starting with Thomas Legge in 1898, they laboured without any publicity and with very little recognition, doing a piece of work of which this country has cause to be extremely proud. The certifying factory surgeons did their share of supervision, and now medicine is asked to undertake a far greater responsibility for industrial health. The new Bill/Act lays very considerable burdens on us as a profession, and we must evolve the necessary machinery to train and educate (they are not synonymous terms) doctors for industrial work. Medicine is becoming a function of

management. Employers take medical men and women into their concerns, and in some an administrative and advisory function is combined. The Trade Unions have their own medical advisers, and the great hope is that all these different officers will continue to pull together in mutual confidence and consideration as they now so happily do. The universities are awakening to the need of supplying trained graduates (vide Birmingham and London), and the stage is set for a large-scale advance. This is likely to be rapid once we have overcome the difficulties of co-ordinating the sociological (labour management and health) functions of the small firms. These employ about two-thirds of the insured population, and the new Factories Bill/Act will be a great stimulus to co-operation on labour questions.

Social Implications

To an extent which those outside industry often fail to grasp, the industrial system of to-day is rapidly becoming the social centre of gravity. Many of its problems are primarily in the field of social medicine, not only in regard to the health and welfare of the workers, but indirectly in its effect on the whole social structure and the issues that arise therefrom in the lives and destinies of the bulk of our population. As a profession we cannot ignore the wider issues of industrial health; but we cannot understand them or play our part adequately unless we are prepared to study the industrial structure, from the worker at his bench and in his home to the administrative and technical functions which control his work, and to realize that in the widest sense his health is dependent on many factors, and that any attempt to deal with parts of the problem in isolation must prove a failure. Every preventive and therapeutic measure must be related to some central idea, because the worker himself is not isolated but is a functional part of an intricate system, and his health, happiness, and social efficiency depend on a high degree of technical and cultural co-ordination. Doctors, employers, trade unionists, economists, and teachers must understand each other and work together if we are to evolve progressive ideas which, after due trial, can be turned into the currency of practice, and without which no legislation can be of the slightest avail.

A specification for haemacytometer counting chambers and haemacytometer dilution pipettes has recently been prepared, with the co-operation of the medical profession, by the British Standards Institution. In framing the specification particular attention has been paid to the various tolerances specified. The accuracy of a blood count depends on the skill of the operator in obtaining a representative sample, in carrying out the dilution, and in the use of the counting chamber; it is also limited by the errors of the apparatus employed. The accuracy of the final count depends, *inter alia*, on the accuracy of a number of elements of the counting chamber—for example, accuracy of ruling, accuracy of depth, departure of under surface of cover glass from a plane, etc. In view of the number of possible sources of error the tolerances on individual elements had to be kept small in order to avoid the possibility of a comparatively large error in the final count due to an accumulation of small errors. On the basis of measurements carried out at the National Physical Laboratory on samples submitted by manufacturers as representative of current production, the tolerances were also related to the degree of accuracy attainable in manufacture without unduly increasing the cost of production. Copies of the specification may be obtained from the British Standards Institution, 28, Victoria Street, S.W.1, price 2s. 2d. post free.

THE WIDER ISSUES OF HEALTH LEGISLATION IN INDUSTRY*

BY

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My contribution to the discussion is an account of what has taken place in the electric accumulator industry during the last twenty years. It will furnish, I hope, a concrete example of what can be done, and what is now being done, to safeguard health in a dangerous industry, and will give some idea of the importance of individual effort as a complement to legislation.

In the first place I must point out that the particular risk in the battery industry is lead poisoning. In the years immediately following the war the industry began to expand. Batteries were needed for numerous purposes, and new fields opened up for their use. This demand had to be satisfied, and manufacture was undertaken by people with no previous experience of the industry and with little knowledge of the dangers it involved. They found that they were subject to certain Home Office rules and regulations, which they observed, or tried to observe—at any rate in the letter.

Soon it became evident that all was not well. A few workers were taken seriously ill, many looked and felt unwell, and the general standard of health in the industry deteriorated. Men became apprehensive when they heard of their friends suffering from lead poisoning; they became more worried when they saw that some of them were paralysed, could not dress or feed themselves for months on end, and did not return to work for a year or eighteen months. Some sought other jobs, but most carried on. They did what men usually do in these circumstances—they made feeble jokes about the danger, and a certain department became known as "The Dead House." The evil reputation spread to the districts round about, and it became, for instance, a stock joke for the wag visiting the works to misinterpret the notice "Drive Dead Slow." I mention these facts merely to give you some idea of the state of mind that existed among employees—a state of mind that can have produced nothing but harm, and probably caused as much suffering and inefficiency as the actual lead itself.

The larger firms did much to improve conditions, and during 1924 the Home Office authorities, viewing with alarm the rise in the number of cases of lead poisoning, decided that further and concerted efforts must be made. Employers and others were consulted, and the regulations governing the industry were completely revised. These rules, which came into force in 1925, made the best practice of the more progressive firms compulsory on all manufacturers, and regulations were drawn up by the Medical Department of the Home Office based on the vast experience of lead poisoning which they had accumulated in past years from other industries.

These regulations may be said to have brought the practice of the backward up to the level of the progressive firms, or, in Dr. Lockhart's words, "They pegged the advance." There was at any rate to be no slipping back from this level. This was a reasonable standard, and it was to be a minimum standard. Excellent results followed the introduction of this code of regulations; the number of cases began to fall, and has continued to fall ever since. This decline, however, has been assisted by another factor, which I will now describe.

* Read in opening a discussion in the Section of Medical Sociology at the Annual Meeting of the British Medical Association, Belfast, 1937.

Despite the introduction of the 1925 regulations the incidence of cases in the largest and most progressive of the firms continued to rise. This apparent anomaly is easy of explanation. I have already pointed out that the 1925 revision of regulations was largely based on the current practice of the progressive firms, where these regulations had been voluntarily applied for a considerable time. In making the code compulsory, therefore, little change was necessary in the methods of this factory. Their business, however, was growing fast, with a corresponding increase in the number of employees, and since the proportion of cases to employees remained fairly steady it is obvious that the number of cases would continue to rise.

Investigation in the Factory

Here was a difficult problem. The Home Office could not immediately introduce more stringent regulations: it was already working hard to administer the previous code. The employers also were extremely worried at the turn of events. They had spent a great deal of money in their attempt to put things right, and still they were unsuccessful. It was here that the Medical Department of the Home Office went outside the rules and regulations and functioned in its other most important capacity—that of adviser. The Chief Medical Inspector pointed out that the problem needed further investigation "on the spot," and it was suggested that the firm should appoint a medical man who would study the problem in the factory. Fortunately, this company had a board of directors which needed no persuasion that money so spent might reasonably be expected to result in a solution of the problem. At any rate they were prepared to make the experiment, and a medical officer was appointed for three years. He was to study the industry and its particular dangers, and was to make recommendations as to how improvements could be effected.

For his work it was necessary to have facilities for determining the effects of various doses of poison, how this entered the body, and the limits of contamination of the atmosphere which might safely be allowed. This knowledge was used when collaborating with chemists and engineers to produce safe working conditions. In addition it was necessary to elaborate methods for the routine medical supervision of the workers. But more than this was needed; it was essential that hours of work, and in some cases rates of pay, should be adjusted. These matters not only required the co-operation of a management which was fully alive to its responsibilities to the workers, but one which had the will and determination to see that every necessary step was taken. The figures show that the results of the experiment were satisfactory; in fact, they were so satisfactory that these methods were in 1929 extended to other factories in this industry, and with the same happy results. Here, then, we have an example of the wider activities of the Home Office in dealing with problems of this type. Rules and regulations embodying the best-known practice are laid down to ensure a reasonable minimum. Firms are then encouraged to undertake further pioneer work in which advice and expert assistance are forthcoming. This seems an eminently practical method of procedure, and one likely to give good results. To my mind the advisory function of this Government department is a most important one.

It might be argued that the method adopted in the case I have described is not the best method of procedure; that all investigations should be made by a Government body, and that rigid rules and regulations governing manufacture should immediately be based on these findings. The charge of paternalism might even be levelled at this industry, and at the methods it has adopted. Such a charge, however, can be easily met. It should surely be required of any employer that he should provide safe conditions of employment for his workers. If the public demands an article the manufacture of which involves expensive plant and an expensive organization, it must expect to pay a correspondingly high price. Attempts to cut prices at the expense of the worker's health were the habit of industry in the past, and it would seem that one of the biggest advantages of any large combine is the power it possesses of keeping prices at a level which will enable the worker to be adequately provided for in the matter of healthy working conditions. In this connexion it is interesting to note that in a recent trade agreement of which I have knowledge general collaboration upon measures for health protection was specifically agreed upon.

Need for Concerted Effort

Dr. Lockhart contends that the long fight to obtain recognition of society's duty to its members is all but won. This is true. What is now needed is a concerted effort to implement that recognition. There are still far too many individuals who evade the responsibilities the community rightly expects them to carry. There is no doubt that some of the smaller firms provide the best possible working conditions—conditions and relations which are only possible in a small undertaking, but unfortunately the converse is also true: many of the very worst conditions so far as dangerous trades are concerned are found in small firms. In some cases this results from the necessity to cut prices, and where this is so an attempt is often made to reduce overhead expenses by curtailing necessary health services. In other cases personal selfishness influences policy. No education of the individual employer will entirely overcome this attitude where it exists. He must be strictly controlled by legislation, which must not lag far behind the most progressive practice. He will then be obliged to provide reasonable conditions for his employees, but the standard can never reach the level that is actually attainable unless the attitude and outlook of this type of employer is overcome. Public opinion can do much towards providing the necessary stimulus, and the trade unions must undoubtedly co-operate. Hitherto the unions have been largely concerned with obtaining an improved standard of money wages. As time goes on, however, they must also co-operate closely in an effort to procure the best working conditions for their members, which means the development of scientific advisory functions.

It is well-nigh impossible to introduce legislation which will provide for all contingencies. For instance, it will be remembered that recently in the House of Commons an amendment to the Factories Bill was introduced suggesting that "safety first" committees be made compulsory, and it was evident that the general feeling in all parties was that probably this was undesirable and that regulations making them compulsory would be likely to do more harm than good. Exactly the same argument applies to much that is done in the dangerous industries. Legislation is able to go a great deal of the way, but final success depends largely upon the employer and upon his outlook, and—what is often forgotten—upon the co-operation and support of the employees.

The Trained Medical Officer

An employer willing and anxious to provide the best working conditions for his employees will in many cases need expert medical advice. If he is prepared to accept this advice he will find he avoids many pitfalls. An

interesting example recently came to my notice. A small factory which had been carrying on quietly and safely for many years decided to introduce so-called efficiency engineers to improve its methods. This resulted in turning out rather more material per man-hour, but at one stage a very large proportion of the workers were down with lead poisoning. In this particular instance, had a trained medical officer with adequate industrial experience been asked to co-operate with the engineers it is certain the "speed-up" could have been carried through without such disastrous results to health.

How is the employer to obtain this advice? Much may be procured directly from the Home Office authorities. Where, however, experimental work is necessary this may now be carried out at either London or Birmingham University, where a department of industrial hygiene has been opened. In other instances the problem might be investigated by the Industrial Health Research Board, which, as you know, is administered under the Privy Council. The problems investigated by the Board are usually of fairly wide application, and the findings can be of value over a large range of occupations or industries. In many cases it is important to have a completely impartial body, and one of high scientific attainments. It is a good thing, for instance, that the investigation of the incidence of gastric sickness among busmen was started by the Industrial Health Research Board some four years ago and was completed before the question became controversial. Whether or not the pioneer work is best done by University bodies, by the Industrial Health Research Board, or by the industry particularly concerned may be a matter of opinion, but that it must be done by someone is obvious. Most people will be ready to agree with this contention in the case of the dangerous trades. The figures available are convincing evidence that a danger existed, and that certain steps were successful in overcoming the danger, while the most obstinate director is likely to be convinced of the value of this type of work when he finds that it is actually saving him money and that his medical department is costing rather less than he had previously spent on compensation. It is perhaps not so easy in ordinary industry to convince the sceptic that these methods are necessary, but those of us who are in close contact with the medical side of industry know that it is just as important for these industries as for the dangerous trades.

Commentary

I hope I have made it clear that in order to obtain real and final success the attitude of the employer must be the correct one, and the worker must be co-operative. The education of both employers and workers in these matters is of vital importance, and it is only by improvement in both and by the general education of public opinion that we can establish the best conditions in industry. This education is going on and conditions are improving steadily, but it behoves all who are interested in the public health to see that this education grows and flourishes. It appears to me that this means that the medical profession must take a much greater interest in these health problems, and must make an effort to acquire a real and accurate knowledge of industry's needs in this sphere.

A large cancer institute with an experimental department, hospital, and out-patient department has recently been founded in Buenos Aires, with a branch at Bahia Blanca. It has been found that only 3 per cent. of the patients seek advice in the first month, as compared with 86 per cent. after the end of six months.

THE WIDER ISSUES OF HEALTH LEGISLATION IN INDUSTRY*

BY

ERNEST BEVIN

It is a gratification to the great trade union movement that the industrial health problem is receiving much closer consideration than at any period in its history. The problem has given our movement much anxiety and has involved considerable expenditure of money and effort in bringing about investigations to secure the scheduling of industrial diseases.

Opportunity for a Co-ordinated Service

With the passing of the Factories Act, although in many respects it falls short of our desires, and the placing of the industrial health problem on a more organized basis, an opportunity is presented for a really co-ordinated service which, for the first time, can be made universal in its application. We agree that a large contribution has been made by voluntary effort. It is true that it may have been introduced from a variety of motives, possibly paternal, or from the point of view of economic efficiency; or schemes may even have been conceived with an idea of handicapping our own movement. But motives do not always govern achievements or determine the effect of a course of action which may be taken. The net result has been to produce sufficient evidence to enable the State, employers, and trade unions to approach this problem and place it on a more organized basis, co-ordinating all the contributing factors and linking it with a complete medical service which, if handled correctly, will become a great national asset.

The Health Problem and Capital Values

If the health problem could be viewed from the point of its capital value it would be possible to arrive at a better estimate of the result to the nation of its neglect, for it must be remembered that the only capital a worker has is his skill and ability to work. Therefore if the capital loss could be calculated in terms of depreciation, as is done in the case of machinery, the facts would be such that, applying the same result to the mechanism of a works, the industrial management would call in the best scientific and engineering ability at its command to remedy the loss. I suggest that the loss of value resulting from the lack of proper standards for the health of the worker, if it could be translated into capital, would represent a greater total than would appear under any other head. No attempt, however, has been made to calculate the actual capital value of an efficient worker, as represented in output and gain to the community. In addition, the loss is extremely far-reaching, for whilst a machine may depreciate, its effect is limited; but physical deterioration of the worker has a very grave repercussion upon his home, on the well-being of his family, and on his general environment.

We welcome the consideration of the industrial health problem from yet another angle. For a long time it was assumed that the main thing to be decided in the case of a worker who was ill was whether or not he was a malingerer. Practically the whole of the Workmen's Compensation Laws and restrictions associated with certain health services have been based upon the assumption that protection had to be secured against exploita-

* Read in opening a discussion in the Section of Medical Sociology at the Annual Meeting of the British Medical Association, Belfast, 1937.

tion on the part of the worker, and to that extent the service has been handicapped in its outlook. I am not too sure that the attitude of the medical profession itself in the past has not been coloured by this conception. Happily, however, with the growth of the study of psychology and a deeper understanding of the industrial health problem, this approach has to a large extent been changed. Housing and the habits of the people themselves have also been a great stumbling-block.

The Works Doctor

Another difficulty which has handicapped us in dealing with the medical examination of work-people has been the attitude of the people themselves towards the works doctor, and the works doctor's attitude towards the work-people. It must be remembered that in many public services and large works the works doctor is looked upon as the person employed by the management to protect its interests. For instance, in one great undertaking if a man is away ill for a period of three weeks he must be specially examined before returning to work—not for the purpose of finding out the cause of illness, but to ascertain whether he is fit for the particular occupation upon which he is engaged. The result of this has been to create fear in the minds of the workers, and they try to get back to work within the specified period even though they may not have fully recovered. Had I time I could mention many other examples. In order to protect men undergoing medical examination my own organization has found it necessary to establish agreements making provision for the union to submit the worker to a second doctor if it is not satisfied with the decision of the works doctor; then, if agreement cannot be reached, to a medical referee. While this is necessary to protect the individual, the psychological reaction on the man is not conducive to his recovery.

Welfare Work

The same difficulty is experienced in connexion with welfare work. This has been very useful in some cases where there has been a common understanding. On the other hand, where it has been introduced without the union and in antagonism to them it has produced quite a bad reaction. For these and many other reasons I welcome the opportunity now presented for a complete overhaul of the whole medical service and the establishment of a branch which might be designated an industrial medical service.

Another great difficulty with regard to the health factor is that before steps are taken to remedy an existing evil one must establish a prima facie case by comparison with other controlled groups. This seems to be a fetish of the medical profession. The matter was brought out very clearly in the recent London bus situation. In 1928 I saw the difficulty which was arising: here was a body of men with a high physical standard of health who were beginning to show certain intensified nerve reactions different from those that had hitherto existed, and I pressed for an examination of the matter. It took me from 1928 to 1934 to get it into a position for a proper study to be made by the Industrial Health Board of the Medical Research Council, and the report of the investigation has only just been issued—in July, 1937, a period of nine years.

The Study of Health Problems

We want a service which will study health problems immediately they arise in industry and take measures to safeguard the health and welfare of the worker, remembering that prevention is better than cure. Very often a worker, for economic reasons, will suffer a long time before acknowledging he is ill and going to a doctor. Even then the ordinary medical practitioner has little time to study the complaint seriously, and may have only a slight idea of the effect of industrial conditions upon the health of his patient. Similarly the union, until it receives complaints from a sufficient number of its members, has little or no knowledge of the insidious development of factors undermining the health of the people. We must therefore try to ascertain the best way to take advantage of the new conception of health measures, to profit by our past experience and difficulties, and to tackle the health problem at its source.

Suggestions for a Co-ordinated Service

We should be reluctant to see a new segregated medical service established. It must be remembered that while we have exerted considerable pressure to bring factory legislation up to date, the workpeople and industry generally are paying a substantial sum per annum for a medical service which, in the general view, is not yielding the results we are entitled to expect. I am hopeful that ere long the new Joint Committee of the British Medical Association and the Trades Union Congress, together with the Departments of State concerned, will examine the whole problem with the view to ascertaining the best possible form of organization to establish: (1) a co-ordinated medical service: (2) a comprehensive research organization; (3) a reorganized panel service; (4) a more rapid and practical application of scientific discovery to the needs of the medical service.

The bulk of medical practice in this country is concerned with industrial workers. How can this be linked with the industrial medical service we contemplate? Taking the great hospitals as a centre, I should like to see the following experiment made:

(*a*) Twenty or thirty medical practitioners pooling the whole of their panel patients.

(*b*) The State or public authorities providing the necessary building accommodation and equipment for the setting up of a special clinic.

(*c*) Each medical practitioner, whilst continuing as a general practitioner, having an opportunity to specialize on some phase of industrial medical work.

(*d*) Works doctors participating in the work of the clinic and acting as part of the General Practitioners' Service.

(*e*) Close contact between clinics, hospitals, and research institutes, and every possible facility given to the carrying out of such work.

(*f*) Arrangements made for the diagnosis of the various cases to be sent to the appropriate research institution for investigation and record, and the prompt application of the most up-to-date treatment.

A better knowledge of the causes of illness in particular groups and classes of workers would soon be available. For instance, in looking over some of the last returns of the Registrar-General I find we have one of the highest tuberculosis mortality figures among dock labourers. The reason for this is a question not easily answered, but the high mortality figure is a definite fact. Is it due to the nature of the employment, to malnutrition of the workers, to irregular hours of work, to climatic conditions or exposure; or what is the reason for it? Similarly other industries have their specific diseases.

A detailed analysis and record of illnesses and diseases experienced in various sections of industry would be of tremendous value to the research institutes and to the

medical service. Details could also be supplied to the various Joint Industrial Councils throughout the country with regard to the trade or industry covered, and both sides would be compelled to discuss the difficulties existing; we should then get co-operation between the lay and medical mind in the promulgation of remedies.

Conclusion

The trade unions of this country, whilst asking for the most efficient medical service, are more concerned with prevention than with cure. It has been a great struggle for us to secure facts and data, and I do suggest to the great medical fraternity that individualism has been one of your greatest handicaps. Can you not concentrate your efforts and co-operate with us? If this is possible I am sure that industries will not limit their consideration to wages and hours alone. When discussing conditions of employment they will have before them a new basis upon which to work, resulting in general provisions for dealing with health problems being incorporated in the industrial structure.

As I said at the outset, our chief concern is to maintain what is, in fact, the capital value of our members, with ability to enjoy good health, preserve a high standard at home, rear strong and healthy families, and avoid the waste and loss of illness.

I appeal to the great medical service and to my own people to set aside all prejudices of personal outlook and make one great combined effort to establish a really correlated service that will remove one of the blots from our civilization.

THE USE OF ADULT SERUM IN MEASLES

AN ACCOUNT OF AN EPIDEMIC IN A PUBLIC SCHOOL

BY

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The following report of an epidemic of measles in a public school of three hundred boys with an age group of 13 to 18 years in which treatment by adult serum was used will be of special interest to all medical officers of schools as well as to doctors in general practice.

The school having escaped an epidemic of measles for several years the risk had been steadily increasing, and on January 15 we started the term with ninety-nine boys at risk of measles. On the 17th a boy was admitted to the sanatorium with a high temperature, and the next day he showed the typical rash of measles. The case was not severe: on the fourth day the patient's temperature was normal, and on the twelfth he was able to go home for a few days' convalescence.

Meanwhile the school had been infected, and the question of using adult serum in the hope of attenuating the disease in consequent cases was considered. The head master gave enthusiastic support to the suggestion, and steps were at once taken to obtain a supply of serum. Through the good offices of Dr. E. H. T. Nash of Hounslow we were put in touch with Drs. O'Brien and Parrish of the Wellcome Research Laboratory, by whom we were supplied with 100 doses of 10 c.cm. each. To replace the stock we undertook to return the equivalent in blood from selected adults. Members of the teaching staff readily volunteered for this purpose. The next step was to circularize parents and obtain permission to use serum. Consent was in the main readily given, but fifteen refusals were received. This number made a useful group of controls.

The most difficult point of all now arose—namely, to whom to give the serum and how soon? Supposing we were lucky enough to have escaped widespread infection and had meanwhile given serum to all at risk, we should very much have compromised our position in dealing with a future epidemic on the same lines. In the first instance, therefore, we decided to give serum only to those boys who showed a rise of temperature, or were +++ risks—a plus standing for dormitory, house, or form contact. The temperature of each boy who had not had measles was recorded daily. It was recognized, of course, that serum used in any but the earliest stage of incubation was probably of little use; but as it could do no harm and experience had not yet crystallized on this point, it was decided to proceed on these lines.

The course of events very soon clarified the position, and a fortnight later cases began to come in so freely that on February 14 serum was given to all who were susceptible. In the end seventy of the eighty-five cases were so treated. The object of this report is to be as helpful as possible to the head masters and medical officers of boarding schools, and in weighing the conclusions here arrived at it is important to bear in mind the following points:

1. That this is the first occasion on which the treatment has been used in a public school, and we were without experience to guide us.

2. That though the number of cases was large for a school, it is small for statistical purposes.

3. That the writer has had experience of at least three equally large epidemics at the same school under similar conditions.

4. That it is not always easy to give proof of clinical impressions even where those impressions are well marked.

The most important conclusion is that the serum proved all the help that we anticipated, and more. The attenuation of the disease was remarkable, and we shall certainly use the method in future. The load of anxiety a school medical officer has to carry during an epidemic of this nature must be experienced to be understood. With this adjunct to his armour of defence the doctor is materially relieved of that load.

Results

The examination of the records of the cases for statistical purposes supports the general conclusion arrived at very definitely, but the impression from clinical observation was even stronger.

The cases fall into three groups:

1. *Serum Not Given* (15 Cases).—This group includes the original case and one boy who was reported to have had measles as a child. The average period of pyrexia for these cases (excluding complication cases) was 8.2 days. The complications that occurred were one extremely severe case of bronchopneumonia (in oxygen tent fourteen days), and two cases of middle-ear inflammation necessitating paracentesis.

2. *Serum Given During Incubation* (20 Cases).—The average pyrexial period was 6.5 days. The complications were four cases of middle-ear inflammation necessitating paracentesis. Of these one was inoculated thirty-six hours only before the rash appeared, and should really rank with Group 1 as a complication. The remainder were injected ten, twelve, and thirteen days before the rash appeared.

3. *Serum Given Before Infection* (50 Cases).—The average period of pyrexia was 5.2 days. There were no complications

The freedom from complications in the whole series is remarkable, although the epidemic did not appear to have been one of a milder type than usual, as indicated by the cases which were not inoculated.

Observations of Attenuation

The following conditions were observed to be attendant on the use of the serum:

1. Lower temperature, fewer constitutional disturbances, quicker recovery.

2. The rash is noticeably different. It is much more discrete, rather more ham- or copper-coloured. It persists a long time on the face and is not so profuse or well marked on the trunk and limbs.

3. There was at first a suspicion that the incubation period is delayed; the rash appeared slow to come out, even for measles. This suspicion was not borne out by subsequent observations. We had, in fact, been prepared to accept the view that the serum conferred some degree of immunity when used before infection. The steady curve of the incidence graph does not support this. The inoculation of fifty boys on the same date might be expected to produce a definite flattening of the incidence curve if temporary immunity was a result of inoculation.

The real problem in aiming at attenuation in this type of school is to select the right moment to give the serum. The ideal from the treatment point of view would be the certain infection of the largest number from the first case. In a preparatory boarding school it would probably be wise to use serum without delay.

There is no reaction to the injection. It is well to give it before bedtime. There is some stiffness locally some four hours after injection, and a few boys were allowed to stay in bed for breakfast. Two patients had chicken-pox concurrently with measles.

In all cases with ear symptoms of deafness, discomfort, or pyrexia the drum is incised as soon as any bulging is observed. If the fluid evacuated has passed the serous stage we are disappointed at not having been earlier in intervention. The importance of the early treatment of middle-ear inflammation is not sufficiently insisted upon in the standard works on medicine used by medical students. It is worth recording in this connexion that in fifteen years' experience of measles epidemics in this school we have never had a case of mastoid infection requiring operation.

Conclusions

The use of adult serum has a marked effect in attenuating the disease and in decreasing the incidence of complications.

In the epidemic here recorded there was no evidence of temporary immunity resulting from the use of the serum. Early treatment of middle-ear infection by incision of the drum will greatly reduce the risk of mastoid infection.

The *Transactions of the Twenty-third Annual Conference of the National Association for the Prevention of Tuberculosis*, which was held last July in Bristol, have now been published from Tavistock House North, Tavistock Square, London, W.C.1, as a paper-covered volume of nearly 200 pages (price to booksellers, 6s. 9d.; sold privately at 7s. 6d.). The main subjects discussed were propaganda and publicity methods, preventive institutions, with special reference to open-air schools, and the equipment and activities of a tuberculosis dispensary.

THE VALUE OF CONTINUOUS NEGATIVE PRESSURE IN SURGERY

BY

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The use of suction to remove blood, pus, and other exudates in throat, abdominal, and neurological surgery is now well established. Through a bronchoscope or oesophagoscope no other method would be possible; in brain surgery it is essential to keep a bloodless operative field with the minimum of trauma to the tissues. For such purposes suction pumps are required which will remove a large quantity of fluid quickly, while the amount of noise such a pump produces is of minor importance because it is only used in an operating theatre for relatively short periods. There are many excellent pumps for these purposes which work by pedal, electric, and water power.

Suprapubic Drainage

Although the Harris operation is accepted as an advance in suprapubic prostatectomy, an attempt at the immediate closure of the bladder is advocated by only a small proportion of surgeons owing to the risk of reactionary haemorrhage and the difficult and constant after-treatment necessary. The large-calibre indwelling catheter required is very liable to give rise to a severe urethritis, which later may lead to stricture formation. Suprapubic drainage is regarded as much safer, especially in the hands of the majority of surgeons. Can, therefore, the disadvantages of suprapubic drainage be removed? There are roughly two ways of treating a suprapubic cystotomy. The urine can overflow through and around a tube, to be collected by a suprapubic box. The main advantage of this method is that the apparatus is so simple, but the disadvantages are many. Macalpine (1932) pointed out that overflow drainage of the bladder predisposes to perivesical extravasation, which contributes to toxaemia in a patient whose excretory function is usually already damaged. He has shown that post-operative uraemia and sloughing of the wound are often the result of overflow drainage of the bladder: "the fundamental fault is the saturation of the perivesical structures before any of it arrives on the surface of the abdomen." He supported his assertions by experimental and clinical evidence, and also by the marked improvement in his results since he used suction drainage. Although suprapubic wounds frequently heal well without the use of suction, especially in private patients in good condition, I have also been convinced of the improvement in the morbidity and mortality resulting from the use of suction suprapubic drainage. I have based my opinion on a number of cases at the Liverpool Royal Infirmary and other cases treated elsewhere during the last three years. Furthermore, if a suprapubic box is used early it has to be applied with firm pressure in order to prevent leakage; such pressure causes much pain in a recent wound, which becomes oedematous and gaping, thus also predisposing to infection and violating Hilton's principle of rest to a healing wound. The other alternative of allowing the urine to soak into repeated large dressings and the bed is an "incomparable disgrace to modern surgery."

Problem of Suprapubic Suction Drainage

Even in 1914 Chetwood described an electric suction pump operated by a 1/12 horse-power motor; this apparatus

also included a pressure gauge with a regulating device. Although this elaborate machine worked well I think it was too cumbersome and expensive to be tried by others. In 1916 Churchman described a rotary electric suction pump, but very few details are given about its use. A most ingenious apparatus was also devised by Davis (1916); this was introduced into the Liverpool Royal Infirmary by Professor R. E. Kelly, but it was soon given up because it leaked. The apparatus consisted of a large glass bottle which was exhausted by a vacuum pump: the vacuum was gradually reduced by a very fine capillary tube, thus producing negative pressure for a long time. Various hydrostatic pumps (Jordan, 1936) have been used even longer, but most of them are cumbersome, and they have usually been discarded because they have failed to carry over clots. I was amazed to find that a pressure of at least 10 cm. of mercury is necessary to be certain of bringing urine and blood clot through a tube with a 3/8-inch internal bore: this fact explains why the Cathcart type of pump is quickly abandoned. The Bunsen aspiration pump which is fixed to a cold-water tap is powerful enough, but it can only be used in a hospital bed specially fitted up, because the noise of running water would disturb patients. With this type of pump the rate of suction is far in excess of what is required if enough pressure is obtained, for the rate of suction increases with the amount of negative pressure according to the rate of water flow from the tap. An excessive rate of aspiration tends to cause unnecessary gurgling in the wound, cooling of the bladder, and accumulation of urinary deposits in the tube unless irrigation is arranged. However, the great advantage of this type of pump is reliability, unless the water supply fails or fluctuates.

The problem is therefore the removal of only about 50 oz. of urine in twenty-four hours, but it is mixed with blood clot and possibly diluted with a variable quantity of irrigating fluid. Suction should start *immediately* after the operation and be continued for at least three days; by that time one hopes that the perivesical tissues have become walled off and the wound has had a chance of healing under a dry dressing. Macalpine advised aspirating every quarter of an hour, removing about 1/2 oz. of urine each time. Although theoretically this should keep the patient dry, allowance has to be made for coughing, change of posture, and the unavailability of the nurse every quarter of an hour, so continuous aspiration is better. I also have the impression that there is less bleeding from a bladder which is kept empty.

For the last few years I have been trying to construct a satisfactory negative pressure apparatus, because I believe the lack of one is the reason why suprapubic suction drainage of the bladder has not been widely adopted. A serviceable apparatus should be capable of producing any degree of negative pressure up to 25 cm. of mercury, with an adjustable suction rate: the rate of suction required is very much less than that of the usual electric pump. The difficulty has been to construct a pump which possesses qualities of being reliable, almost silent, easily portable, compact, and preferably capable of working on both the direct and alternating main electric current so that it can be used anywhere suitable for nursing patients.

Methods of Applying Suction to the Bladder

It is important to keep the bladder almost dry and yet avoid any possibility of the mucosa being drawn against the end of the tube—that is, atmospheric pressure must prevail in the bladder by arranging for a down draught of air. This is usually secured by having a right-angled glass suction tube fitting loosely in the rubber bladder-drainage tube; the glass tube must be slightly shorter than the rubber tube. Another excellent method (Macalpine, 1932) is to pierce the rubber tube with a silver cannula or a long exploring needle, which also must not reach the end of the rubber tube. Whichever method is used lateral eyes are necessary in the distal end of the rubber tube: the second method is better when a very small rubber drainage tube can be used. Irrigation of the bladder is easily arranged by allowing a mild antiseptic solution to enter through the air inlet tube or a tube incorporated in the rubber drainage tube—for example, Marion's tube. One may prefer to pass the irrigating fluid per urethram. Irrigation at the rate of about one drop per second certainly hinders clot formation and the deposition of phosphates in the tube, but it makes the urinary output estimation more difficult. This estimation is, however, more of prognostic than of therapeutic value. It is difficult to say at present whether the irrigated cases did slightly better than the non-irrigated ones, but I think they do.

Empyemata

In 1890 Bülau advised siphon drainage of the chest because he considered that steady removal of pus and a steady intrapleural pressure caused less shock and assisted expansion of the lung. Immediate open drainage appears to have been the accepted method of draining empyemata until the work of Graham and Bell for the Empyema Commission emphasized the dangers of the open pneumothorax in synpneumonic empyemata (Morriston Davies, 1930).

Closed drainage does not necessarily mean intercostal drainage, but it implies that negative pressure is present in the drainage tube. An absolutely gas-tight junction between the tube and the chest wall is essential for successful production of closed drainage if a water seal or some other hydrostatic (McEachern, 1933) method of producing negative pressure is used. Intercostal drainage certainly makes it easier to obtain a gas-tight junction, but the small tube it entails prevents the proper drainage of thick pus and fibrin. Roberts (1935) stated that repeated aspiration through a needle is inferior to closed drainage because the cavity cannot be emptied of fibrin, also the filling up of the cavity between aspirations fails to reduce toxaemia and to allow the lung to expand. Moreover, repeated aspirations every forty-eight hours distress a patient, and especially so if infection of the chest wall occurs.

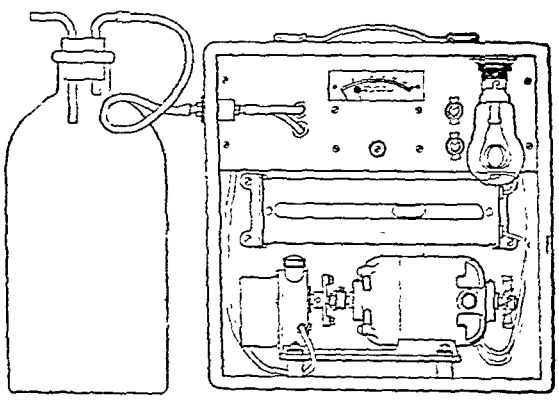
Closed drainage has many advantages over open drainage. The danger of the open pneumothorax, before the fixation of the mediastinum, is obviated. This applies especially in children, in bilateral cases, and in the synpneumonic streptococcal empyemata with thin pus. The negative pressure in the pleural cavity assists lung expansion, and therefore shortens the period of drainage required.

Closed drainage suffers from the disadvantage that the patient may pull out the tube, but this can be prevented by suturing the external flange of a Tudor Edwards (1931) tube to the skin and then using strapping to prevent the tube slipping through the external flange. In narrow intercostal spaces the pressure of large drainage tubes may cause necrosis of the adjacent ribs. It is better to resect a rib in all cases to ensure adequate drainage by a large tube, because rib resection need not prevent successful closed drainage. If a faulty siphon apparatus or a water seal is used fluid may be sucked into the chest, but

surely this is a fault of the apparatus and not of the principle of closed drainage.

The usual method of closed drainage operation is to pierce the chest wall with a trocar and cannula, followed by the introduction of a Pezzar catheter. Although Bettman's thoracotome (1933) enables a larger catheter to be introduced, I have mentioned the advisability of rib resection in most if not all cases. The "flapper" tube (Bohrer, 1934) is far too dependent on the gas-tight junction between it and the chest wall to be effective; also it can only cause negative intrapleural pressure during inspiration.

The Tudor Edwards drainage tube is probably the best because it is large enough to drain thick pus and it possesses an internal flange which greatly helps to maintain a gas-tight junction. If the chest wall is tightly closed round the tube and perhaps reinforced by a collodion-and-wool dressing there will be very little leakage. If, however, the tube is connected with a water seal the slightest leak will cancel all the negative pressure, which as a rule is a few inches of water only during inspiration and coughing. I have therefore tried the effect of a more constant negative pressure with my suction apparatus. A constant pressure can be maintained by placing a large bottle, the volume of which is considerable compared with that of the pleural cavity, between the suction-apparatus and the large drainage tube. A constant intrapleural negative pressure of 30 mm. mercury should keep the diseased lung practically at rest in the expanded condition. So far I have not treated enough cases to give statistics, but it appears very satisfactory. I believe that in the past we have been afraid to apply sufficient negative pressure to the pleural cavity. I have also had the opportunity to apply 30 mm. mercury pressure to the pleural cavity after



A portable continuous negative pressure apparatus.

a lobectomy had been performed by Mr. Hugh Reid for the first week after operation. During this time there was no effusion and practically no bleeding, while the general condition of the patient was excellent. I believe that this pressure helped to prevent collapse of the remainder of the lung with the necessary sequel of pleural effusion or empyema. This complication of lobectomy was discussed at a recent meeting of the Association of Surgeons, but no effective preventive measure was suggested.

Summary

1. The value of suction suprapubic and closed empyema drainage has been confirmed.

2. An attempt has been made to construct a suitable negative pressure apparatus for the after-treatment of suprapubic cystotomy, empyema, and lobectomy.

3. I have tried to point out that suction needs analysing into its components of pressure and the volume evacuated with respect to time, in order to suit the particular purpose required.

I have to thank all the surgical staff of the Liverpool Royal Infirmary for allowing me to try out the above methods on their cases. I am also much indebted to Mr. J. L. Mayhook, B.Sc., A.I.C., for his untiring efforts in designing and constructing the pumps that have been used. The present one, which has proved most satisfactory, is a gear pump worked by a universal 1/16 horse-power motor with a pressure gauge graduated up to 30 cm. mercury. The pressure can be adjusted to the required amount by a blow-off device incorporated in the pressure gauge, while the rate of suction is controlled by a rheostat.

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BENZEDRINE: A REVIEW OF ITS TOXIC EFFECTS

WITH THE REPORT OF A SEVERE CASE OF ANAEMIA FOLLOWING ITS USE

BY

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Benzedrine is the name given to a synthetic drug (β-phenylisopropylamine) chemically allied to adrenaline and ephedrine and comparable to them in its pharmacological effects. Prinzmetal and Bloomberg (1935) introduced it into the treatment of narcolepsy, as they had found it to be much more effective than ephedrine in this condition. Guttmann and Sargant (1937) recently reported further observations on benzedrine of an experimental and therapeutic nature which had been collected since the preliminary communication on this subject from the Maudsley Hospital by Peoples and Guttmann (1936). Their investigation was mostly confined to the action of benzedrine on the cardiovascular system and the psychological changes observed. Benzedrine produces a general psychological stimulation, and subjectively this is shown by increased confidence and initiative, and ease in making decisions, but is sometimes combined with a feeling of restlessness. They describe the psychological effects in detail, and further state that medical colleagues and others who have themselves taken benzedrine have found it of definite value in such tasks as lecturing or taking an examination. Their experience is that mild depression accompanied by retardation is the most favourable of all psychological disorders for benzedrine therapy. In conclusion, they warn against the possibility of addiction and are already aware that the drug is obtained without medical supervision. At present benzedrine may be purchased without prescription. As they say, this seems inadvisable with a drug the properties of which have still to be fully investigated. They emphasize the fact that the therapeutic indications for the use of benzedrine, apart from the treatment of narcolepsy, have not yet been formulated exactly.

Anderson and Scott (1936) have reported the cardiovascular effects of benzedrine. The patients selected for

the study were mild neurotics and psychotics, but were physically fit. The drug was given in amounts ranging from 10 to 30 mg. A certain number of normal subjects were also investigated. Pallor, flushing, palpitation, and both increases and decreases in the pulse rate and blood pressure were noticed in some of those receiving benzedrine, and in six recorded cases the effects included collapse, multiple extrasystoles, heart-block, and pain in the chest radiating into the left arm. In a case of involutional depression with paranoid ideas, severe cardiovascular effects of the administration of benzedrine were observed. After some mild preliminary symptoms over a few hours, this patient suddenly collapsed. The pulse rate was slow (56), and examination showed a 1/4 heart-block with an occasional extrasystole. Gradual recovery ensued during the following twenty-four hours. The patient's cardiovascular system on admission showed nothing abnormal, nor was there anything to indicate the likelihood of the severe reaction induced by the drug. Those authors quote Myerson and Ritvo (1936), who reported a severe reaction with collapse in one of their patients. Myerson, Loman, and Dameshek (1936), recording the results of administering 9 to 50 mg. of benzedrine subcutaneously to eighteen mental patients, state that "slight cardiac arrhythmia appeared in four cases. This was either of the sinus type or due to extrasystoles." Their intensive investigations demonstrated marked effects on the cardiovascular system and included a variable rise in the red and white blood counts without change in cell volume or haemoglobin content. Anderson and Scott conclude that until more precise knowledge of the cardiological effects of benzedrine are obtained caution should be exercised in the administration of doses of 10 to 20 mg. or more, particularly in elderly subjects and because detailed cardiological investigation of the effects of the drug appears desirable.

In an annotation on Anderson and Scott's report the *Lancet*, in the same number, comments: "If benzedrine does all that is claimed for it already, it is pretty certain, if used repeatedly, to produce some undesirable effects as well." That journal also referred to Myerson, Loman, and Dameshek (1936a), who mention a mysterious and astonishing polycythaemia—ten million red cells per c.mm.—produced on one or two patients by a daily dose of 40 mg. for ten days.

J. H. Fisher (1937), referred to the article of Anderson and Scott. The effect of benzedrine on normal persons was investigated at the Southend-on-Sea General Hospital on eight members of the resident staff. All of them showed a moderate rise of blood pressure, which returned to normal after four hours. The pulse rate in the majority of cases showed a slight increase after half an hour, but later was slowed in all individuals, and was slowest one and a half to two hours afterwards, when the blood pressure was highest. The slow rate while sitting was very unstable, for the least exertion caused a great increase. The only unpleasant feelings noted were by two individuals who on standing up had a transient feeling of faintness. The pulse rate in both had suddenly increased to about 130. The euphoria was well marked in all, and after one and a half hours' conversation was at a maximum. The drug was taken in a 30 or 40 mg. dose by the mouth at 8 p.m., and its effects on sleep were well demonstrated. The amount of sleep varied from two to three hours to none at all.

D. M. O'Connor (1937) reported a case where a striking fall of blood pressure and apparent sphincter spasm followed the administration of this drug in ordinary doses over seven weeks. S. Levy Simpson (1937) in a comment on an annotation in this *Journal* (1936, 2, 1204), where it was stated that the drug also caused a rise in the red and white blood counts, referred to some experiments made by him and B. H. E. Cadness on guinea-pigs (1936) from which they concluded that "ephedrine probably causes extrusions into the circulation of erythrocytes, leucocytes, and platelets from the storage and haemopoietic centres, including the bone marrow." In addition Simpson mentioned that the sphincter disturbance described by O'Connor was also a part of the toxicology of ephedrine.

Sargant and Blackburn (1936) investigated the effect of benzedrine on the intelligence test scores of a large group of patients at the Maudsley Hospital with successful results. No ill effects of their experiments are recorded, except in the case of a young man suffering from a depressive state with anxiety features. He complained of very unpleasant subjective symptoms, an increase of palpitation, and sweating, yet actually he showed a large rise on retesting.

In a recent annotation (1937) the *Lancet* refers to the investigation of Davidoff and Reifenstein (1936), who reported the effects of a ten to fourteen days' course of benzedrine on normal subjects, and on several groups of psychotic patients. The manifestations observed both subjectively and objectively were extraordinarily numerous and varied. Five of the ten normal subjects developed a state of irritable restlessness which they did not relish, and from the case reports it was evident that the increase of activity and efficiency sometimes involved a dangerous degree of disrespectfulness to superior officers on telephones. Solomon, Mitchell, and Prinzmetal (1937) have produced a fair case for its beneficial effect in post-encephalitic Parkinsonism. They found, by contrast, that the drug was of no use in arteriosclerotic Parkinsonism or in psychotic patients with continuous asthenia, and out of their large experience they join other authors in giving warnings against its indiscriminate use. The *Lancet* infers that caution is clearly advisable, especially in the administration of the drug to normal or relatively normal people, as distinct from those with chronic or incurable disorders.

Case Report

The patient was a robust young man of 26 who had previously enjoyed good health and had suffered from no important illness. He was a pharmaceutical student, and was preparing for the final examination. He had seen articles in the lay press on the action of benzedrine, and learnt that the drug was recommended in the medical press for its stimulant effect on the nervous system, and in particular that it had been found valuable in preparation for examinations. A bottle containing fifty tablets of benzedrine, each containing 10 mg. of the drug, was obtained from a local chemist. From June 15 to 20 last he took two tablets each day, and at first felt no ill effects. On the contrary, he had a marked feeling of well-being and was mentally more efficient, and was more talkative for the first three days. Afterwards he experienced some dryness of the mouth, thirst, and occasional headaches. He worked hard on these days, and remained up until 2 a.m.; sleep afterwards was light, and he awoke easily at 7 a.m., his usual hour. On June 19 he was noticed to be pale, which was attributed to hard study; his colour was usually very good.

The written portion of his examination was held in Cardiff on June 22, 23, and 24, and on each of these days he took only one tablet after breakfast, as he had to travel in daily from a distant country town. Throughout the first part of the examination he had "throbbing headaches" to such an extent that his papers "suffered badly." At this time no

suspicion of any harmful effect from the benzedrine occurred to him. No tablets were taken from June 25 to 28, and sleep even on these days was very restless. On each of the following four days one tablet was taken, and he travelled to London on June 30 for the practical part of the examination, which lasted three days. Severe headaches were again felt daily, and sleep was poor and restless. He returned home by a night train in the early morning of July 3 and, despite a feeling of utter weariness, was unable to sleep during the journey of six hours. At home he was observed to be very pale, and he complained of severe headache and giddiness, thirst, and a dry mouth. Although feeling thoroughly exhausted he was fully awake and unable to sleep.

In the early afternoon of the same day palpitation and a feeling of faintness supervened. He was given a small amount of brandy, when he improved and dozed for a few hours. He became restless again and began to vomit, and suddenly collapsed. The patient was seen at once by Dr. Milne, who found him unconscious and in a severe state of collapse. The pulse was extremely weak, rapid, and irregular, the pupils were dilated, and the skin was cold and moist: he was critically ill for one hour. Vomiting was profuse and of a projectile character for about thirty minutes. He responded fairly quickly to the usual measures of stimulation. Sleeplessness and restlessness were severe for the following three days, despite the use of simple sedatives. Gradual and continuous recovery then ensued, and he is now almost well again. There was no diarrhoea, and constipation was troublesome during the worst stage of his illness. Micturition was normal, except for being more frequent as a result of taking increased fluid for thirst. No haemorrhages occurred throughout the whole course of the illness.

Blood films were examined by Dr. Phillips on July 5 and a slight anisocytosis was the only qualitative change, apart from the poverty of the red cells in haemoglobin.

I saw him in consultation on July 9 and found him to be well nourished but very pale. No retinal or cutaneous haemorrhages were present, and no jaundice. There was slight general enlargement of the heart and fairly natural sounds, except for a haemic bruit in the pulmonary area. The pulse rate was 84, with regular rhythm; and the blood pressure 124 mm. Hg systolic and 50 mm. diastolic. The other systems were healthy, and the liver and spleen not palpable. The urine was normal. Unfortunately, a complete blood examination was impossible on that day. The haemoglobin, however, was 40 per cent., and some films showed much the same qualitative change as in the previous examination. The appearance of the patient corresponded with a red cell count of about two millions.

A full blood count was made a week later, when he was found to have improved in health as a result of the administration of full doses of ferri et ammon. cit. The result was as follows: Red blood corpuscles, 3,080,000 per c.mm.; haemoglobin, 56 per cent.; colour index, 0.9; white blood corpuscles, 5,400 per c.mm. The qualitative change was a little more marked than at my previous examination, and many of the red blood cells now showed polychromasia. No nucleated forms were seen, but there were a few myelocytes.

I saw him again on August 1, when he had improved still further. He was much less pale, and said that he felt almost well again. He was free from headaches, and sleep was good.

Another blood count was now done, with this result: Red blood corpuscles, 4,940,000 per c.mm.; haemoglobin, 94 per cent.; colour index, 0.9; white blood corpuscles, 6,800 per c.mm. The red blood cells were well stained and showed only slight variation in size. No polychromatic staining was seen. The white blood cells were present in normal proportions, but there were no abnormal cells.

Conclusion

A case of acute aplastic anaemia following the self-administration of benzedrine is described. The total amount taken was 190 mg. in the course of nineteen days. Severe cardiovascular collapse occurred the day after the last dose was taken. Gradual recovery ensued, with restoration to normal health. The patient told me that the drug was being rather much used by students preparing for examinations. It is evident that the sale of this drug should now be strictly controlled by including it in the Schedule of Poisons.

I am much indebted to Drs. R. Baird Milne and Robert J. Phillips for their help in preparing this report.

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PERNICIOUS ANAEMIA WITH DIABETES MELLITUS

BY

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Though the combination of diabetes and pernicious anaemia is well recognized it is sufficiently unusual to merit study. The following case reports are illustrative.

Case I

A carpenter and joiner, aged 43, was known to suffer from pernicious anaemia with achlorhydria. He first came to hospital in July, 1936, when his blood count showed: haemoglobin, 52 per cent.; red cells, 1,900,000 per c.mm.; colour index, 1.3; white cells, 4,900; and a normal differential count. He was given pernaemon forte 4 c.cm. each fortnight and was making satisfactory progress, his blood count in February, 1937, being: haemoglobin, 95 per cent.; red cells, 4,800,000 per c.mm.; colour index, 1. For eighteen months he had been complaining of paraesthesiae of the feet, but there was no weakness, and no physical signs of cord involvement had ever been elicited. The urine had always been normal.

He was one of a family of seven, five of whom were alive and well. One sister had been admitted to hospital three months previously suffering from simple achlorhydric anaemia. Her blood count on admission was: haemoglobin, 25 per cent.; red cells, 1,600,000 per c.mm.; colour index, 0.8; white cells, 9,300; normal differential count. The gastric contents showed complete achlorhydria both to fractional and to histamine test meals, and the Wassermann reaction was negative. She was treated with blood transfusion and massive doses of iron, and was discharged, greatly improved, after three months' treatment, when the blood count was: haemoglobin, 75 per cent.; red cells, 5,000,000 per c.mm.; colour index, 0.75; white cells and differential count normal. The father had died at the age of 69 from heart trouble and dropsy; the mother was alive, aged 74, and suffered from simple goitre.

On March 16 the patient reported at the out-patient department complaining of the sudden onset of thirst and polyuria ten days previously. During this short period he had become very weak, had noticed increasing dyspnoea and giddiness on exertion, and had lost considerable weight. He was unable to eat owing to the dryness of his mouth, in spite of the fact that he was very hungry, and had found that his vision was becoming misty and his voice husky. On examination he looked ill and dazed, and he staggered slightly when walking. His temperature was 98.4° and his pulse rate 60. The physical examination was negative. There was no smell of acetone in the breath, but the urine was loaded with sugar and ketone bodies.

On admission to the ward his urine was found to contain 12 per cent. of sugar, his blood sugar was 716 mg. per 100 c.cm. (his last meal having been two hours previously), and his blood count was: haemoglobin, 80 per cent.; red cells, 3,500,000 per c.mm.; colour index, 1.4.

During the first twenty-four hours in hospital he received 240 units of insulin and 240 grammes of glucose. Thereafter he was treated with a diet containing 140 grammes of carbohydrate and 50 units of insulin daily; he also received 2 c.cm. of campolin every other day. Subsequently it was found possible to reduce the daily amount of insulin in a step-like manner until six weeks later his urine remained sugar- and acetone-free without insulin, and his sugar tolerance was within normal limits. He was discharged on May 4 with a blood count of: haemoglobin, 82 per cent.; red cells, 3,960,000 per c.mm.; colour index, 1.03. He was feeling remarkably well, and had put on one stone in weight.

While he was in hospital it was found that the gastric contents contained no free hydrochloric acid during a histamine test meal. Blood examination showed a sedimentation rate of 27 mm. in one hour (Wintrobe's method); haematocrit test 40 per cent.; corrected sedimentation rate 19 mm.; cell volume index 1.06; plasma cholesterol 164 mg. per 100 c.cm.; Wassermann reaction negative. The increased sedimentation rate remained unexplained.

The second case is less clear-cut, in that the condition of the patient whilst in hospital provided no opportunity for performing a test meal. The presence of achlorhydria, therefore, was never proved. Nor was any family history available. There are, however, enough facts to make the case worth recording if only to illustrate the onset of the diseases in the reverse order.

Case II

A retired nurse, aged 70, was known to have been a mild diabetic for at least a year. She had been in the habit of taking 20 units of insulin by injection night and morning, and of living on a slightly reduced carbohydrate diet. On this regime she had maintained comparatively good health, and her urine had only occasionally shown slight reduction of Benedict's solution.

On October 3, 1932, she was admitted to hospital complaining of increasing pallor, glycosuria, and thirst during the previous three weeks. She looked ill, and was dull and drowsy. Her mucous membranes were pale, her pulse 100 and weak, and her respirations rapid. A blood count showed: haemoglobin, 34 per cent.; red cells, 1,480,000 per c.mm.; colour index, 1.2; white cells, 3,600; and a normal differential count. The red cells showed anisocytosis and poikilocytosis, and both normoblasts and megaloblasts were seen. The average diameter of red cells by Pijper's method was 8.6 μ, and the Price-Jones curve showed the typical shift to the right. The blood sugar was 500 mg. per 100 c.cm.; the urine contained 3 per cent. of sugar and much diacetic acid.

During the twenty-four hours following her admission she received in all 170 units of insulin and 170 grammes of sugar. She was taking fluids and passing urine well, and looked and felt better. Considerable difficulty was experienced in stabilizing her diabetes, and her blood sugar varied rapidly between 60 and 370 mg. per 100 c.cm. During the next fourteen days, however, she was given 30 units of insulin daily, and her general condition improved considerably.

Shortly after admission she received a blood transfusion of 100 c.cm. and half a pint of gum saline intravenously, and thereafter one tube of liver extract and one phial of ventriculin were given daily. Three weeks after her admission her blood count was: haemoglobin, 40 per cent.; red cells, 1,315,000 per c.mm.; colour index, 1.5; and white cells 9,400.

Twenty-three days after admission she suddenly became ill with pulmonary congestion and died a few hours later.

Discussion

That diabetes and pernicious anaemia are sometimes found in association has often been remarked, and inquiry into the subject covers a period of twenty-six years. The best reviews of published cases are by Root in 1931 and again in 1933, and by Watson in 1933. Since then, however, few authors have written about it—Benjamin in 1934, Jolliffe, Brandaleone, and Most in 1935, and one or two more.

The first published report was by Parkinson as recently as 1910. He described the case of a man, aged 49, with pernicious anaemia who developed glycosuria, ketosis, and coma, terminating in death. At necropsy the characteristic findings of pernicious anaemia were disclosed. The pancreas was normal macroscopically and microscopically. Chvostek in 1918 was the next to describe a patient with both conditions, and in 1923 Giffen and Bowler alluded to two more in a paper reviewing the diseases that might be associated with pernicious anaemia. Two further cases were reported by Adams in 1925.

In 1931 Root made the first collection, which consisted of forty-eight cases: other reports followed, and in 1933 he collected another series of thirty-one. In the same year Watson added three more case histories and published an excellent review with a summary of the literature, and it is probable that at the time of the publication of this paper the total number of cases of combined diabetes and pernicious anaemia on record was seventy-nine.

That two so entirely different conditions should often be found in association is most remarkable, and frequent attempts have been made to discover a relation between them. The task, however, has not been easy, partly because of the difficulty of deciding which is the primary disease and which the complicating one, and partly because the incidence of the combination varies in different series of cases of diabetes and pernicious anaemia. There are, however, certain conditions common to both which might predispose to their simultaneous occurrence; and certain facts are known about alterations in carbohydrate metabolism in anaemic states which must also be taken into consideration.

The Primary Disease and the Complicating Disease

A point about which there is no clarity is whether the diabetes should be considered as a complication of the anaemia or vice versa. In Case I above the pernicious anaemia was known to have preceded the diabetes; in Case II it was probably the reverse; and in the majority of reported cases it was the diabetes that developed first. In two of Watson's cases the time of onset of the pernicious anaemia could not be stated with certainty as paraesthesiae were noted in the history before anaemia was suspected, and mild anaemia might have been present before the diabetes developed or before either disease was discovered. In one at least of Root's cases achlorhydria was found before any sign of anaemia.

Frequency

Some idea of the frequency of the association can be gained from various writers, but it varies in different series.

1. Watson found that in 949 diabetic patients of 25 years of age and over admitted to the Deaconess Hospital during the twelve months ending June 1, 1932, ten cases of pernicious anaemia occurred (1.05 per cent.).

2. Murphy and Moxon in 827 diabetics saw three cases of pernicious anaemia (0.36 per cent.).

3. In 370 cases of pernicious anaemia Wilkinson had four diabetics (1.05 per cent.).

4. The association was found in fifteen in a combined series of 2,461 patients with pernicious anaemia (0.61 per cent.) (Adams, Giffen and Bowler, Goudsmit, Joslin, Murphy and Moxon, Wright, and Wilkinson).

These figures are certainly suggestive of something more than chance, but no more than suggestive.

Factors Predisposing to Combined Incidence

Root has indicated some factors which may predispose to a more frequent combined incidence.

1. Achlorhydria is of fundamental significance in pernicious anaemia and often occurs in diabetes. The latter fact is perhaps not fully appreciated, but according to evidence adduced by Bowen and Aaron, Curtis, Ingram, Mason, Rabinowitch *et al.*, and Wohl, diminished or absent gastric hydrochloric acid occurs in 30 to 40 per cent. of diabetics. Hartfall found three diabetics among 336 cases of achlorhydria. This might prove to be a common aetiological basis.

2. The longer duration of life brought about by improved treatment might render a sufferer from one disease more likely to contract the other. It appears that the tendency to the development of defective gastric secretion increases with the duration of the diabetes and with the age of the patient. Since, moreover, the diabetes antedates the pernicious anaemia in most of the cases there appears to be some justification for regarding diabetics, in virtue of their prolonged existence, as more prone to develop pernicious anaemia.

3. The age factor.—No case has been observed in a young person. All occurred during the age period which is usual for the onset of pernicious anaemia and which includes the age most common for the development of diabetes.

4. *Hereditary tendencies.—The* familial tendency is well recognized in both diseases, and in one of the above reports the occurrence of a sister with achlorhydria and microcytic anaemia is a case in point.

Though these factors are common to both diseases, especially where diabetes is the primary condition, there still remain those cases where pernicious anaemia was the first to develop. In the latter circumstance certain changes in carbohydrate metabolism that are known to occur in anaemia seem more likely to be the agents which lead to the double pathology.

Conditions Favouring Development of Diabetes in Pernicious Anaemia

Davidson and Gulland, for instance, found some evidence that the achlorhydric stomach of pernicious anaemia empties rapidly, and in 1929 MacCullum suggested a hormone in the intestinal mucosa, formed under the stimulus of sugar, which controls the secretion of insulin. Since pernicious anaemia is a deficiency disease, other deficiencies of this nature possibly coexist.

Again, disturbance of sugar metabolism has many times been reported as a result of anaemia. As early as 1877 Claude Bernard produced hyperglycaemia in dogs by repeated bleedings. Strauss reported an increased excretion of sugar in diabetics following venesection. Isaac and Hendrick found the blood sugar raised in pernicious anaemia, and Johnsson thought that the height of the blood sugar was related to the severity of the anaemia. In the same year, however, Blumenthal and Neuburger could find no definitely characteristic change and no connexion between the severity of the anaemia and the blood-sugar level. If it is true that changes in sugar metabolism of this nature occur as a result of anaemia, then it is quite conceivable that this fact has some bearing on the question of diabetes complicating pernicious anaemia. But a criticism that immediately comes to mind is that there is no evidence that the diabetes in all these cases developed during an anaemic phase. It certainly did not in the one reported above.

Finally, in 1929 Bloiner and Murphy announced a blood-sugar-lowering effect following the oral administration of liver, though here again there has been no confirmation by other workers. Recently, however, Jolliffe, Brandaleone, and Most have reported changes in carbohydrate tolerance produced by high protein diets in two cases with the combined diseases.

Evidence, therefore, is contradictory, and no adequate explanation has yet been offered regarding on the one hand the mechanism of production of high blood sugar and abnormal sugar tolerance in pernicious anaemia, nor on the other the occasional occurrence of pernicious anaemia complicating diabetes. It is true that there is a certain amount of common ground between them, yet it appears that the only rational attitude is the one adopted by most authors—namely, that the phenomenon is a chance combination.

Summary

1. Two cases of combined pernicious anaemia and diabetes mellitus are described.

2. The history of knowledge concerning this association of diseases is given and the theories that have been put forward in explanation are discussed.

3. From a study of the literature no actual proof of aetiological relation is available.

My thanks are due to Dr. E. Rivaz Hunt, Dr. G. Lyon Smith, and Dr. E. D. Scott for permission to publish notes on the above cases.

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Clinical Memoranda

A Case of Pubertas Praecox

The extreme rarity of this condition and the scantiness of the literature on the subject have led to its frequent confusion with adrenal virilism or pseudo-hermaphroditism.

The patient is a girl aged 6 years 10 months. She is the first of a family of three. The mother was quite well during pregnancy, but the labour was prolonged and forceps had to be used. The birth weight was 10 lb. The child had pneumonia at 3 years, followed by otitis media. Paracentesis of both drums was performed. Since then she has had otorrhoea on and off. There have been no other childish diseases. The family history shows nothing abnormal. Her sister is 4½ years and her brother 3½ years old; both are normal.

The child's progress since birth has been precocious. The first tooth erupted at 4 months; she walked quite well at 11 months, and looked like a child of 3 years at 18 months. Her appetite has always been voracious. At 3½ years of age she began to menstruate. Menstruation occurred four times in a year, each time lasting one or two days. There was no dysmenorrhoea. There was no menstrual period between 4½ and 5½ years of age, but menstruation occurred again at 5 years 9 months. Another year passed before the next period at 6 years 9 months. This time it lasted three days, with headache and some lower abdominal pain.

The child has been under observation for the past fifteen months, and during that period she has suffered from several attacks of pyrexia up to 103° F., which were attributed to a chill. There has been headache during these attacks, but no vomiting. Headache has been a feature of the case, especially when the child indulges in strenuous exercise—for example, drill at school.

PHYSICAL EXAMINATION

Her appearance is that of a well-developed girl of 12 to 14 years. There is marked premature development of the feminine form, with enlargement of the mammary glands, female configuration of the hips, prominence of the mons veneris, on which there is some fine dark hair. The external genitals are of the female type with no enlargement of the clitoris. The abdomen protrudes and there is some lordosis.



The following are some of her measurements: Height, 53¾ inches—that is, she is eleven inches taller than a normal child of her age. Weight, 74 lb. (26 lb. heavier than the normal child). Head, 21 inches; chest (over the breasts), 26¼ inches; abdomen, 24 inches; and hips (over greater trochanters), 28½ inches. The child has gained 2½ inches in height and 10 lb. in weight during the last fifteen months.

Examination showed the following results: Heart, normal, blood pressure, 115/60; central nervous system, normal; eye movement normal in all directions; optic disks, normal. The liver, spleen, and kidneys were not palpable, and there was no appreciable disease. The cervix uteri is well developed and the uterus, on bimanual examination, was found to be almost adult size. No enlargement of the uterine appendages could be detected. The urine, which was acid, had a specific gravity of 1015 and contained no albumin or sugar. The skull was radiographed with especial reference to the pineal gland, but proved normal.

There is nothing very remarkable in her personality, except that her ideas are rather more mature than those of a child of her age. Her mental age is normal: there is certainly no evidence of retarded mental function.

DISCUSSION

It might not be out of place here to make a few remarks on the factors differentiating this condition from adrenal virilism. In adrenal virilism occurring in girls before puberty the configuration of the body approaches the male type: the voice deepens, hirsuties is a feature of the disease, and the hair is of male distribution. The external genital organs show precocious development with marked hypertrophy of the clitoris. The uterus is not enlarged and there is no menstrual bleeding. The mammary glands are not developed—in fact, failure of their development is more usual.

The most likely diagnosis in this case would be pineal syndrome due to neoplasm or hyperplasia of the pineal gland.

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Agranulocytic Angina following Bismuth Injections in a Case of Syphilis

The interesting features of this case, which closely resembles reported cases of agranulocytosis, are its association with bismuth (only 8 grains in all were given) which in itself has a tendency to produce stomatitis, and possibly with syphilis. The absence, however, of any blue pigmentation in the mouth, of casts, or of any appreciable amount of albumin in the urine, and the sudden onset of the condition, differentiate the case from one of simple bismuth poisoning, of which I have seen several instances, but it suggests that perhaps bismuth may be able to precipitate agranulocytosis in the same way as does amidopyrine, which was not a factor in this case.

CASE REPORT

The patient, a native male adult employed on the Roan Antelope Copper Mine, was admitted to hospital on account of infective syphilis, having a primary chancre with a 4 plus Kahn reaction. His urine and gums, examined before treatment began, were normal, and he was otherwise healthy.

On January 16, 1936, 10 minims of bismostab (Boots), containing 2 grains of metallic bismuth in suspension, were injected into the muscles of the buttocks, the bottle of bismostab being well shaken up before drawing off the dose, and a needle first inserted alone into the muscle to avoid the possibility of injecting into the vein. The same dose was injected similarly at weekly intervals for three weeks, no additional treatment being given. Urine taken at the time of the last injection, February 7, was normal, and the gums then showed no trace of pigmentation or ulceration.

His temperature, which for the four previous weeks had not risen above normal, suddenly rose on February 12 to 105° F., and was maintained between 100° and 105° F. till his death. At the onset he complained only of a sore throat and a dry cough, and on examination showed some enlargement of the tonsils with slight general injection of the pharynx. A relative lymphocytosis was noted in a blood smear taken at this time

On the 14th small superficial ulcers were observed along the outer margin of the right gums with no associated hyperaemia, and after a further two days these had developed into extensive yellowish-white sloughs. No pigmentation was present and there was still no hyperaemia. A blood examination now revealed a complete absence of neutrophils and eosinophils. The haemoglobin was 81 per cent., the colour index 0.96, and the erythrocytes 4,290,000 per c.mm. The leucocytes numbered 3,800 per c.mm., 83 per cent. being lymphocytes and 17 per cent. monocytes. His urine was acid, with a specific gravity of 1026, and contained only a trace of albumin.

The following day, February 17, the sloughs were more extensive and the patient's general condition worse; his tongue was coated with a dry brown fur, and a marked icteric tinting of the conjunctiva was noted. A blood count now showed: haemoglobin 70 per cent.; colour index 0.97; erythrocytes 3,600,000—some anisocytosis present; leucocytes 2,200 per c.mm. (monocytes 21 per cent. and lymphocytes 79 per cent.). Neutrophils and eosinophils were still absent. On February 18 a few neutrophils (stab forms) and eosinophils appeared in the blood. The haemoglobin was 70 per cent., the colour index 1.0, and the erythrocytes 3,560,000 per c.mm. The leucocytes numbered 2,300 per c.mm., and consisted of neutrophils (stab form) 1 per cent., eosinophils 1 per cent., monocytes 18 per cent., and lymphocytes 80 per cent.

The patient died on February 20, eight days after the onset of his illness. A post-mortem examination showed marked pallor of the bone marrow at the ends of the tibia and femur. The liver and spleen were enlarged, but firm and of normal appearance on cutting. This enlargement was probably due to chronic malaria. The remaining organs appeared normal apart from a yellow coloration due to the jaundice.

No specific treatment had been used in this case, as no nucleic acid preparation was obtainable locally, and the patient died before any could be procured. Mouth washes of potassium chlorate and carbolic acid and, later, swabbing of the gums with hydrogen peroxide were employed, along with a daily saline aperient.

I should like to express my gratitude to Mr. R. B. English of Luanshya for laboratory investigations, the most important feature in the diagnosis.

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Skin Diphtheria Associated with Clinical Diphtheria and Scarlet Fever

I think that the case recorded below may have some interest from the point of view of both clinical and preventive medicine.

CLINICAL RECORD

Two little boys contracted scarlet fever and were sent to hospital. Four days after they had been allowed home their father reported that two other children were ill, and that one of them had a rash. These children also were found to have scarlet fever, and were sent to hospital. The father complained casually that he himself had sore throat, headache, and loss of appetite, and had not been able to sleep. When examined he had a circular patch of membrane on an inflamed tonsil, a temperature of 100°, and a pulse of 120. He was sent to bed and a dry swab was taken. The membrane was loosely adherent, and there were no bleeding spots where it had been detached by the swab. Serum was at first withheld pending the result of examination of the swab. Next day, however, the membrane had re-formed and had spread to the opposite tonsil and involved the uvula. The patient felt and looked much more ill, and 12,000 units of antitoxin were given intramuscularly. The following day the throat had cleared up considerably, and the patient was much improved, having had a comfortable night.

One of the children who had been discharged after scarlet-fever was noticed to have a moist dermatitis at the back of the ear, and further search revealed a similar patch in the axilla. A dry swab was taken from the axilla, and a report asked for as to the existence of diphtheria bacilli and for haemolytic streptococci.

BACTERIOLOGICAL REPORT

The reports on the swabs were as follows:

Child's Axilla.—Bacilli similar to *B. diphtheriae*, both in morphological and in staining properties, were observed. A few isolated cocci were also present.

Father's Throat.—Organisms similar to *B. diphtheriae* in morphology were present in culture from this swab. Some of their staining characteristics were not quite typical, but they must be regarded with suspicion. A blood-agar plate culture showed numerous streptococci of the α-haemolytic type, but only an occasional β-haemolytic colony. Scarlet fever streptococci conform to the latter type in appearance, but one would have expected a much higher yield of these organisms from a clinical case of scarlet fever.

COMMENTARY

In view of the clinical behaviour of the case and the speedy response to serum treatment there would appear to be no reasonable doubt but that the case was one of diphtheria.

Skin diphtheria has been reported occasionally, but its occurrence does not seem to have attracted the notice it deserves. Over twenty years ago Dr. J. D. Rolleston (1916) recorded the case of a boy with multiple whitlows which had existed for over two months but which healed within a week after a positive swab had been found and serum given. Dr. C. O. Stallybrass (1936), influenced, he says, by observation of Professor Bu's findings in Copenhagen, suggested that school doctors and skin specialists should take swabs at random in cases of "*impetigo*" and facial "eczema," and the result was that "we were rewarded by a plentiful crop of cases of nasal diphtheria."

Damon in 1934 reported a case of pustular eruption on the face, which spread rapidly to chin and forehead and resembled impetigo. The temperature varied from 99.8° to 101° F. and the pulse from 108 to 130. A pure culture of diphtheria bacilli of a virulent type was found. The patient improved and got well immediately antitoxin was given. It is noteworthy that Damon reports that no bacilli could be isolated from the throat or posterior nares although repeated cultures were made.

It may well be that those epidemics of impetigo (1914) with a high mortality reported at times were in reality outbreaks of skin diphtheria. That only streptococci and staphylococci were isolated hardly excludes the possibility of diphtheria in view of the very diverse experiences of the value of the swab in diagnosis. In this connexion readers will recall a prolonged discussion on the swab in the columns of this *Journal* about two years ago.

It is of interest to note that the skin lesion now reported cleared up rapidly on the application of ung. hydrarg. nit. dil.—one of the commonest ointments used in impetigo.

The part played by skin diphtheria in producing adult and herd immunity, and in starting epidemics of diphtheria, may be worthy of further study.

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Reviews

ENCYCLOPAEDIA OF MEDICAL PRACTICE VOL. IV

The British Encyclopaedia of Medical Practice, including Medicine, Surgery, Obstetrics, Gynaecology, and other Subjects. Volume 4, *Diarrhoea to Endoscopy of the Rectum.* Under the general Editorship of Sir Humphry Rolleston, Bt., G.C.V.O., M.D. (Pp. 600; illustrated. 35s. net.) London: Butterworth and Co. (Publishers), Ltd. 1937.

The volumes of the new Encyclopaedia of British medicine continue to appear at regular intervals, the fourth one of the series, now before us, covering the subjects diarrhoea–endoscopy. Prominent among these is the consideration of dislocations, fractures, and associated injuries admirably set out for the help of the general practitioner by Professor G. R. Girdlestone. Since the war, deriving from the multiple injuries of gunshot wounds and the subsequent experience with road accidents, the modern technique in the treatment of fractures has reached a high standard. Professor Girdlestone approaches the subject by a brief reference to first aid, discusses the general principles of diagnosis, reduction and fixation apparatus, and then deals regionally with particular fractures and dislocations. From the standpoint of efficiency there is much to be said for getting the patient as soon as possible to a hospital with a fracture service, but the practitioner who is called in to render first aid in case of accident must undertake not only the support of the patient but must be trained to deal with the situation so as to minimize further damage to tissues and to place the injured part in such a position as rapidly to facilitate repair. In a compact discussion of the subject Professor Girdlestone has in seventy pages managed to get in the essentials, and this section should be most helpful.

Among the disorders of digestion dealt with are the general causes and clinical aspects of diarrhoea by Sir Arthur Hurst, diarrhoea occurring in infancy and childhood by Dr. R. W. B. Ellis, and tropical forms of diarrhoea associated with flagellate infections and so-called hill diarrhoea by Dr. Hamilton Fairley. The aetiology of infantile summer diarrhoea in England appears still to be obscure. An infective organism has been demonstrated in far fewer cases than in the United States, on the Continent, or in Australia, and physicians are led to postulate environmental, dietetic, or allergic states. It should be possible to differentiate further the clinical aspects of these groups, so that indications for treatment may be more readily set out. Approaching the subject from the other side, Major-General Perry and Lieut.-Colonel Biggam are on more solid ground in dealing with the aetiology of bacillary dysentery. Here the bacteriology has largely been worked out, and the clinical aspects of the various groups are becoming differentiated. There are, however, still considerable difficulties in producing specific sera for therapy, except in the case of the Shiga bacillus, for which an effective antitoxin can be prepared. A full treatment of the subject of diverticulosis and diverticulitis of the colon by Sir Edmund Spriggs and Mr. O. A. Marxer, an introduction to dyspepsia by Dr. Robert Hutchison, and a discussion of the special characters of carbohydrate intestinal dyspepsia by Sir Arthur Hurst complete a highly instructive series of articles on disorders of digestion.

Dr. Comrie introduces the subject of diet in treatment with a general statement of the food requirements of the body under physiological conditions, and discusses the various systems of diet advocated or adopted. These subjects are so much talked of by patients that practitioners will be grateful for the succinct accounts of diets and the indications for their use, together with material for refuting false or exaggerated claims. In a scholarly article Dr. Helen Mackay brings forward the main facts of diseases due to dietetic deficiency. Throughout the world dietetic deficiencies are prevalent, mostly from necessity but sometimes through ignorance. Certain deficiencies are known to be common in British diets, iron, for instance, and probably often calcium, phosphorus, and vitamin D in many parts of the community. Besides gross disease due to deficiency there is probably much disability or ill-health obscurely brought about in this way.

An interesting series deals with electricity and medicine. Dr. Cumberbatch discusses electrodiagnosis, and the special form of treatment with diathermy; and Dr. Heald electrotherapy in general. Emphysema of the lungs and empyema by Dr. R. V. Christie and Mr. Tudor Edwards respectively represent the medical and surgical aspects of respiratory disease in this volume, while Dr. Christie also writes a good study of dyspnoea. Other disabilities are dysphagia and dysphonia from the pen of Mr. Lionel Colledge, who contributes the section on ear diseases; dysmenorrhoea and dyspareunia by Mr. Eardley Holland, whose understanding articles will be very helpful to practitioners so often called to deal with these matters; while the clinical aspects of drug eruptions will be less puzzling when Dr. R. T. Brain's contribution to the subject is studied. Nervous diseases include disseminated sclerosis by Drs. F. M. R. Walshe and J. G. Greenfield, diplopia by Mr. P. G. Doyne, and encephalomyelitis and epidemic encephalitis by Dr. W. G. Wyllie.

Dr. Gardiner Hill's account of dwarfism and infantilism is well documented and up to date, and the disorders of the uterine mucous membrane are discussed from the pathological and clinical aspects by Professor M. J. Stewart and Drs. A. M. Claye and James Young. Other articles contribute to a very useful volume. The editing and printing are praiseworthy, but a comparison of radiographs would point to the desirability, for clarity and precision, of using special paper.

CHRONIC RHEUMATISM

Chronic Rheumatic Diseases. Edited by C. W. Buckley, M.D., F.R.C.P. Being the third Annual Report of the British Committee on Chronic Rheumatic Diseases appointed by the Royal College of Physicians. No. 3. (Pp. 142. 10s. 6d. net.) London: H. K. Lewis and Co. 1937.

The third volume of the Reports on Chronic Rheumatic Diseases is welcome, for, as Professor Fraser says in the foreword, this and the first two volumes offer the student as complete a survey of recent work on chronic rheumatism as he is likely to find anywhere. In the opening article Professor Okell throws grave doubt on the fundamental justification for vaccine therapy in these diseases—a view that may be regarded as unduly pessimistic by some but is a seasonable corrective to those who are wont to regard the rheumatic patient as a never sufficiently filled receptacle for injections. Professor Learmonth writes a review of recent work on sympathectomy in rheumatoid arthritis, and points out that in carefully selected cases it may be a useful symptomatic measure for the relief of pain but that it should never be regarded as in any sense a specific remedy for the disease.

Kahlmeter gives a most useful review of his own and others' experience of *x*-ray therapy and thinks highly of its use, especially in gonorrhoeal and septic arthritis, in bursitis, and tendinitis. Race gives a valuable survey of the theories advanced as to deficiency of vitamins as a causative agency in arthritis. In the rheumatoid type a deficiency of A and C and possibly of B_2 is not uncommon, but whether this deficiency is causal or not still remains non-proven. Collins describes two unusual cases of rheumatoid arthritis with a neutrophil leucopenia and enlargement of the liver and spleen, and discusses them in relation to the leucocyte counts commonly met with in chronic rheumatism.

Several critical reviews are given of recent work, of which the most valuable is that on chrysotherapy. There can be no doubt that gold properly administered is a promising and useful remedy, but still greater trial is necessary to clarify the correct dosage and suitable selection of cases, while it is obvious that this is a very dangerous weapon in inexperienced hands. Hench supplies a long review, with a full bibliography of American literature on arthritis. The most interesting feature of this is the work on pyrexial treatment of gonorrhoeal arthritis, which seems almost specific in the early stages and helpful even in later stages. Jennings draws attention to the neglected use of sodium salicylate in the treatment of gout, especially in the interval periods, when it rivals cinchophen in the power of increasing the elimination of uric acid and is much less dangerous. Finally, abstracts and reviews of the principal Continental literature of the year are supplied by Drs. Bach and Pether.

It may be complained that there is nothing very original in this report, but Sir Humphry Rolleston and his committee deserve congratulations on keeping those who are interested fully abreast of all that is happening in the domain of chronic rheumatism.

THE PSYCHOTHERAPY OF NEUROSIS

The Common Neuroses. Their Treatment by Psychotherapy. An Introduction to Psychological Treatment for Students and Practitioners. By T. A. Ross, M.D., F.R.C.P. Second edition. (Pp. 236. 10s. 6d. net.) London: E. Arnold and Co. 1937.

Dr. Ross brought out the first edition of this valuable textbook at a time when psychotherapy was comparatively little known in this country.[1] The second edition has appeared in response to a demand by the hundreds of medical men and women who have now undertaken or are undertaking this difficult and elusive work for some sort of guide to its perplexities. Seventeen years ago the author wrote in his preface that in his opinion most patients suffering from neurosis could be treated by general practitioners. It is very interesting to read that he has found no reason to change his mind. He points out, however, a fact of which no general practitioner should ever lose sight: that there is a residue which the general practitioner would be well advised not to touch. Most neurotics, he says, are not difficult to cure, but some may be made very much worse. He has therefore attempted to describe the cases which the general practitioner ought to leave alone, but urges him to contribute his share of psychotherapeutic treatment to a world which is being progressively invaded by neurosis. He has left out his original chapter on the application of the Freudian method, feeling that this subject can only be properly dealt with by a Freudian. The views Dr. Ross expressed in his first edition remain substantially the same, but he has added many examples which illustrate principles.

[1] *British Medical Journal*, 1923, 2, 327.

BONE PRODUCTION AND BONE GROWTH

The Role of Chemiotaxis in Bone Growth. By A. P. Bertwistle, M.B., Ch.B., F.R.C.S.Ed. (Pp. 59; 32 illustrations. 8s. 6d. net.) London: Henry Kimpton. 1937.

Bone production and bone growth are fascinating problems which have aroused much interest recently, and so this monograph cannot but attract attention. The author states that the object of the book is "to describe disruptive chemiotaxis, a new process to Medicine, and to lay down a law which, based on histological grounds, will be found to cover the whole field of bone pathology, viz.:—that whenever young fibrous tissue, particularly young blood vessels, come into contact with bone or a calcified deposit, new bone formation occurs." Disruptive chemiotaxis, he tells us, is a term coined to express the power of certain hard substances of attracting and drawing into themselves certain soft, living structures. We do not feel that we can congratulate the coiner on this addition to an overburdened nomenclature, while we search in vain for some new insight into the nature of the process whereby developing structures follow particular pathways in relation to their environment.

Mr. Bertwistle's little book consists of six chapters, a bibliography of some seventy-five references, and an index. It is illustrated by thirty-two figures, the majority of which are from prints of *x*-ray photographs. These are for the most part clear and well reproduced. Fig. 24, described as periosteal sarcoma, in a recent work such as this might in conformity with modern surgical pathological nomenclature be better designated osteogenic sarcoma, while some would also have preferred to see the term myeloma (p. 33) replaced by osteoclastoma. The manufacturers of "elastoplast" will be pleased to note the statement on page 32.

A real advance in our knowledge of bone pathology was made when Leriche and other observers emphasized the fact that bone density varies inversely as its blood supply, but whether anything is to be gained by applying the term disruptive chemiotaxis to the rarefaction which takes place in a bone graft is doubtful. The book contains an interesting account of the histology and development of bone, of the functions ascribed by various workers to the periosteum, and of the various views regarding ectopic bone formation.

RADIUM THERAPY

Traite Pratique de Curiethérapie. Généralités sur le Radium et sur la Curiethérapie du Cancer. By P. Degrais and A. Bellot. (Pp. 160; 36 figures. 36 fr.) Paris: J. B. Baillière et Fils. 1937.

One of the most recent additions to the literature dealing with the clinical uses of radium is the Practical Treatise on Curietherapy by Dr. Degrais and M. Bellot. The former of these writers is well known to English readers as having collaborated with the late Dr. Wickham in the first systematic treatise on radium therapy, which was published in 1908 and translated into English by Dr. S. E. Dore. The present work is to be completed in four volumes of about 150 to 180 pages each. The first deals with the physics of radioactivity, the construction and use of apparatus, the biological action of the rays, and the general principles upon which the radium treatment of malignant disease is based. It may be noted in passing that the term "curietherapy" was introduced by Degrais in 1919 to denote treatment by radium as distinct from *x* rays. Since these methods are so often combined the comprehensive term "radiotherapy" is used, especially in this country, to include both these methods of treat

The three remaining volumes of the present work will deal with the use of radium in the treatment of cancer in various situations, the gynaecological uses of radium in non-malignant conditions, and lastly with its dermatological applications. The general principles, which form the subject-matter of the first volume, are clearly and concisely set forth, while the illustrations in the sections dealing with apparatus are clear and informative. These indeed are the only illustrations in the book, and we think the authors have done wisely in omitting them from the sections on the biological actions of radiation. The histological changes set up by the action of radium or *x* rays need to be studied at first hand in the laboratory. In discussing the biological effects of radiation the authors maintain that β rays, so far from only having an indiscriminate caustic effect, have, under proper conditions of dosage, a selective action in the same way as the γ rays. For this reason they advocate the retention of β radiation in the treatment of cutaneous lesions, a matter which is to be dealt with in the concluding volume.

Judging from the first volume, we can cordially recommend this treatise as a clear and concise textbook for those training to become radiotherapists.

Notes on Books

Professor ROSCOE R. HYDE, who directs the laboratories of immunology and filterable viruses in the School of Hygiene at Johns Hopkins University, has written a small book entitled a *Laboratory Outline in Filterable Viruses* the aim of which is to guide the practical work of the student. It is divided into two parts. The first comprises those exercises designed to instruct the student in the nature and behaviour of viruses, while the second part is concerned with the histopathology of virus diseases. Presumably this book is intended primarily for those attending the course of virus study in Professor Hyde's department, and for this purpose it is probably adequate. But it is unlikely to prove of use to students elsewhere because it lacks much of the detail necessary to their instruction and guidance. So much is this so that in many places the book is little more than a syllabus of the practical exercises that the student is to carry out. In fairness to the author, however, it should be pointed out that this omission of detail is deliberate, its object being to encourage the student, under direction, to supply this for himself. The book is published in this country by Macmillan and Co. at 7s. 6d.

For the seventh edition of his *Gynaecology for Nurses and Gynaecological Nursing*, first published in 1910, Sir COMYNS BERKELEY has largely rewritten the text and in various directions brought the subject-matter up to date. He has also inserted between brackets at the end of the appropriate section the question or questions relating thereto set in the final examinations of the General Nursing Council. The publishers are Faber and Faber, and the price is 7s. 6d.

Recent developments in the treatment of tuberculosis have made it more rather than less difficult to assess correctly the part played by climatic factors. A swing of the pendulum has nowadays perhaps led to underestimation of their importance. In the little work entitled *Die klimatische Behandlung der Tuberkulose und ihre heutige Bewertung* (Berlin, Julius Springer, RM. 1.80) Professor A. BACMEISTER discusses in somewhat vague terms the beneficial effect of climate and altitude on the various forms of the disease. His arguments are not very convincing, and the main object of the paper appears to be to attract the attention of practitioners in Germany to the variety of climatological possibilities for the treatment of tuberculosis in that country.

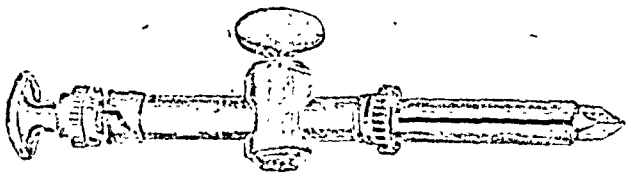
Preparations and Appliances

TROCAR AND CANNULA FOR CLOSED DRAINAGE OF CHEST

Mr. JOHN T. MORRISON, F.R.C.S. (Liverpool) writes:

The instrument about to be described was made for me by the Genito-Urinary Manufacturing Company, who have kindly provided the attached technical description. It has been gradually devised to facilitate the provision of closed intercostal drainage in cases of empyema, both acute and chronic, the advantages of which over open drainage, in the early stage of treatment at least, require no comment.

The instrument consists of a cannula provided with a stopcock and stuffing box. Two lateral slots are cut in the lower section of the cannula each 2 mm. wide and 53 mm. long. A rotary sleeve with corresponding slots is fitted over the cannula acting as a shutter. The rotary movement of the sleeve is limited by a stopping pin which brings the slots in the



cannula and those in the rotating sleeve into apposition. At the upper end of the instrument a detachable stuffing box prevents the entrance of air during withdrawal of the trocar point. When the trocar point is withdrawn until it comes to rest against the stuffing box the stopcock can be closed and the stuffing box with trocar detached from the cannula.

With local anaesthesia directed particularly to the extrapleural tissues and the edges of the ribs bounding the chosen space, the trocar and cannula is inserted through a short incision with a semi-rotatory movement till it is felt to enter the pleura, the lateral slot being closed. The trocar is now withdrawn, the stopcock shut, and the stuffing box removed. A rubber drainage tube with terminal lateral eye, previously chosen to fit the lumen of the cannula exactly, is inserted and, as the stopcock is opened, pushed down till it reaches a marked point indicating that it has reached the pleura. If there is difficulty in doing so the trocar is reinserted and the instrument pushed a little further in. The end of the drain is now opened under water to ensure that pus is flowing, and then re-closed with a suitable spigot. The sleeve on the cannula is rotated so as to open the slot and a fine bayonet-pointed needle picking up skin *en route* transfixes the drain through the opened slot. This needle may now be held firmly against the chest wall, ensuring that the drain remains exactly where placed in the chest, during withdrawal of the cannula. The needle is then removed and the drain fixed in position *secundum artem*. The object of the sleeve, which keeps the slot closed until a drain is in place to convey pus directly to the exterior, is to prevent the leakage of pus and possible entrance of air which would take place if the slot was permanently open. The illustration is approximately half scale.

CITRATED FERROUS CHLORIDE

Tabloid ferrous chloride citrated (Messrs. Burroughs Wellcome and Co.) is a ferrous preparation which is claimed to resist oxidation and deliquescence under all climatic conditions. The tabloids contain 3 grains of the compound and are sugar coated.

Ferrous salts are in many ways the most satisfactory means of administering iron. Unfortunately most ferrous preparations oxidize on prolonged exposure to air. A systematic search for a stable ferrous compound resulted in the inclusion in the *B.P. Addendum* (1936) of citrated ferrous chloride.

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USE AND ABUSE OF BENZEDRINE

Although benzedrine was discovered by Barger and Dale in 1910, this sympathomimetic substance attracted no special attention until in 1930 pharmacological investigations and animal experiments were carried out by a number of workers, among whom were Alles (who first synthesized it), Piness, Tainter, Hartung and Munch, and others. It was found that benzedrine had a pressor effect, and evidence produced by Tainter suggests that this is not due to pure sympathetic stimulation or to stimulation of muscle. An action on the higher centres of the nervous system was also observed, and the therapeutic possibilities of this have excited much interest. Following the observations that the drug could rouse animals from barbital narcosis and produce insomnia in man, Prinzmetal and Bloomberg[1] used it in the treatment of narcolepsy and found it superior to ephedrine in the prevention of attacks—work that was confirmed by Ulrich, Trapp, and Vidgoff.[2] In this country Peoples and Guttmann,[3] working at the Maudsley Hospital, gave the drug in doses of 10 to 80 mg. to depressed patients and to a group of normal persons: they claimed to demonstrate a close connexion between blood pressure and emotion, but in a later paper Guttmann and Sargant[4] observed that a patient with only a trivial alteration of blood pressure might show a pronounced psychological reaction, and vice versa. According to Peoples and Guttmann the effect on the vegetative nervous system was slight, and parallel studies on the blood sugar level showed no variations beyond normal limits. Depressed patients overcame their retardation and talked more, and some degree of euphoria was noted. These striking changes in an illness which had so far proved resistant to treatment led to a therapeutic optimism which was not altogether tempered by these authors' scientifically cautious conclusion—namely, that although the drug was a promising therapeutic ally further investigation was needed to show whether permanent administration produced adaptation, habituation, or even addiction. Nor have these questions yet been answered, although Prinzmetal and Bloomberg have given the drug daily for over a year and others for periods up to six months without ill effect. Sargant and Blackburn[5] demonstrated improved intellectual performance, as measured by intelligence tests, in psychotic patients after the administration of benzedrine. In their series of 250 cases Guttmann and Sargant found that mild depression with mental retardation is the most favourable psychological disorder for benzedrine therapy; that anxiety symptoms are intensified by the drug; but that no general statement of its effect in schizophrenia is possible owing to the variety of the clinical manifestations of the latter. They regard the optimum dosage as 10 to 30 mg. a day, with which most observers agree. Davidoff and Reifenstein,[6] in a careful clinical study of a group of psychotics, stress the need for care in the use of the drug, and consider that it is most safely administered under close in-patient observation, and that its use in out-patient practice should be undertaken with considerable caution. Benzedrine has also been given to cases of post-encephalitic Parkinsonism, and appears to be of value when drowsiness and lack of energy predominate, although it is usually most effective when prescribed in combination with scopolamine or stramonium: it abolishes or reduces the frequency of oculogyric crises.

Applied locally, benzedrine was first used to relieve congestion of the nasal mucous membrane. As was to be expected, it has also been tried in other conditions. Myerson and Ritvo,[7] for example, consider it of value in the relief of intestinal spasm, and believe that it will be of use in radiological investigation of the gastro-intestinal tract, facilitating differential diagnosis between functional and organic spasm. Benzedrine increases the gastric secretion of hydrochloric acid and of pepsin, and may be of value in differentiating functional from organic achlorhydria. It is possible that its use will be extended to other conditions—for example, in raising the blood pressure in peripheral circulatory failure. Korns and Randall[8] treated a case of orthostatic hypotension with benzedrine with satisfactory results, but it would appear that in this condition ephedrine is a more potent remedy. As with any new therapeutic remedy, the discovery of contraindications follows hard upon therapeutic trials. A number of untoward psychological and physical reactions have been observed, the former including aggressiveness and other anti-social behaviour, the intensification of homicidal and suicidal trends, and hallucinatory deliria. Among the physical consequences observed are loss of weight, skin rashes, rise and sometimes paradoxical fall of blood pressure, and such cardiovascular

[1] *J. Amer. med. Ass.*, 1935, 105, 2051.
[2] *Ann. intern. Med.*, 1936, 9, 1213.
[3] *Lancet*, 1936, 1, 1107.
[4] *British Medical Journal*, 1937, 1, 1013.
[5] *Lancet*, 1936, 2, 1385.
[6] *J. Amer. med. Ass.*, 1937, 108, 1770.
[7] *J. Amer. med. Ass.*, 1936, 107, 24.
[8] *Amer. Heart J.*, 1937, 13, 114.

events as the case of transient heart-block recorded by Anderson and Scott[9]; it may be, however, that this was an exceptional case. Benzedrine is contra-indicated in hypertension, disease of the coronary arteries, and in manic excitement. Myerson, Loman, and Dameshek[10] found an increase in the red and white cell counts, the former often by as much as one to three millions and the latter being doubled or even quadrupled. This was accompanied by a striking polymorphonuclear leucocytosis. Schube, Raskin, and Campbell[11] regard these phenomena as transitory, and did not observe any permanent alteration in the blood picture either during or long after the administration of benzedrine. In our present issue at page 615 Dr. Ivor Davies records a case of acute aplastic anaemia following self-administration. The drug appears to have no effect on the basal metabolic rate.

The chief therapeutic use of benzedrine so far has been in the treatment of narcolepsy, of post-encephalitic Parkinsonism, and of mild depression, but its application in psychiatry will probably be limited. Not only is it at best a palliative but the extreme variability of its effect in different patients and in the same patient at different times restricts its usefulness. In view of the wide range of physiological and psychological reactions which attend its administration further detailed study under controlled conditions is necessary and desirable. The unrestricted sale of this drug and its indiscriminate employment whilst the whole matter is still in the experimental stage is to be deplored. It is also regrettable that the wide publicity it has received in the Press may lead to it being taken indiscriminately by those in search of a new fillip to the flagging body or mind.

A HOSPITAL STOCK-TAKING

One person out of every thirty-seven in the British Isles is a patient in the wards of a voluntary hospital during the year, and one out of every eight an out-patient. Over a million surgical operations under a general anaesthetic are carried out in these hospitals during the twelve months. The amount expended by voluntary hospitals, more than fifteen and a half million pounds, is greater than the cost to the State of police and prisons and the execution of law and justice, greater than the amount spent by the State on old age and widows' and orphans' pensions, and more than one-third of the cost of the Army, at least as the cost stood before the recent rearmament. Such are some of the figures to be gleaned from the seventh issue of *The Hospitals Year-Book*,[12] which again comes forward with a vast amount of information so tabulated that almost any fact regarding hospitals that can be expressed in figures may be elicited at a glance or with a little search.

One of the sets of tables furnishes an analysis of the sources from which the voluntary hospitals continue to derive their income. Taking the figures for more than 1,000 hospitals, and the year 1935 (the latest year for which completed statistics are available), and calculating to the nearest £, it appears that "voluntary gifts" work out at £68 per available bed, payment for services rendered (including patients' contributions) at another £53, interest on investments at £23, and other receipts and extraordinary income bring up the total to £167. We put voluntary gifts in quotation marks because in this category are lumped workmen's contributions and payments under contributory schemes, which can hardly be described in the same way as subscriptions and donations from detached benefactors, being in fact of the nature of payment for anticipated services. A directory of contributory schemes embodied in the *Year-Book* includes nearly 400 entries, many of them, of course, quite small local affairs, but they are headed by the Hospital Saving Association with an income in 1935 of £844,000, the Birmingham Hospitals Contributory Association, with £352,500, the Sheffield and District Association of Hospital Contributors, with £163,000, and the Merseyside Hospitals Council, with £153,000. In addition there are about forty provident schemes for treatment in private wards, half of them organized under the control of individual hospitals and half of them independently. Nevertheless, despite the growing tendency to arrange hospital finance on more or less commercial lines, voluntary subscriptions and donations show little abatement. There is some falling off in London, but the provinces support their hospitals nobly, and in Scotland the stream of generosity has been greatly accelerated. In Scotland the subscriptions and donations (apart from organized workmen's schemes) have gone up by £55,000 in two years. Legacies, too, are on the upgrade. The total amount bequeathed to the hospitals of the United Kingdom in 1935—namely, £2,382,736, of which only about half a million was earmarked—was considerably above the figures of the two preceding years, and here again Scotland was conspicuous, the legacies amounting to £85,000 more than the previous year, and to £154,000 more than the figure for two years ago.

The *Year-Book* is not only a statistical compendium, but a directory, and although issued under

[9] *Lancet*, 1936, 2, 1461.
[10] *Amer. J. med. Sci.*, 1936, **192**, 560.
[11] *New Engl. J. Med.*, 1937, **216**, 922.

[12] *The Hospitals Year-Book*, 1937. Edited by R. H. P. Orde, B.A. Seventh issue. (Pp. 353.) London: Central Bureau of Hospital Information. 1937.

voluntary hospital auspices it contains a full list of municipal and public assistance hospitals, municipal maternity hospitals and homes, and county and borough mental hospitals. The outstanding event of the hospitals year has been the report of the Voluntary Hospitals Commission. The editor of the *Year-Book* (Mr. R. H. P. Orde) points out that the reforms therein advocated must be self-imposed. He writes:

"The organization which the Sankey Report urges is a self-created one: a central body representative of regional divisions. Its task, both centrally and regionally, is to collect and to distribute information, and by those persuasive powers that come from knowledge of the work to be done and from a sympathetic understanding of the views of those undertaking it, to bring about gradually and in the light of experience system and order where little or none exists at present. The organization must also possess the power of the purse. The task of bringing such an organization into being the Sankey Report places upon the shoulders of the British Hospitals Association. Time, perseverance, and common sense are demanded, and an absence of that attitude of mind which sees difficulties where none exist."

AUSTRALASIAN COLLEGE OF PHYSICIANS

The Australasian College of Physicians, which now comes into existence, has been planned to some extent on the pattern of the Royal College of Physicians of London, with variations to suit the needs of a community whose professional schools and leaders are scattered sparsely through a huge continent where means of communication are not yet fully developed. In the new Australasian College the proportion of Fellows from each State to sit on the council will be arranged in advance so as to make its governing body geographically balanced. The president will be elected by the council and not, as in London, by a comitia of all the Fellows; and the members of the college will have representation on the council. The assumption of responsibility for a qualifying examination is not contemplated: the college will have no licentiates. Its two grades will be that of membership, conferred by a board of censors after examination, or, as here, on published work; and that of fellowship, awarded to those chosen by the council year by year from among the members of more than four years' standing. Foundation Fellows will include all those recognized as teachers of medicine by the medical faculties of the universities of Australia and of New Zealand. The college will absorb the Association of Physicians of Australasia, whose members will become Foundation Fellows. It will carry on the work of that association, including the organization of an annual meeting at different centres at which scientific communications are submitted. In drawing up its constitution the new college has taken full advantage of information put at its disposal by the Royal College of Physicians of London, which last winter appointed Sir Edmund Spriggs as an emissary. His visit to Australia was followed by one to this country from Sir Charles Blackburn (Sydney), Dr. S. V. Sewell (Melbourne), Dr. L. S. Latham (Melbourne), Dr. A. W. Holmes à Court (Sydney), and Dr. E. B. Gunson (Auckland), who conferred with Lord Dawson of Penn and other colleagues at Pall Mall East. Apart from the promotion of research in clinical medicine and the dissemination of knowledge, the Australasian College will, it is hoped, serve as a meeting point for physicians and provide opportunities for discussion and common action when legislative or other measures affecting the national health arise. The first president is Sir Charles Blackburn, consulting physician to the Royal Prince Alfred Hospital, Sydney, and the vice-president Dr. S. V. Sewell, physician to the Melbourne Hospital.

TREATMENT OF MÉNIÈRE'S SYNDROME

The difficulty in treating cases of vertigo has until recent years arisen from two factors. The first of these was the lack of proper aetiological classification, and the second was the lack of effective methods of treatment. There is now a tendency to divide such cases into two main groups under the names of aural vertigo and Ménière's disease. This nomenclature can scarcely be defended on scientific grounds, but if it serves a practical end it may be justified. It is intended to differentiate between milder attacks of vertigo arising from disease or physiological disturbance in the ear and severe attacks of vertigo, vomiting, deafness, and tinnitus originating in the auditory nerve. Thus, toxic conditions such as poisoning from tea, tobacco, or even focal sepsis may be considered to produce aural vertigo, and disease in the labyrinth must be included. Where a cause can be found for the symptoms of aural vertigo by taking a careful history of the case the treatment is evident. Apart from this it has been customary to rely upon bromides and luminal, which in fact rarely do good and may aggravate the symptoms by producing drowsiness and dizziness. The suggestion of Mygind and Dederding that the attacks are due to disordered water metabolism has caused this line of investigation to be followed, and it appears that it is not so much the water as the electrolytes of sodium which are responsible. The treatment based on this is to eliminate salt from the diet and administer with each meal 45 grains of ammonium chloride, which prevents the storage of sodium. Water need not be restricted. Madelaine Brown[1] reports twelve cases of severe attacks of vertigo and vomiting in patients suffering from deafness and tinnitus which have ceased under this treatment. Ménière's disease is encountered in the absence of any evident lesion. The attacks of vomiting, vertigo, and even unconsciousness are considered by Dandy[2] to have origin in the auditory nerve, and he has shown in a recent paper that in a small percentage of cases a vascular or other lesion can be demonstrated at operation. His cases include an acoustic tumour, angioma of the cerebello-pontine angle, aneurysm of the basilar artery, and five cases in which large arterial loops produced strangulation or compression of the auditory nerve. In more than half the

[1] *J. Amer. med. Ass.*, 1937, 108, 1158.
[2] Ibid., 1937, 108, 931.

cases, however, in which the posterior fossa is exposed no pathological change is discovered, but the symptoms are entirely relieved by division of the eighth nerve. Donald Munro[3] also has reported on fourteen cases, ten treated by section of the eighth nerve, in one of which both auditory nerves were divided in order to obtain relief, and he draws attention to the physiology of the labyrinth as expounded by Rademaker. Normal labyrinthine reactions occur in response to rectilinear vertical or to rotary movements, and initiate the effort to return the head and eyes to a normal position. The tendency to overcorrection is prevented by the proper integration of the two labyrinths, which maintains a static position in space by control of postural tonus. One labyrinth alone can be adapted to accomplish this, but if both labyrinths are dead this function is lost until it is substituted by visual and proprioceptive reactions. Welti[4] has recorded the first case of total section of the eighth nerve performed in France with complete and permanent success, and Aubry and Ombredanne[5] have later also given accounts of the excellent results from partial section of the eighth nerve, cutting the vestibular portion and preserving hearing by sparing the cochlear division, as Dandy recommends. Increasing experience indicates that the operation of choice is division of the eighth nerve rather than direct surgical attacks upon the labyrinth, as these fail in about 30 per cent. of cases. It is clear, however, that treatment upon medical lines as recommended by Mygind[6] should be given a fair trial before resorting to so drastic an operation.

THE ANAEMIA OF HEPATIC CIRRHOSIS

A mild degree of anaemia and of macrocytosis are present in the majority of patients with liver disease, and in a minority both the anaemia and the macrocytosis may be severe.[7] It is not possible to explain the macrocytic anaemia of disease of the liver by jaundice, bad diet, achlorhydria, or gastro-intestinal defect, as cases occur in which all these factors can be excluded. Macrocytosis is not necessarily an indication of bone-marrow derangement, as external influences acting on the circulating red cells may alter its volume without affecting its content of haemoglobin. This swelling of the cell will result in its being less saturated with haemoglobin. The quantity of albumin in the plasma is diminished at some time in every case of chronic advanced disease of the liver,[8] and this in itself may lead to swelling of the red cells, as their volume tends to be inversely proportional to the level of serum albumin. Six cases of advanced portal cirrhosis, all with macrocytosis and low serum albumin, were described by Bethell and Rottschaefer,[9] who found that the amount and concentration of haemoglobin in the corpuscles were normal, indicating that a developmental factor was at work, and there was actually a disturbance of blood formation. In a heterogeneous group of other diseases of the liver, including hepatitis, abscess, and carcinoma, both the serum albumin and the corpuscular concentration of haemoglobin were low, indicating a simple circulatory cause. It thus appears probable that macrocytic anaemia due to disturbance in the development of the red cells in the marrow is restricted to, or at any rate is much more prone to occur in, portal cirrhosis. Shumacker and Wintrobe[1] were able to reproduce the macrocytic anaemia of disease of the liver in dogs and rabbits by repeated poisoning with carbon tetrachloride. The anaemia was proportional to the severity and duration of the chronic liver damage, and the blood picture resembled very strikingly that of patients suffering from pernicious anaemia. In man the bone marrow in these cases may be indistinguishable from that of pernicious anaemia. Some writers have attributed the macrocytic anaemia of cirrhosis of the liver to defective storage of the liver principle, and it is true that assay of these livers, which has now been carried out in several human cases, has shown that little or no anti-anaemic principle could be extracted. Nevertheless, this cannot be the whole explanation, for the results of treatment of the macrocytic anaemia of portal cirrhosis with preparations of liver by mouth and parenterally are disappointing. Moreover, enough anti-anaemic principle should be stored in the kidney, the brain, and other reservoirs. But although kidney and brain are effective remedies by mouth, Dakin, Ungley, and West[2] were unable to extract active haemopoietic principle from them by methods which had been successful with liver. The mechanism of pernicious anaemia is more complicated than was at first realized. It seems unlikely that the part played by the liver is passive or that it acts merely as a storehouse for material elaborated in the alimentary tract.

MENTAL HEALTH OF PRISONERS

Psychological science can make such an important contribution to the study and treatment of crime that no opportunity should be lost of explaining its possibilities to the public. Dr. W. Norwood East, in his report as Medical Commissioner of Prisons,[3] regrets the fact that magistrates still convict and sentence offenders whom they know to be insane or mentally defective. On April 20, 1934, the Home Office issued a circular to all courts of summary jurisdiction pointing out the grave objections to a system which neglects to take into consideration the relevant medical factors when deciding a case. Dr. Norwood East finds it difficult to appreciate the attitude of justices who persist in sentencing prisoners before asking for a report on their mental state. He regards this practice as undesirable and possibly unjust. It is dangerous to generalize, but one of the principal

[3] *New Eng. J. Med.*, 1937, **216**, 539.
[4] *Mém. Acad. Chir.*, 1937, **63**, 415.
[5] *C. R. Soc. Franç. Oto-Rhino-Laryng. Congrès*, 1935.
[6] *Les Syndromes Ménièriques*. By S. H. Mygind and Dida Dederding. Monographies Oto-Rhino-Laryngologiques. Les Presses Universitaire de France, Paris, 1934.
[7] Rosenberg, D. H., *Amer. J. med. Sci.*, 1936, **192**, 86.
[8] Tumen, H., and Bockus, H. L., Ibid., 1937, **193**, 788.
[9] *Univ. Hosp. Bull.*, Univ. Michigan, 1936, **2**, 65.

[1] *Johns Hopk. Hosp. Bull.*, 1936, **58**, 343.
[2] *J. biol. Chem.*, 1936, **115**, 771.
[3] *Report of the Commissioners of Prisons and the Directors of Convict Prisons for the Year 1935*. London: H.M. Stationery Office. Cmd. 5430. 1937. (Pp. 128. 2s. net.)

reasons for this attitude is probably the rooted distrust of psychology that is inherent in the national character, and especially in those of the generation which chiefly occupies the petty sessional bench. It would not, of course, be fair to say that magistrates as a class are hostile to psychological knowledge, for the Magistrates' Association has always shown keen interest in and sympathy with the psychological approach to the problems of the delinquent. Time and quiet persistent instruction are the best means of bringing magistrates as a whole to enlist the help of the psychological physician in dealing with those offenders whose conduct has been substantially the result of disordered mentality. These do not, of course, comprise the whole or even perhaps the majority of all prisoners. Nevertheless, it seems from Dr. Norwood East's report that justices could do more than they do at present in giving information as well as asking for it. The Home Office circular of 1934 stated that medical officers of prisons derived much assistance in their examination into the mental condition of a remand prisoner if the court sent them all available information on his life history and mental history. In a few areas excellent and valuable information is forwarded to the prisons, but in general, as the medical officer of Brixton Prison reported, there is no real liaison between the court and the medical officer. The psychologist's assessment of a prisoner's mental condition would be more valuable to the justices if he held the key to the man's "life style." There is a wholesome and growing tendency for courts to look more at the offender and less at the offence. Whatever may be the possibilities of treating delinquency by psychological means, medical psychologists can greatly help the administration of justice if they are given fair opportunity for investigation and report and if the courts act on their advice.

THE DANGEROUS AREA OF THE FACE

Fatalities are unfortunately not very uncommon from the failure to institute prompt and energetic treatment, but failure to withhold the scalpel in a case of facial furunculosis or carbuncle—especially when the infected area is on or near the upper lip—may be disastrous. This has been well brought out by a recent study of infections in the dangerous areas of the face by Urban Maes[1] of New Orleans. Referring to infection in the vicinity of the upper lip, he says, "This is a condition in which procrastination reaps shining rewards, in which zeal and promptness are attended by fearful consequences. The physician who treats such cases will lose fewer of them if he takes his stand on the firm rock of surgical nihilism." Maes has collected twenty fatal cases of lesions in the dangerous area and twenty-four fatal cases of infection of other parts of the face not usually included in this area. Fifteen of the twenty fatal cases were in patients between 15 and 28 years of age. The upper lip area, in common with the subaponeurotic space beneath the scalp, is known as a "danger area" because of the direct intracranial venous connexions which permit the passage of infective thrombi into the intracranial venous sinuses. The venous trunk formed by the angular and (anterior) facial veins has connexions with the cavernous sinus, both by way of the ophthalmic vein and through the pterygoid plexus. Interruption of the connexion through the ophthalmic vein has been suggested and practised by ligature, but this involves an incision and tissue damage and the danger of disturbing and loosening clot by manipulations. Maes states that he has never seen any early case in which he thought the procedure was indicated or a late case in which he thought it could do any good. He concludes that ligation is theoretically correct but of little practical value. As long ago as 1852 H. Ludlow drew attention to the fatal character of boils and carbuncles on or near the upper lip. He described six cases, three of which were fatal, and wrote against local measures which "demolish the feeble bulwarks which oppose the spread of the disease"; but it remained for Logan Turner of Edinburgh in 1926 to work out the exact pathways by which the infection is spread. The rapidity of the spread and of a fatal termination in some of these cases following surgical intervention is tragic when one considers the apparently trivial character of the initial lesion. The practical lesson is that a pimple or other infected lesion on or near the upper lip is a danger signal: as Maes says, "Lay persons must learn to keep their hands off their faces, and physicians must learn to keep their hands off their patients' faces." If the lesion is of any but the simplest character rest in bed, with nursing care, is advisable; this includes the prohibition of speech and laughter, so that movement and trauma are reduced to a minimum. Nasal feeding should be instituted in graver cases and local treatment limited to warm compresses. Many surgeons now advocate conservatism in the treatment of boils wherever they occur.[2] In the treatment of boils on the face such conservatism is vital.

[1] *Ann. Surg.*, 1937, 106, 1.

DR. ANTOINE BÉCLÈRE: CORRECTION

We much regret that through a confusion of names an obituary notice was published on September 11 (p. 562) of Dr. Antoine Béclère, the eminent French radiologist, President d'Honneur de la Société de Radiologie de France, Membre de l'Académie de Médecine, Honorary Member of the Royal Society of Medicine. Mdlle Antoinette Béclère informs us that her father is happily in good health. It was Dr. HENRI BÉCLÈRE who died last month; he also practised as a radiologist, and was Dr. Antoine Béclère's cousin. Dr. Antoine Béclère's address is 122, Rue la Boëtie, Paris, 8me.

The Harveian Oration before the Royal College of Physicians of London will be given on St. Luke's Day, Monday, October 18, at 4 p.m., by Sir Arthur F. Hurst, whose subject is "Observation and Experiment and the Physiology of the Stomach."

[2] *British Medical Journal*, 1937, 1, 82.

ANAESTHESIA IN GENERAL PRACTICE

This is one of a series of articles, contributed by invitation

ENDOTRACHEAL ANAESTHESIA

BY

IVOR LEWIS, D.A., M.R.C.S., L.R.C.P.

Although the practice of endotracheal anaesthesia has in the past been limited to professional anaesthetists, there is nowadays an increasing number of men, both in provincial towns and in country districts, who are devoting themselves especially to anaesthesia and who are adopting modern methods to a very advanced degree. Familiarized as students with modern apparatus, they no longer regard an anaesthetic machine as a complexity beyond their comprehension. Proficiency in endotracheal technique is one of the more obvious manifestations of the first-class anaesthetist, but it should be the duty of every man who practises anaesthesia at all regularly to make himself proficient in this branch and to be possessed of the necessary equipment. Apart from adding to his capacity as an anaesthetist it places in his hands a method of artificial respiration that is second to none. Before undertaking this technique proficiency in ordinary anaesthetic methods and the possession of an efficient machine are essential. A post on the staff of a hospital is advisable, as opportunities for practice are more frequent and take place under conditions of greater safety.

Inhalational Method

The method of insufflation, in which the anaesthetic vapour is blown through a small bore catheter and returns around the tube or through a second catheter inserted for the purpose is now almost effete. Inhalation is the accepted modern usage. A wide-bore rubber tube as designed by Magill is inserted either nasally or orally into the trachea, which it fits fairly closely. A metal angle-piece and a short length of rubber tubing connect with an exhaling valve of the McKesson type. The source of anaesthetic vapour may be either intermittent (McKesson) or continuous (Magill, Boyle, or motor pump). The latter must of course have a reservoir bag. It is useful to remember that in an emergency, such as the failure of the machine, direct connexion by a length of rubber tubing from the angle-piece to a gauze-covered funnel or Hahn's cone on which ether is dripped provides a simple and effective method of dealing with an apparently hopeless situation. The indications for endotracheal anaesthesia are as follows:

1. Operations on the head and neck, including, for example, ear, nose, and throat, dental, palatal, and plastic operations, but excluding operations on the thyroid and the eyes. Foreign matter is excluded from the upper air passages and lungs, and the anaesthetist is removed from the field of operation.

2. Chest surgery. An academic reference only as this is definitely an expert's work.

3. Operations involving an inconvenient posture—for example, operations on the brain, spine, or kidney, and any procedure which necessitates a complete Trendelenburg position.

4. Surgery of the upper abdomen and oesophagus because of the diminished respiratory excursion that can be attained.

5. Cases of intestinal obstruction with vomiting. If endotracheal anaesthesia is combined with the insertion of a stomach tube regurgitated material is prevented from entering the trachea.

6. All desperate risks where artificial respiration is likely to be needed.

Absolute contraindications are thyroid operations because of the definite risk of tracheitis produced by surgical handling of the trachea, and eye operations in which it is of vital importance that the patient should not cough even once. Infections of the upper air passages and abnormalities of the larynx are relative contraindications.

Technique

There are three important points.

The first is preparedness. Every detail of the anaesthetic armamentarium should be present and in working order. The moment of inserting the laryngoscope into the mouth is not the time to discover that the battery is dead. Secondly, for oral intubation deep anaesthesia is essential, especially for beginners. Thirdly, for nasal intubation the use of carbon dioxide is essential for the best results. The aperture of the glottis is widened and the strong inspirations tend actually to suck the tube into the trachea.

The use of a 20 per cent. cocaine spray is advocated by many competent authorities, but bearing in mind the toxicity of this drug and the possibilities of idiosyncrasy I am not convinced that its routine use is justifiable. It is said to facilitate introduction by making the larynx insensitive, but the beginner would be better advised to concentrate on other details in his technique.

Oral Intubation

The beginner should first make himself proficient in this method, so that when blind nasal intubation fails the tube can be inserted into the trachea under direct vision, using the laryngoscope and Magill forceps. The patient is deeply anaesthetized by some suitable method to which the anaesthetist is accustomed. The head should be in the normal position, supported by one pillow. Hyperextension should be avoided. In the procedure about to be described it will be noticed that the right hand is used to introduce the laryngoscope. Although this involves a change of hands later I am convinced that it is sound, as the majority of people are right-handed and the introduction can be done with far greater facility and accuracy with the right hand. Furthermore, the left hand in opening the mouth does not obstruct the view, as tends to be the case when the hands are reversed. The procedure for oral intubation is as follows.

With the index finger of the left hand pull on the upper teeth; this produces slight extension and opens the mouth. With the second finger of the left hand depress the point of the chin. This opens the mouth well and keeps the lower lip from being nipped between the laryngoscope and the teeth. If the mouth cannot be opened by this manœuvre the patient is too light and the anaesthesia must be deepened. With the right hand introduce the laryngoscope to the right of the midline, keeping the tongue to the left. Following the natural curve of the mouth the base of the tongue is reached, where the epiglottis will be seen as a pink object hanging into the field of vision. This is hooked up by the tip of the laryngoscope, to which a lifting movement is now imparted. At this point it is important to avoid pivoting on the incisors, as this is the moment when the teeth tend to be damaged. The larynx

should now be visible, the white vocal cords being easily recognized.

Taking good care to maintain this position, the grasp of the laryngoscope is changed from the right hand to the left. The lubricated tube is now inserted with the right hand. It must be pushed boldly and firmly, as it tends to be deflected by the slightest obstruction if it lacks momentum. It is important to see that the tube has its concavity upwards on introduction so that it will curve naturally up to the glottis when it leaves the end of the spatula. If held in the reverse position it will inevitably fall away and enter the oesophagus.

Beginners often find it difficult to decide whether the tube is in the trachea or not, as when the tube is in position it obstructs the view through the laryngoscope. This is particularly so when the introduction of the tube is immediately followed by convulsive heaving. In such a case the tube should not be connected to the machine until there is no doubt that the respirations are taking place through the tube. It must be borne in mind that a tube in the oesophagus will cause laryngeal spasm, and the accompanying heave may blow gas from the stomach out through the tube, so that it appears at first to be in the trachea.

Before withdrawing the laryngoscope place a Mason's gag in the left side of the mouth. This prevents damage to the teeth by the laryngoscope and also biting on the tube when the laryngoscope has been removed. Withdraw the laryngoscope, taking great care not to remove the tube at the same time. Connect the angle-piece to the anaesthetic apparatus.

When quiet anaesthesia is resumed the mouth should be packed with gauze or bandage soaked in liquid paraffin. This should be done with care and gentleness—rough packing, or packing while the patient is heaving, is the commonest cause of sore throat after intubation. The tube is finally secured with strapping and castor oil drops put in the eyes.

Nasal Intubation

Except for operations upon the nose or palate the nasal route for intubation is the method of choice of the experienced anaesthetist. The anaesthesia need not be so deep, since the muscles of the lower jaw do not have to be relaxed—in fact, it can be done under gas and oxygen alone—and there is no danger of damaging fragile teeth. Dexterity in blind intubation is only acquired after long practice, and it is as well for the beginner to have the laryngoscope and Magill forceps at hand, and to have the patient well anaesthetized. A properly curved tube of the right consistency tends naturally to take an anterior course on passing through the nose and reaching the pharynx. This will bring the point up to the trachea rather than to the oesophagus. A tube that has lost its curve will remain on the posterior pharyngeal wall throughout its course and will go straight on into the oesophagus. At the other extreme an excessively curved tube will take such an exaggerated forward course that it passes the glottis almost at right angles to impinge upon its anterior rim.

Thus it will be seen that the selection of the tube is of prime importance. Special tubes have been devised by Magill which fulfil very well all the requirements of curvature and consistency and combine a thin wall, which gives maximum calibre, with sufficient rigidity to prevent kinking. Even these tubes may with age and lack of proper care lose their characteristics. They are best stored in a large round tin, so that their normal curve is maintained. Too small a tin will exaggerate the curve and make them very difficult to use; a straight narrow box will cause them to lose their curve altogether. Prolonged boiling should be avoided, as it makes the tubes flabby—they are best sterilized in a cold solution of biniodide of mercury. The technique of nasal intubation is then as follows:

The position of the head is important. The normal position when the head is supported by a single pillow is best, but some variation may be necessary in certain cases, as will be indicated later. The nose is inspected for the presence of any obstruction, and the side with the freer airway selected. A congested mucous membrane may be sprayed with 20 per cent. cocaine, which some authorities use as a routine. The patient is anaesthetized to a depth which will vary with the anaesthetist's experience of intubation. The beginner should anaesthetize as for oral intubation. Carbon dioxide—about 10 per cent.—is then administered until the respirations are deep and rapid. The lubricated tube is introduced into the nose and as little time as possible wasted in pushing the point as far as the pharynx. It should be remembered that once inside the nares the direction is backwards at right-angles to the line of the body.

Breathing can now be heard through the tube, and from this point onwards the movement of the tube must be bold and rapid. A slowly moving tube is easily deflected from its course by any obstruction if it is not in exactly the right line. In an ideal case it immediately enters the trachea. The respirations can be heard coming strongly through the tube; if the patient is only lightly anaesthetized he will give a convulsive heave, but as he is unable to close his glottis no cough will be heard. It is possible to be deceived in cases in which there is vigorous breathing through the opposite nostril, as the tube may be plunged into the oesophagus while the respirations heard in the neighbourhood of the nose are assumed to come from the tube. This error may be avoided by closing the other nostril with a finger.

If the tube does not immediately enter the trachea the beginner should promptly introduce the laryngoscope into the mouth and expose the glottis. The tube will be seen emerging from behind the palate. Any obvious deflection can be corrected by rotating the tube, and it is often possible to guide it into the trachea by this manœuvre alone. Failing this the Magill forceps must be used while an assistant pushes the tube onwards through the nose.

When it is decided not to fall back on the laryngoscope it is necessary to have a properly rationalized plan of action. The tube is not in the correct line. This may be due to lateral deflection to either side, or displacement antero-posteriorly, or, as is most common, a combination of both. Lateral deflection may be detected by a finger on either side of the cricoid, and is corrected by rotating the tube until the breathing is heard at its loudest. The antero-posterior position of the point is varied by having an assistant to lift the head vertically while the jaw is held up by the anaesthetist to prevent flexion of the head. Flexion is the last movement made, as it is effective only in the case of excessively curved tubes, and as most tubes fail in curving forward the vertical lift is far more certain to be successful.

Dangers and Complications

There are two sources of possible trauma. The laryngoscope during intubation may injure the lips, teeth, tongue, pharynx, or, finally, the glottis, which last may lead to acute oedema, especially in young children and infants. Trauma caused by the packing, on the other hand, may be due to absence of lubrication, too rough packing, or the insertion of the pack while the patient is still heaving. Post-operative sore throat, and even sloughing of the palate and pharynx, may be produced. Tracheitis is uncommon except where there has been much movement or manipulation of the neck, as in thyroidectomy.

Misplacement of the tube may be dangerous. If inserted into the oesophagus it may cause inflation of the stomach and intestines with anaesthetic vapour. With the low pressures now in common use it is unlikely that any serious damage will follow, but the surgeon will be incommoded in an abdominal operation by the distended gut. If this should occur a tube should be left in the stomach to assist the expulsion of the gas.

When too long a tube has been used it may enter the bronchus, more usually the right. It happens more often during oral intubation as the distance between the external orifice and the bronchus is shorter than by the nasal route. It should be remembered that the tubes as supplied by the makers are of generous length, and while they may be ideal for nasal intubation they will certainly need to be cut down for oral work. Therefore it is safer to keep two sets of tubes in order to avoid this accident, for tubes cut down to a safe length for the mouth become almost useless for blind nasal intubation. It is impossible to dogmatize about the average distance between the teeth and the bifurcation of the trachea, for each case must be judged individually. It is quite a simple matter to fit the patient roughly with a tube by external comparison with the neck, and if care is taken not to insert the point of the tube more than two inches beyond the vocal cords the bronchus need never be entered.

Early detection of the fact that the tube has entered a bronchus is often difficult, as the signs resemble those of too light anaesthesia. There is heaving due to irritation of the bronchus, and since only one lung is affected by the vapour the effect both of the anaesthetic and of the oxygen percentage is almost halved. Therefore, if with a normal anaesthetic concentration and oxygen percentage the patient still remains too light and is slightly cyanosed, the anaesthetist should always suspect that the bronchus has been entered. The respirations when the heaving has subsided tend to be short and jerky, and if at this point the tube is disconnected near the machine and applied to the ear the noise heard will be of a higher pitch than normal and will resemble that heard through a partially obstructed tube. Moist sounds emanating from the opposite lung will also be detected. Should the condition be allowed to persist it may result in the complete collapse of the other lung with characteristic deformity of the chest. The treatment is, of course, withdrawal of the tube. This should be done carefully, as the patient is likely to have an unusually short trachea and it is very easy to pull the end of the tube completely out of the trachea—a disastrous procedure in the middle of a facial operation.

A further possible complication is inhalation of the tube caused by a too loosely fitting angle-piece. The tube slips off the angle-piece and is inhaled out of reach. In the case of an oral tube, a gag must be put promptly between the teeth before the patient becomes light enough to clench them or the situation will become serious owing to the obstruction to the respiration. The laryngoscope is then inserted and the tube recovered by means of a Magill's forceps. In the case of a nasal tube there is not so much prospect of respiratory obstruction. The anaesthesia may be deliberately deepened until the jaw muscles are relaxed. It is usually impossible to retrieve the tube through the nose once it has got well down, so the laryngoscope must be used. The tube is seized by two pairs of Spencer-Wells's forceps and cut between them. The lower half is pulled straight out, while the upper half is pulled backwards into the pharynx until it is free of the palate and then removed through the mouth.

Conclusion

At the conclusion of the anaesthetic accurate technique is of paramount importance. It is usual to remove the tube in the theatre, but it may be left in position, nasally, for as long as twenty-four hours if so desired. In such a case it should be anchored by a safety-pin. Before taking out the tube all packing must be taken from the pharynx, and any blood clot or mucus dealt with by suction or swabbing. An ordinary airway is then placed in the mouth and the patient is given 10 per cent. carbon dioxide in oxygen through the tube. When the respirations are deep and rapid the tube is carefully removed. This procedure eliminates the possibility of laryngeal spasm, which would otherwise tend to occur on movement of the tube.

FOOD AND GASTRO-INTESTINAL DISEASE IN SWEDEN

A report on *An Investigation into Questions of Social Hygiene in the Counties of Västerbotten and Norrbotten, Sweden*[1] has recently been published in English by the Royal Medical Board of Sweden under the editorship of Dr. Nils Hellström, formerly Director General of the Board. It is a bulky, well-illustrated volume of some 800 pages dealing with geographical and climatic conditions, housing, mode of life of rural population, medical examination of school children, composition of diets, basal metabolism in relation to the composition of the food, incidence of gastro-intestinal ailments and of anaemia in relation to the composition of the food, condition of the teeth, dental diseases, histopathology of the teeth with special reference to hypovitaminosis (C and D), determination of the antiscorbutic potency of vegetable products, the widespread occurrence of C-hypovitaminosis in Vasterbotten, existing Swedish institutions engaged in the promotion of public health and personal hygiene, and means for improvements in hygiene. The purpose of the present work is not only to furnish a comprehensive report on the results of this investigation, drawing attention to any points which may be of interest to the medical profession, but also to give to the non-medical reader a survey of the results obtained, as a basis for further practical work in the field of social hygiene.

Effects of Dietary Deficiencies

The main objective of the investigation was to try to ascertain the causal connexion between the dietary deficiencies prevailing in these countries and certain morbid conditions, notably lowering of certain functions of the stomach (achylia), catarrh of the large intestine (colitis), and anaemia, which appeared to be of more frequent occurrence there than in the more southerly parts of the country. To this end some 17,400 "healthy" and sick persons were subjected to careful medical examination, the composition of the food habitually used by them being at the same time carefully ascertained. The data accumulated in these ways were then subjected to critical analysis and the conclusion arrived at that the composition of the diet is the decisive factor in causing gastro-intestinal disorder and anaemia in Norrland. No investigation of this magnitude has hitherto been undertaken in connexion with the commonest of all human ailments: gastro-intestinal disease. The report has, therefore, a unique value.

[1] Hakan Ohlsson, Lund. Swedish edition, 1934; English, partly revised edition, 1937. Price not stated.

Achylia and Diet

The Swedish investigators find that an unvaried diet—designated by them the "L-diet"—consisting of refined flour, milk, potatoes, and a little butter with little or no meat, fresh fruit, and vegetables is associated with a high incidence of achylia and its accompaniments: mild gastric disorders, mostly in the form of a sense of fullness and oppression in the epigastric region, intestinal disorders mostly in the form of severe constipation and stercoral diarrhoea. While the incidence of achylia among the users of a mixed diet (itself far from perfect) was 13.5 per cent., it was 39.1 per cent. among the users of the "L-diet," amounting to 68 per cent. among the users of the diet in its most unvaried form. It was found that achylia could be produced in human beings by changing the diet from a mixed one to one having the composition given above (the "L-diet"). Further, by substituting a mixed diet for the "L-diet" the achylia usually disappeared. A marked improvement or a restitution of the gastric function occurred in 36 per cent. of achylic cases when given a mixed diet of meat, eggs, fish, fruit, and green vegetables, in spite of the fact that the period of observation was short and that the cases varied as to the degree of functional disturbance: the greater this disturbance the more unfavourable the prognosis. The investigators would therefore appear to have established their point, on statistical, experimental, and therapeutic grounds, that "the composition of the diet is the decisive factor in the frequency of achylia in Norrland."

Anaemia was also found to be associated in a significant way with the habitual use of the "L-diet." The type of anaemia has certain features similar to those in pernicious anaemia. It is not a typical achylic anaemia, nor an anaemia due to deficiency of iron. It has a hyperchromatic element. It is explained partly by the achylia, partly by the iron deficiency of the diet, and partly by B-hypovitaminosis.

Faults of the "L-diet"

As to the faults in the "L-diet" responsible for the production of the gastro-intestinal ill-health, Dr. Martin Odin (who is responsible for that part of the report dealing with diseases and their frequency with special reference to the composition of the diet) considers that this diet "to a great extent relieves the work of the digestive apparatus, owing to the fine disintegration of the food and its deficiency of meat, fruit, and vegetables. Herein perhaps lies the cause of its achylia-promoting effect." Fresh milk often aggravates the gastric discomfort of sufferers from achylia while sour or ropy milk as a rule does not. May it not be that those children in this country who "cannot take milk" are afflicted with achylia? The advisability of giving milk to ill-fed school children without other food accompaniments may well be doubted.

Vitamin B Deficiency

The "L-diet" has other faults, chief among them being a low content of the vitamin B complex and a composition which increases the need for vitamin B. Dr. Odin remarks that "the assumption of a B-hypovitaminosis would explain most of the symptoms," though he refrains from affirming that this is their explanation. For if it be it appears strange to him that his patients should exhibit no signs of beri-beri and little or none of pellagra. His perplexity is evidence of the difficulty of freeing the mind of those adjectival encumbrances—"anti-beri-beri" and "anti-pellagra"—formerly attached to the components of the vitamin B complex. This complex is one of the dietary substances absolutely necessary for physiological well-being, including well-being of the gastro-intestinal tract, and varying degrees of malnutrition due to its insufficiency in the diet are of common occurrence among the sick. Because of the high incidence of gastro-intestinal disease in his experimental animals McCarrison[2] was led to believe that a liberal supply of vitamin B is very important in maintaining the health of the gastro-intestinal tract and that its want is a common cause of gastro-intestinal ailments. Since that time an impressive weight of evidence has accumulated to show that chronic deficiency of vitamin B may be followed by serious damage to the structure of the digestive tract and impairment of its function. Among the most recent results in this connexion are those published by A. Z. Baker, M. D. Wright, and J. C. Drummond.[3] In an experiment planned to demonstrate the types of disorders which arise from subsistence for long periods on diets deficient in vitamin B, they found that the chief effect was the remarkably high incidence of gastro-intestinal ailments. The observations recorded by the Swedish observers provide additional evidence that faulty diet deficient in vitamin B is an important cause of gastro-intestinal disease.

Members of the profession in this country will be grateful to the Royal Medical Board of Sweden for making the results of its pioneer work available to them in English. We commend the report to all those who are interested in social hygiene.

Local News

SCOTLAND

Diphtheria Immunization in Edinburgh

At a meeting of the Public Health Committee of Edinburgh Corporation on September 14 it was decided to appoint an assistant medical officer at a salary of £600 to supervise the administration of a scheme of diphtheria immunization. The medical officer of health, Dr. John Guy, stated that there had been twenty-four deaths from diphtheria in Edinburgh during the first six months of the present year, but that the number of diphtheria cases had been lower during the past three years than previously. Lately, however, there had been evidence that the severer type of diphtheria experienced on the Continent was appearing in Edinburgh, and the twenty-four deaths had occurred among 510 cases. At least two-thirds of all the pre-school children and over half of the school children in the city were susceptible to diphtheria. On an average about 400 children were immunized yearly under the child welfare department's scheme. Further, the school medical department had immunized on an average about 2,800 children and general practitioners approximately 100 children of all ages each year. The child welfare department was unable owing to the size of its clinics to carry out any more immunizations than it was doing at present. It was therefore decided that the medical officer of health should be instructed to make the immunization scheme as effective as possible, and to take up with the British Medical Association the question of obtaining the effective co-operation of general practitioners with the department in the scheme. The scheme would be entirely voluntary,

[2] *British Medical Journal*, 1920, 1, 822.
[3] *J. Soc. chem. Ind.*, June, 1937, p. 191T.

but it had been found that at least 50 per cent. of all parents were quite willing that their children should be subjected to it.

Dundee Maternity Scheme

Under the provisions of the Maternity Services (Scotland) Act, 1937, a scheme drawn up by Dr. W. L. Burgess, medical officer of health for Dundee, to provide a maternity service including midwife, doctor, and, if necessary, obstetrician and anaesthetist, has been approved. The main purpose of the scheme is to make available to women who are to be confined in their own homes the joint care of a medical practitioner and a certified midwife, with the advice or help, if it should be necessary, of an expert obstetrician. All general practitioners in Dundee are to be invited to participate, and all those in special practice as obstetricians to act as specialists. A visiting obstetrician and gynaecologist is to be appointed to Maryfield Hospital at a salary of £450 and a resident maternity services medical officer in the hospital at a salary of £400. It was agreed to send copies of the scheme for comments to the local branch of the Scottish Midwives Association, the directors of Dundee Royal Infirmary, and the Dundee Branch of the British Medical Association.

Chronic Incapacity

In Scotland in recent years it has become clear that chronic incapacity among the insured population is increasing (*Journal*, August 14, p. 350). Cases in which disability has lasted for more than twelve months have reached a new high level. The committee which recently reviewed Scottish Health Services recommended that "to meet the needs of general practice it should be a definite function of the authorities administering the statutory medical services to supplement, where necessary, the existing specialist diagnostic and other facilities." The extent and kind of these requirements is already the subject of an important investigation, and it has been decided to institute a scheme whereby, for all insured persons who have been incapable of work for a consecutive period of three months, clinical and other details will be obtained from which ultimately some quantitative idea of these needs will be forthcoming. The approved society involved will notify the Department in cases in which incapacity has lasted three months. A clinical form will then be sent to the patient's doctor for completion, and this will be returned to the regional medical staff. In a certain proportion of the cases the regional medical officer will desire to examine the patient and discuss his condition with the insurance practitioner. The form suggested, in addition to routine data such as age and occupation, seeks to obtain details of the illness under consideration in respect of history, duration, and present condition, with particular reference to what, if any, diagnostic or therapeutic ancillary methods have been adopted, and whether or not any consultant opinion has been obtained.

ENGLAND AND WALES

Recruitment of Hospital Nurses

Throughout the country considerable difficulty is being experienced in recruiting to the junior grades of female nursing staff, particularly probationer nurses and staff nurses, for duty in hospitals. The London County Council has been considering proposals for alleviating the present shortage. It is borne in mind that any steps taken to deal with the immediate problem should not prejudice whatever may be the appropriate ultimate solution. Proposals have been made for raising the initial salary of staff nurses and for substituting assistant nurses for probationers in the tuberculosis hospitals, except at Heatherwood Hospital. At present, however, some relatively minor steps are to be taken. The salary rates payable to general-trained State-registered staff nurses in the Council's hospitals are £5 a year lower than those paid by nearly all the county and county borough authorities adjoining the London county area. Approximately 350 probationer nurses complete their training twice a year. The wastage rate—that is, the proportion of probationers who do not proceed to the grade of staff nurse, was 38 per cent. during 1936, and it is anticipated that the rate this year will be considerably higher. The number of vacancies in the grade of staff nurses increased from fifty-five in June, 1935, to 306 in June, 1936, and to 454 in June of this year. It is felt that every endeavour should be made to retain in the service as many trained nurses as possible, particularly as it is anticipated that 285 additional staff nurses will be required in the fever hospitals for the biennial outbreak of measles expected during the coming autumn and winter. If the position regarding the recruitment and the retention of trained staff in the L.C.C. hospitals is not improved it will be necessary to continue to employ a large number of institute nurses; the additional cost of employing an institute nurse instead of a staff nurse is approximately £100 a year. It is proposed that for one year probationer nurses who pass their central final examinations this year shall be paid on promotion to the grade of general-trained staff nurse a salary of £75 during their first year of service—that is, an increase of £10 a year. As a corollary to this, staff nurses who passed their final examination last year and are now in receipt of £70 a year are to receive an additional £5. It is also proposed that for the next year staff nurses trained outside the service should be appointed at the rate of £70 a year—that is, an increase of £5 a year—which will bring the Council's rate up to that paid in the counties adjoining London.

Queen Charlotte's Maternity Hospital

The clinical report of Queen Charlotte's Maternity Hospital for 1936 presents formidable sheaves of statistics with little or no comment, but the statistics yield much interesting information. During the year 3,726 patients were treated by Queen Charlotte's—1,216 as out-patients and 2,510 in the wards. The latter are divided into two categories—patients "booked" in the ante-natal department, who numbered 2,266, and patients, numbering 244, sent in on emergency by outside doctors or midwives, and who, in many cases, had received little or no ante-natal supervision. Brief particulars of every case are set out in a series of tables. Out of 158 cases of albuminuria admitted for treatment, one mother died: thirteen babies also died, and nineteen were stillborn. Of thirty cases of cardiac disease three mothers died and there were three stillbirths. Of twelve cases of eclampsia, one mother died, three babies died, and four babies were stillborn. In thirty-three cases of placenta praevia the maternal mortality was *nil* and the foetal mortality over 60 per cent. The results with various methods of delivery can be thus set out:

	No. of Cases	Mothers Died	Babies Died	Still-births
Induction of labour (spontaneous delivery)	204	2	13	28
Induction of labour (forceps delivery)	31	0	1	3
Forceps (labour not induced)	166	3	7	18
Caesarean section	69	3	4	3
Manual removal of placenta	27	1	0	8

Among the 2,266 "booked" cases there were six maternal deaths, and eight such deaths among the 244 emergency cases—a maternal mortality in the first category of 2.64 per 1,000 and in the second of 32.82. The number of cases of premature birth was 160. The lowest weight at

birth of a child who survived was 2 lb. 13 oz., the weight on discharge being 4 lb. 2 oz. Thirty-nine sets of twins were born during the year; seven of the babies died and eight were stillborn. The total number of stillbirths was 137; the stillbirth rate for the "booked" cases was 3.6 per cent. and for the emergency cases 22.1 per cent. In fifty-one cases of trial labour for suspected disproportion one mother died and one baby was stillborn.

Correspondence

Rupture of Extensor Pollicis Tendon

SIR,—In the course of some work on spontaneous rupture of the extensor pollicis longus tendon I have read the letter by Mr. Maurice Lee in your issue of September 29, 1934, page 611. I would warn surgeons against following his advice when he says that should another case present itself he would not hesitate to follow Mr. Andreasen's procedure (*British Medical Journal*, 1934, 2, 515) of suturing the distal end of the ruptured tendon to the tendon of the extensor of the index finger. I have already published in the *Acta Chirurgica Scandinavica* (1921, 55, 177) a report, which was referred to in the Epitome to the *British Medical Journal* of January, 1922 (para. 136), of two cases in which I made an interposition from free transplanted tendon between the two portions of extensor pollicis longus tendon. It is always possible to find the proximal portion. I have taken the tendon graft from the tendon of abductor pollicis longus. The result after seventeen years is still excellent. The procedure of fixing the tendon of the extensor pollicis longus in another muscle is not the method of choice.—I am, etc.,

STEN VON STAPELMOHR, M.D.,
Chief Surgeon, Norrköping Hospital.

Norrköping, Sweden, Sept. 9.

Bilateral Lobar Pneumothorax

SIR,—Dr. Crocket's article in the *Journal* of August 7 and the ensuing correspondence in your columns on bilateral artificial pneumothorax treatment prompt me to put in a plea for a trial in this country of the bilateral lobar pneumothorax employed by Dr. Maurer of Davos in the treatment of bilateral pulmonary tuberculosis.

The technique is described in the April issue of the *British Journal of Tuberculosis*. This modification of bilateral artificial pneumothorax is applicable to cases in which the disease is limited, as it often is, to the upper lobes. The principle of the method is, in brief, that after intrapleural injection of hypertonic glucose solution the sound lower lobes are re-expanded and fixed to the chest wall, an air pocket remaining over each of the affected upper lobes. Induction is not always easy and requires skill and patience, but the after-treatment of an established lobar pneumothorax is straightforward.

Three advantages may be claimed for the method. First, the lower lobes and the mediastinum being fixed, a more effective collapse of the diseased upper lobes can be maintained, refills with an end-pressure of zero being given on both sides. Secondly, as a consequence of the gain in functioning alveolar tissue, the anoxaemia, which is frequently present in bilateral pneumothorax, disappears. Thirdly, as the air pockets are small, any of the complications of artificial pneumothorax—effusion, empyema, or perforation—which may arise will be less dangerous and more easily dealt with than when occurring in bilateral artificial pneumothorax.

During the period of induction constant clinical and radiological observation are necessary, and it should only be undertaken in a hospital or sanatorium. Considerable patience is required. The pleural sheets may not adhere at the first attempt and the intrapleural injection of increasing quantities of glucose solution may have to be repeated two or three times. If a refill is given too soon the visceral pleura is peeled off the chest wall. On the other hand, if delayed too long excessive expansion of the diseased lobe and dissemination into the redeveloped lower lobe or lobes is a theoretically possible complication. It has not been seen in practice and the risk appears to be slight. Professor Brauer in the early days of adhesion cutting saw a considerable number of cases in which the pneumothorax was almost completely let out as a result of post-operative emphysema and lack of a timely refill. He states that he never saw an intrapulmonary dissemination from this cause as long as a small air pocket remained over the affected lobe. The other possible complication is the production of a tuberculous effusion with subsequent obliterative pleurisy. I have seen one case in which a tuberculous pleural effusion developed during the induction, probably as a result of irritation of subpleural tubercles. However, the ensuing obliterative pleurisy was easily checked by appropriate treatment. It should perhaps be mentioned here that there is never any tendency to obliterative pleurisy as a sequel of the transient sterile effusion evoked by the hypertonic solution.

When bilateral lobar pneumothorax has been successfully established the after-management of the case is simple and the results more than compensate for the care required during the induction period. I have had an opportunity of observing these cases over a period of several years, and the improvement in the condition of the patient, after a bilateral artificial pneumothorax has been replaced by a bilateral lobar pneumothorax, is very striking.—I am, etc.,

R. J. C. MAXWELL, M.Ch., F.R.C.S.

London, W.C.1, Sept 16.

Expulsion of Placenta Praevia in Advance of Foetus

SIR,—Being interested in Dr. J. W. Nankivell's Clinical Memorandum on "Expulsion of a Placenta Praevia in Advance of the Foetus" which appeared in the *British Medical Journal* of September 11, I hope you will publish this letter. The condition cannot be so extraordinarily rare as I have had personal contact with two such cases since 1927. In both my cases the entire sac was expelled intact with considerable accompanying antepartum haemorrhage, there being no operative intervention, and in both instances the child lived. I am convinced that many other instances of similar occurrences could be cited but have not been reported in the literature.—I am, etc.,

Dublin, Sept. 13. O'DONEL BROWNE.

Indications for Induction of Abortion

SIR,—May I take advantage of your columns to voice a protest against the attitude held at the moment in some hospitals on the subject of induction of abortion in "suitable cases"? I have had occasion to send two cases to London during the past month, cases in which, in

my opinion, induction of abortion was of first consequence to the patient, and in both the operation has been deemed unnecessary.

The patient in the first case, a woman of 39, has a son of 15, and has been for nine years under treatment for Parkinsonism of such severity that she has difficulty in looking after her house, and is in a state of chronic depression. What further strain the childbirth and its anxieties would impose upon her is difficult to estimate—the woman has already once attempted suicide—and one shudders to think of the mental attitude of an infant brought up in such surroundings. In the second case a woman of 35, with one child of 5, has an arrested tuberculous lesion of the lung. I was informed by the physician who saw her that "with frequent ante-natal supervision and possibly sanatorium treatment the woman would probably go through her confinement successfully."

I am sure that the specialists who saw these cases dealt rightly with them according to the rules of their departments. But I still maintain that induction of abortion was the correct treatment in both cases, and I regret that the personal aspect should have been so completely dwarfed by the clinical.—I am, etc.,

Luton, Sept. 16. EDWARD A. BUTTERWORTH, F.R.C.S.

Sulphanilamide in the Treatment of Gonorrhoeal Infections

SIR,—I, too, felt some surprise at Dr. Anwyl-Davies's, I think too early, decision (*Journal*, September 11, p. 553) that sulphanilamide is useless in the therapy of gonorrhoea. My first trials of prontosil album by mouth, begun a year ago, were on lines similar to those reported by Dr. Anwyl-Davies (who followed the trials of American observers), and led me to think the drug was useless. After increasing the dosage of prontosil, however, and even repeatedly giving one form of it intravenously, I am almost convinced that, once correct dosage and method of administration have been worked out, we shall find in this drug a specific treatment for gonorrhoea in the male which will make the irrigation room but seldom required.

I therefore welcome, and am much encouraged by, the Guy's Clinic observations briefly outlined by Drs. Erskine, Johnson, and Lloyd in their letter on page 598 of your issue for September 18.—I am, etc.,

London, W.1, Sept. 15. H. M. HANSCHELL.

SIR,—The condemnation of sulphanilamide treatment of acute gonococcal infections by Dr. Anwyl-Davies in your issue of September 11, without any suggestive alternative method, leads me to propound my own methods among my private cases. I have not got the advantage of carrying out extensive experimental work among hospital patients, so I must be very certain of my results before advocating any particular line of treatment.

Careful investigation and treatment of sixty cases during the past three years has enabled me to proclaim a cure between the fourth and eighth week, the average being the sixth week. Each of these cases has been followed up by inquiries every six months, and in none has there been any symptom reported suggestive of chronicity.

I have entirely dispensed with wash-outs, either of the urethra or bladder, but I rely upon a strict alkaline diet, urethral instillations of a mercurochrome solution massaged into the bladder, bi-weekly intradermal injections of gonoderm (Parke, Davis and Co.), and daily ultra-short-wave therapy for ten to twenty minutes. Finally, in some of the more severe cases I massage the urethra upon a straight sound and instil gomenoleo, as advocated by Professor Guyon of Paris. Three of my present cases are receiving sulphanilamide in addition to the above-mentioned treatment, but as yet no obvious benefit has been noted.

In none of my cases has any complication occurred, which fact I attribute to ultra-short-wave therapy, and this treatment is advocated by Professor von Litchtenburgh in Budapest. It seems a pity that there is no clinic in this country where poor patients can have the advantage of this method.—I am, etc.,

London, W.1, Sept. 20. MORTON WHITBY.

Nutrition in the Falkland Islands

SIR,—I have read the letter of Dr. G. Arbour Stephens in your issue of September 18 (p. 600) and the article of Dr. Cheverton (*Journal*, January 16, 1937) which prompted it. Concerning the latter, I would remark that I am by no means convinced that all the illnesses labelled "influenza" are in fact influenza. As our knowledge of virus diseases is extended it is not impossible that the term will be found to cover more than one pathological entity.

I would submit that Dr. Stephens has been misled in the course of his inquiries. He says: "Vegetables, which are so essential . . . for growing children, cannot be grown, or, if so, with great difficulty, as the weather, with so little sunshine and so much damp, does not allow of such vegetation." First of all, I would like to quote from the diary of Bernard Penrose, surgeon's mate of the armed shallop *Penguin*, which reoccupied the Falklands after the affair with the Spaniards in 1769 (which was responsible for Nelson going to sea). He says:

"But the glory of our colony was the gardens which we cultivated with the greatest care, as being fully convinced how much the comforts of our situation depended on being plentifully supplied with vegetables. . . . The soil was fine black earthy, rather shallow . . . the manure we made use of was decayed sea-weed, and this we found for the time we had to stay answered our purpose very efficiently. . . . We were plentifully supplied with potatoes, broccoli, cabbages, carrots, turnips, borecole, spinnage, parsley, lettuce, English celery, mustard, cresses, and some few but very fine cauliflowers. . . ."[1]

I was only in the Falkland Islands for a short stay, a matter of six years. During that time I grew, and so did every settlement and shepherd, ample supplies of potatoes, carrots, peas, broad beans, cabbages, kale, turnips, lettuces, beetroot, radishes, and onions. These seem to me to be quite adequate for the needs of growing children. It is nonsense to say that vegetables cannot be grown.

Again: "Malnutrition is a basic factor in the human beings, cattle, and sheep of the Falkland Islands." I would remind Dr. Stephens that the staple industries of the Falkland Islands (on land) are sheep and cattle farming. They would not be a very prosperous community if the inhabitants and the animals they raise were suffering from malnutrition. If Dr. Stephens were to visit the Falklands he would discover that both the cattle (Devons, Herefords, a few Jerseys, and Highland—all grass-fed) and sheep provide excellent beef and mutton. (Cf. the price fetched by Falkland Island wool in the open London market.) The cattle are fat, fertile, and splendid milkers. I question whether there are any in the world to beat the grass-fed island-bred horses for endurance. As for the people, they are as hardy as the

[1] *Account of the Last Expedition to the Falkland Islands.* By Bernard Penrose, Surgeon's Mate (*circa* 1772). British Museum Library.

animals, or they would not be able to do the work necessary for sheep- and cattle-farming.

"Such a state of soil combined with limited sunshine is responsible for a poor state of health amongst the children, whose resistance to gastric (*sic*) and respiratory disease is very low." *I can scarcely refrain from rubbing my eyes!* As I have already mentioned, I was only there for a brief period, but I have rarely met a hardier set of youngsters than Falkland Island children. During my short stay I saw no sign of "low resistance to gastric and respiratory disease." Had Dr. Stephens mentioned allergy, I would have agreed that the colony is a field worth special investigation. Asthma is met with very frequently not only in the island-born but also in those who have gone out from this country. Possibly the large amount of mutton in the diet may be responsible.

"During the last two years as many as thirty operations for appendicitis have been performed." In the six years of my experience I only saw or heard of one case of appendicitis. That variations in the incidence of this disease occur is well known. The history of its rise in the French Army following the introduction of enamelled cooking utensils and its fall when these were withdrawn is a case in point. I refrain from further comment.

Dr. Stephens then goes on to say:

> "Under present conditions it is impossible (!) for the islanders to be properly fed and to be A1 people. If Great Britain is to possess colonies, then it must be on the condition that the colonists are able to lead good, strong healthy lives, or, in other words, no colony should be retained at the expense of the community and especially of the children. . . . The problem for us in Great Britain, and especially for the medical profession, is . . . are we to allow the breeding of *fragile children for the sake of retaining a colony?*"

This all sounds very high-souled and may do credit to Dr. Stephens's heart—at the cost, I fear, of serious reflections on his head. What does he recommend as a solution? He makes general statements of principle, in effect; that in any of our possessions where conditions of health do not reach what he considers to be a necessary standard we should abandon the places. This would also entail abandoning the inhabitants. What would happen, for instance, in the case of our tropical and subtropical possessions where malaria, dysentery, plague, and cholera are endemic, to mention only a few diseases. Would he be in favour of handing them over to other masters?

We can leave the Falkland Islands out of the question, for Dr. Stephens's statements concerning them are so grossly inaccurate as to be not only amusing but ridiculous. In fact I cannot help wondering whether somebody has been wilfully misleading him. But what about India? West Africa? Rhodesia? the West Indies? Must we just "dump" the "White Man's Burden" and leave our less fortunate fellow-subjects to their own devices? It may be that sources of information are open to Dr. Stephens which are denied to others. So far as my own opinion of the Falkland Islands is concerned it would not be easy to find a healthier, happier, or more prosperous community within the Empire. I am sure he would be interested if he were to inspect the statistics of the Government Savings Bank in the Falkland Islands. He may be interested to know, although he does not quote actual sunshine records, that after two hours' exposure to the sun in Fox Bay, West Falkland, all the skin peeled from my back, and that I still carry freckles on my arms which appeared when riding with my sleeves rolled up.—I am, etc.,

Ashtead, Surrey, Sept. 19. H. M. STANLEY TURNER, Wing Commander, R.A.F.

SIR,—Having spent two very enjoyable years in the West Falkland Island I find myself unable to agree with Dr. Stephens (*Journal*, September 18, p. 600), and I should like to detail my reasons for disagreeing.

1. With a little extra care the following vegetables were grown in my own garden: cabbage, kale, broccoli, kohl-rabi, lettuce, carrots, swedes, turnips, and parsnips. Better gardeners also produced beans and peas; gooseberries, currants, and raspberries flourished with care. The West Islanders admittedly did not grow these vegetables as a rule. They had, however, every opportunity of doing so, but were not fond of gardens and did not miss the produce.

2. The land is acid in the same way that any undrained piece of moorland is acid. One or two deep trenches correct this, and the addition of a little basic slag turns such soil into moderate garden soil. Basic slag or lime could be purchased locally. Usually seeds required regular watering until they had developed deep roots, as the wind dried the surface of the soil very rapidly. Established plants only required shelter from the wind.

3. There is one wood, planted some years ago, on the West Island in which the trees look quite English. This I accept as evidence that trees can be grown by those who understand their culture. The inhabitants as a whole do not like trees.

4. The health of the West Islanders during my stay was well above that of an average population here. Admittedly the teeth were poor, but they took little care of them, and their ideas of infant feeding were not calculated to help the growth of healthy teeth. I understand that there was some shortage of milk in Port Stanley, but this was not the case in the west. It was fashionable to have the appendix out, and I suspect that few of the cases operated on were of the acute type. Fresh infections spread rapidly, as they always do among people unaccustomed to disease. Infections brought by ships were of differing strains, and the inhabitants never acquired an immunity to them, I submit for this reason.

Bearing these facts in mind I feel that the Colonial Office has done all that is necessary for the health of the Falkland Islands, and I fail to see that a Royal Commission can help a colony where people prefer to eat bread and mutton rather than to take the trouble of keeping a garden.—I am, etc.,

T. P. BINNS, Formerly Medical Officer, West Falkland Island.

Shirebrook, Notts, Sept. 18.

Quinine Tolerance and Hyperthyroidism

SIR,—Everyone must have been struck with the great *differences in the amount of quinine* that can be given to patients before symptoms of cinchonism appear. I am not referring to cases of idiosyncrasy to the drug, but to intolerance to continued administration.

It has appeared to me that cinchonism is most easily induced in persons with hypothyroidism, whereas, when excessive thyroid activity is present, much larger amounts can be given. Further, in frank cases of hyperthyroidism large doses of quinine, given for weeks or months, appear to modify the symptoms and signs without producing cinchonism. Indeed, occasionally, cure seems to follow such treatment.

The suggestion I am making is that the determination of quinine tolerance might be a useful method of revealing slight hyperthyroidism.—I am, etc.,

London, W.1, Sept. 20. A. FINEY.

Ether Convulsions

SIR,—Having read with interest the letter from Mr. Matthews and Dr. Geal in your issue of September 11 (p. 559) concerning a case of ether convulsions, I should like to describe a case which occurred while under my care a few weeks ago.

The patient was a boy, aged 7, who was admitted to hospital at night as an emergency with osteomyelitis of the femur. He had a temperature of 103° and a pulse rate of 138. It was not a particularly hot night and the temperature of the theatre was not over 70°. Premedication consisted of atropine 1/150 grain. The patient was induced with gas and oxygen administered with a Boyle apparatus followed by gas, oxygen, and ether which had been taken from a fresh bottle.

The operation proceeded uneventfully until the drill was used to open the femur. The child's respirations then began getting irregular, and there was slight twitching of the face which was immediately followed by convulsions. Respiration became spasmodic, the child was blue, and the pulse was imperceptible. Oxygen and carbon dioxide were administered at once and 1.7 c.cm. of coramine. With much difficulty 2 c.cm. of evipan was given intravenously. The convulsions stopped and the pulse improved slightly.

The operation was completed without any further anaesthetic. Although the convulsions ceased the child went into tetanic spasms, which recurred every few minutes. The hands took up the typical "accoucheur's position," the ankles were dorsiflexed, and the toes flexed. During the spasm, which lasted about a minute, the child became pulseless; between the spasms the pulse was rapid and thready. The patient was returned to bed when 5 c.cm. of calcium gluconate was administered intramuscularly and rectal saline given. The spasms gradually became less until they ceased completely, about two hours after the completion of the operation. The child died ten days later from the primary infection. Chloroform was not administered as the condition of the heart was so poor that this might have further endangered the life of the patient.

I have never previously heard of a case of tetany following ether convulsions. It seems to me that this case tends to support the theory that ether convulsions are due to the diminished active fraction of the serum-calcium, which leads to neuromuscular irritability.—I am, etc.,

London, W.1, Sept. 13 A. OPENHEIM, D.A.

Aetiology of Erythema Nodosum

SIR,—In 1902 a young girl, aged 26, came into my ward at the Prince Alfred Hospital, Sydney, with the diagnosis of rheumatic fever by three doctors. Her pulse was 120 and her temperature 99.8°–100°. Her weight was 7 st. 12 lb. Both ankles and left wrist were swollen and showed typical erythema nodosum. Her brother had died of Addison's disease. After rest the temperature fell below 99°. I then tested her with tuberculin; she was very sensitive: indeed, a dose once raised the temperature over 104°. She was treated with tuberculin alt (T.A.) alone. After treatment the joints became normal again. Her weight increased to 9 st. 10½ lb; the erythema nodosum vanished, and six years later she was quite well. Salicylates had failed—tuberculin succeeded.

At that period the great dermatologists Radcliffe Crocker (my teacher) and Hector Mackenzie considered erythema nodosum to be a *rheumatic* lesion. Even in 1920 Osler wrote in his great textbook: "Erythema nodosum. . . . Some regard it as a symptom of tuberculosis, but clinically we rarely see any definite association." I am not a genius, as Sir William Osler certainly was, but I can declare that I have never seen erythema nodosum except in tuberculosis; and in my experience erythema nodosum always reacts to tuberculin in diagnostic doses and clears up rapidly with therapeutic doses of tuberculin. I cannot imagine that any English dermatologist who uses tuberculin doubts that erythema nodosum is a tuberculous lesion and nothing else. At any rate in my experience erythema nodosum is never a rheumatic lesion, nor caused by haemolytic streptococci.—I am, etc.,

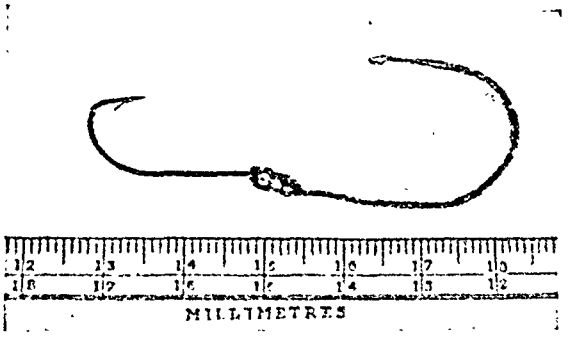
W. CAMAC WILKINSON, M.D.Lond.

London, W.1, Sept. 20.

Foreign Body in Rectum

SIR,—I was recently interested in treating a costermonger, aged 60, who attended here having had fifteen hours of rectal discomfort and desire to defaecate with no relief. Two days previously he had eaten several jellied eels.

On physical examination I discovered a piece of cheap fishing line protruding ex ano with no evidence of haemorrhage. In his anal canal this passed upwards to a fish-hook, one inch long, which lay with its hackle pointing inferiorly and its barb lightly caught in one of the valves



of Ball. When pushed upwards, and partially enclosed in the crook of my examining finger, I was able to deliver it without much pain or trauma.

Though openly congratulating the old man on a magnificent escape, I viewed the two possible causes of the presence of this "ectopic" fish-hook with wonder: (1) If inserted anally, it was an extraordinary weapon for use in anal eroticism, etc. (2) If it journeyed downwards with the eels' remains, what an amazing freedom for a hook which is designed efficiently and quickly to pierce mucous membrane.—I am, etc.,

London Hospital, E., Sept. 12. C. P. WARREN.

Parathyroid Extract and Enlarged Prostate

SIR,—In answer to Dr. F. O. Taylor's and several personal letters I wish to express regret at being so vague in the statement I made on the cure of enlarged prostate by parathyroid extract (*Journal*, August 21, p. 402). I learnt of the treatment from Dr. Wood when on holiday, and have been unable to get in touch with him since. True it was only a solitary case, but the result was so dramatic that I was anxious to hear if any of your readers knew the rationale of it. The parathyroid preparation used was Parke Davis extract 1/10 grain, equivalent to 1 grain—not 1/2 grain as previously stated—of fresh gland, given orally.—I am, etc.,

London, W.1, Sept. 17. A. P. BERTWISTLE.

Safe Milk

SIR,—Is it not time that responsible publications like a Government White Paper or a *Times* leading article ceased to mislead the public by speaking of "clean" milk when what matters is "safe" milk? The householder is thereby taught to think that if visible cleanliness is practised in what he sees of farm or dairy premises, and if his milk bottle is duly labelled "accredited," then he is safe. Enteric or tuberculosis bacilli may lurk in thousands, but they are unseen. Why are we always afraid to grasp the nettle? It is safety, not cleanliness, that really matters, and when the *Times* (September 17) says "clean milk is more attractive than dirty milk" it reassures a public that knows its milk supply is clean aesthetically and thinks therefore it is safe.—I am, etc.,

Peppard Common, Oxon, Sept. 20. ESTHER CARLING.

Importance of Post-mortem Examinations in Inquest Cases

SIR,—Some difficulty may be experienced in obtaining post-mortem examinations in inquest cases admitted to hospital because the coroner may exercise his right to refuse to grant them when asked to do so by house officers. The reasons for this, I believe, are twofold. First a desire to save the pocket of the taxpayer, and, secondly, a view that young house officers who might be over-anxious to obtain post-mortem examinations in this sort of case in order to obtain the two or three guineas which such an examination allows them should be discouraged from so doing. The latter view, which is resented by house officers, is usually quite unjustified, as they are instructed to apply to the coroner for a post-mortem by the honorary medical staff in all cases of road accident deaths or other deaths where there has been any doubt as to the probable cause of death. A refusal to allow these examinations places considerable difficulties in the way of the medical witness who is called upon to state in his opinion the cause of death at the inquest, and, in addition, it has led on more than one occasion to the return of a wrong verdict.

I have in mind, in particular, two cases, one of a young soldier who, at the local barracks, jumped over a horse whilst performing gymnastic exercises, and complained of transient pain in the back part of his neck. He was later admitted to hospital in an unconscious condition, and an *x*-ray examination revealed what at the time was thought to be a fracture of the cervical spine. He subsequently died, and the house-surgeon, on my instructions, asked for a post-mortem examination, which was refused. There were some very puzzling points about the case, one of which was a persistent hyperpyrexia. At the inquest the house-surgeon said that he could not state what the cause of death was unless a post-mortem examination was allowed. The coroner, however, overruled him and said that he was satisfied that the cause of death was accidental, due to a fracture of the cervical spine, and this verdict was returned. It subsequently transpired that another junior house-surgeon interested in the case, and not appreciating that it was an inquest one, had obtained permission from the relatives and had performed a post-mortem examination, which revealed that the so-called fracture of the cervical spine was only a congenital abnormality, and that the man had a number of small aneurysms on the circle of Willis, one of which had ruptured, giving rise to a haemorrhage, which had extended down into the region of the pons. The inaccurate verdict in this case was not a serious matter, but it is possible that the man could have ruptured an aneurysm such as this while sneezing, or even spontaneously.

The second case was one in which a man of 60 was cycling across some cross-roads and was hit by a car, turned a somersault twice in the air, landing on his head. He was brought to hospital suffering with concussion and injury to the chest. A radiograph of the chest failed to reveal any fractured ribs, but signs of fluid in the chest developed and nearly a pint of blood was aspirated from one side. The chest again filled up with blood and the old man developed signs of cardiac failure and died. A post-mortem examination was requested by the house-surgeon, but again the coroner refused to grant it, and at the inquest a verdict of death from natural causes was returned, although there was no evidence whatever of previous ill-health.

In the provinces coroners are often lawyers without medical knowledge. It is surprising that a verdict of death from natural causes could be returned in the case of a man who had been knocked down by a car, admitted to hospital with concussion, and in whom a haemothorax was present. There was not the slightest doubt in the minds of all the doctors who saw this case that his death was entirely due to the accident. I am using the publicity of your columns to voice a feeling that radical changes are needed in a system which may allow a coroner without medical knowledge to adopt the role of philanthropist and thus render more difficult the doctor's task, which is often difficult enough, of stating the probable cause of death. I would put forward a strong plea that post-mortem examinations should be available in inquest cases if the doctor in charge of the case so desires, or as an alternative that post-mortem examinations be compulsory in all inquest cases.—I am, etc.,

R. BROOKE, M.S., F.R.C.S.,
Honorary Surgeon, Royal West Sussex Hospital.

West Worthing, Sept. 10.

Homes for Cancer Patients

SIR,—I was recently shown a copy of a pamphlet setting forth the aims of a charity called "County Homes for Cancer." Neither I nor any colleagues I questioned had been circularized, although the appeal had found its way into at least one newspaper office.

I understand that a public appeal for funds on behalf of the charity is in active progress. In view of the fact that the policy of the homes is to establish wooden hutments in each county in which cancer patients may be observed and treated until the end, would it not be a wise preliminary to an appeal to seek the views of the medical profession as to the best type of building for such a purpose, and the probable cost of installing such expensive yet essential items as radium and deep *x*-ray therapy apparatus in every county, where they may well duplicate existing equipment in established institutions?—I am, etc.,

London, W.1, Sept. 18. HAMISH WALLACE.

Provincial Diabetic Clinics

SIR,—The Diabetic Association would be glad to publish in its journal particulars of diabetic clinics which are held in the provinces. This information is frequently asked for by diabetics who live outside London and wish to attend a clinic. We should be very grateful if readers would send particulars of such clinics to the secretary, the Diabetic Association, 124, Baker Street, London, W.1.—I am, etc.,

STELLA CHURCHILL,
Hon. Secretary, Medical Committee.

Sept. 14.

Obituary

DE BURGH BIRCH, C.B., M.D.,

Emeritus Professor of Physiology, Leeds University

The death took place in a nursing home at Bournemouth on September 18 of Dr. de Burgh Birch, who was professor of physiology in the University of Leeds from 1883 to 1917, and dean of the faculty of medicine for eleven years.

The son of de Burgh Birch, M.D., of the Madras Medical Service, he was born on May 18, 1852, and was educated at Hofwyl, Switzerland, at Manilla Hall, Clifton, and at the Bristol Medical School and General Hospital, proceeding to the University of Edinburgh in 1874 and graduating there as M.B. and C.M. in 1877. Then at the end of three years as assistant to the Professor of Institutes of Medicine he took the M.D., gaining the gold medal, and was elected a Fellow of the Royal Society of Edinburgh. On his retirement from the service of the University of Leeds in 1917, after thirty-four years as a teacher, he was given the title of Emeritus Professor.

Professor Birch was for many years a member of the British Medical Association, which he joined in 1883 on his appointment as the first full-time professor of physiology at Leeds. He was a vice-president of the Section of Pathology and Bacteriology at the Annual Meeting at Leeds in 1889, and vice-president of the Section of Physiology at Bristol in 1895. He had long held a commission as a medical officer in the old Volunteer Force, and for these services was created C.B. in 1909; he also received the Volunteer Officers' Decoration. For two years during the war he was A.D.M.S. to the 62nd (West Riding) Territorial Division.

ANDREW H. WATT, M.B., F.R.C.S.ED.,

Consulting Physician, Johannesburg Hospital

We regret to announce the death on September 3, at Auckland Park, Johannesburg, of Dr. Andrew Watt, who was well known in South Africa as a physician and radiologist and as an authority on silicosis. He gave up consulting practice some years ago to become chief medical officer to the Rand Mutual Assurance Company.

Andrew Hutton Watt, a Scotsman by birth and parentage, was born in 1871, and from the Royal High School went to study medicine at Edinburgh University. He graduated M.B., C.M., with honours, in 1897, and took the F.R.C.S.Ed. in 1899 after holding resident posts at the Royal Infirmary and the Royal Hospital for Sick Children. During the Boer War he served as a civil surgeon, and returned to South Africa after the declaration of peace, gradually building up a high reputation as an expert in the accidents and diseases of the gold-mining population of the Rand. He was for some years physician to the miners' phthisis sanatorium at Springkell, and then settled in Johannesburg as a consulting physician and radiologist. He was the author, with L. G. Irvine, J. P. Johnson, and W. Steuart, of *Silicosis (Miners' Phthisis) on the Witwatersrand.* On retiring from the active medical staff of the Johannesburg Hospital he was elected honorary consulting physician.

Dr. Watt joined the British Medical Association in 1898 as a member of the Johannesburg Division. He was president of the Witwatersrand Branch in 1926–7 and a member of the Federal Council. In 1932 he was appointed a member of the South African Medical Council, through which body his deep knowledge of industrial disease and insurance problems was always at the disposal of the Union Government.

GEORGE H. SIMMONS, M.D.

Dr. Alfred Cox writes:

May I add a few words to your feeling tribute to my old friend? For many years he was, in a way, my *opposite number*, for though he resigned the secretaryship of the A.M.A. in 1911, as general manager he kept an alert eye on all medical affairs inside and outside the United States. I was introduced to him on one of his visits by my then chief, Whitaker, and a friendship grew up between us which was greatly strengthened by many letters I had from him. He took a great interest in our insurance struggle and favoured me with his views on our tactics—views which were always shrewd. But his chief characteristic was the one on which your obituary notice laid stress—his ability to look at affairs in a detached and dispassionate way. This was very valuable to his friends, for I need hardly say that at the time of the fight none of us was able thus to regard affairs.

In all the crucial periods of the British Medical Association's work during my time I could always depend on his interest and on his advice—spontaneously offered, for he was an assiduous reader of our *Journal.* Though a patriotic American he was proud of his English birth and loved the scenes of his youth, to which he often returned, never without paying a visit to B.M.A. House. His modesty and self-effacement, to which you have justly paid tribute, concealed immense energy and a very sound judgement. He was indeed a "grand old man," for age never dimmed his interest in his life's work.

Dr. JAMES FORSYTH FALCONER, who died suddenly at Hastings on September 12, was born at Elgin in 1875, the son of James Leslie Falconer. He was educated at Elgin Academy and the University of Edinburgh, and took the M.B. and Ch.B. degrees in 1898 and the certificate in medical psychology in the following year. His first appointments were those of house-physician to the Royal Hospital for Sick Children, Edinburgh, house-surgeon to the Glasgow Royal Infirmary, and assistant physician to the Edinburgh Fever Hospital. He was then for some years assistant surgeon and ophthalmic surgeon to the North Ormesby Hospital, Middlesbrough, before settling in Brixham, where he became medical officer of health, Admiralty surgeon, medical officer to the child welfare centres, visiting surgeon to the Seamen's Orphanage, and surgeon to the Brixham Hospital. Dr. Falconer joined the British Medical Association in 1900 and had held office as chairman of the Cleveland Division, Representative at the Annual Meeting in 1919, and a member of the Scrutiny Subcommittee of 1919–20.

Universities and Colleges

UNIVERSITY OF LONDON

A course of three lectures on "Social and Geographical Pathology of Cancer and Tuberculosis" will be given by Dr. Georg Wolff, formerly Director of the Section of Medical Statistics in the Public Health Department of the City of Berlin and Privat-Dozent in the University, at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C., on October 4, 5, and 6, at 5.30 p.m. The chair at the first lecture will be taken by Sir Ernest Graham-Little. Admission to the lectures is free, without ticket.

The Services

Colonel W. E. R. Williams, O.B.E., I.M.S., has been appointed Honorary Surgeon to the Viceroy and Governor-General of India.

COMMISSIONS IN THE R.A.M.C.

The War Office announces that applications are invited from medical men for appointment to commissions in the Royal Army Medical Corps. Candidates will be selected for commissions without competitive examination, and will be required to present themselves in London for interview and physical examination on or about October 21, 1937. They must be registered under the Medical Acts, and normally must not over the age of 28 years.

Successful candidates will in the first instance be given short-service commissions for five years. During the fourth year of this period they will be given the opportunity of applying for a permanent commission. Those not selected will retire on completion of five years' service with a gratuity of £1,000.

Full particulars of the conditions of service and emoluments, also forms of application, may be obtained on application, either by letter or in person, to the Assistant Director-General, Army Medical Services, the War Office, London, S.W.1.

Medical News

The annual dinner of past and present students of University College Hospital will be held in the library of the Medical School, University Street, W.C., on Friday, October 8, at 7 for 7.30 p.m., when the chair will be taken by Dr. W. F. Addey. Applications for tickets, accompanied by remittances (tickets 12s. 6d. each, not including wines), should be made not later than October 7 to the dinner secretary, University College Hospital Medical School, University Street, W.C.

The annual dinner of the University College Hospital Medical Women's Association will be held at the Langham Hotel, Portland Place, on Friday, October 8, at 7.30 for 8 p.m., when the chair will be taken by the president, Dr. Freda Kelly. Members intending to be present should notify Dr. A. L. Winner, 4K, Portman Mansions, Baker Street, W.1, before October 5.

The annual dinner of the Middlesex Hospital Medical School will be held at the Savoy Hotel on Friday, October 1, at 7.30 p.m., with Dr. Douglas McAlpine in the chair.

The annual old students' dinner of St. Thomas's Hospital will be held at the Dorchester Hotel, Park Lane, on Friday, October 8, at 7.15 for 7.45 p.m., with Dr. J. S. Fairbairn in the chair.

The annual dinner of past and present students of St. Mary's Hospital Medical School will be held at Claridge's on Saturday, October 2, at 7.30 p.m., with Mr. V. Zachary Cope in the chair.

A course on recent advances in the knowledge of infectious diseases of children will be held at the University Children's Clinic of the Charité Hôpital, Berlin, under the direction of Professor Bessau, from October 18 to 23. In addition to the ordinary infectious diseases of childhood, rheumatic infection, meningitis, poliomyelitis, encephalitis, pneumonia, tuberculosis, and syphilis will be discussed. The fee is RM. 50. Further information can be obtained from the Berliner Akademie für ärtzliche Fortbildung, Robert Koch-Platz 7, Berlin, N.W.7.

Lord Horder will give an address at the opening session of the Third National Coal Convention, which is to be held at Harrogate on October 6 and 7.

A sessional meeting of the Royal Sanitary Institute will be held in conjunction with the Welsh Branch of the Society of Medical Officers of Health and the North Wales Centre of the Sanitary Inspectors' Association in Llandudno Town Hall on Friday, October 1, at 4 p.m., when there will be discussions on "Tuberculosis in Wales: A Stocktaking," to be opened by Dr. D. A. Powell, and "The Conway Mussel Purification Tanks," to be opened by Dr. R. W. Dodgson. Dr. D. E. Parry Pritchard will read a paper on "Notes on a Recent Outbreak of Bacillary Dysentery."

The French League against Rheumatism will hold its annual meeting in Paris on October 9, when there will be a clinical meeting in the morning at the Hôpital Saint-Antoine and a meeting at the Faculty of Medicine in the afternoon. Further information can be obtained from the Permanence de la Journée du Rhumatisme, 23, Rue du Cherche-Midi, Paris, 6e.

The annual meeting of the French Society of Oto-rhino-laryngology will be held in Paris under the presidency of Professor Brémond of Marseilles from October 18 to 21, when the subjects for discussion will be intracranial surgery of the auditory nerve by Drs. Aubry and Ombrédanne, and acute inflammation of the larynx by Drs. Le Mée, André Bloch, and Bouchet. Further information can be obtained from the general secretary, M. Henri Flurin, 19, Avenue Mac-Mahon, Paris, 17e.

A series of ceremonies and lectures and an exhibition will be held at Prague, Brno, and Bratislava from September 24 to 28 to commemorate the one hundred and fiftieth anniversary of the birth of the celebrated histologist J. E. Purkinje.

On the occasion of the annual Buckston Browne Dinner on November 11 it is proposed to hold an exhibition of works of art by Fellows and Members of the Royal College of Surgeons of England, which will remain open for about three weeks and will be held in one of the Museum Rooms at the College. Any Fellow or Member wishing to exhibit some of his work, either pictorial or sculptural, is asked to communicate with Dr. John Beattie, Royal College of Surgeons, Lincoln's Inn Fields, W.C.2, as soon as possible.

The International Congress of Hepatic Insufficiency was opened formally at Vichy on September 16 by M. Marc Rucart, French Minister of Public Health, who arrived at the spa on September 15 to open a new third-class bathing establishment. Dr. Hamilton Fairley spoke on behalf of the British delegation at the opening session, and Dr. Anthony Bassler was spokesman for the American delegation. At the request of M. Rucart a minute of silence was observed in tribute to the late President Masaryk just before the Czechoslovakian delegate, Professor Josef Pelnar, spoke. Among the other specialists representing their countries on this occasion were: Professor Michele Bufano, director of the Medical Clinic of the Faculty of Medicine of Sassari, Italy; Professor R. Brunel Hawes of the Faculty of Medicine of Singapore; Professor Alfred Mousseau of Montreal; Professor W. H. Craib, Head of the Department of Medicine of Johannesburg; Professor Dimitrije Antitech of the Faculty of Medicine of Belgrade; and Professor Soliman Azmi Pacha of the Cairo Faculty of Medicine.

A Peter Pan children's party in aid of the reconstruction fund of the Hospital for Sick Children, Great Ormond Street, is being given by the Lord Mayor and Lady Mayoress at the Mansion House on Thursday, September 30. Queen Mary and the Princess Royal have consented to attend, and Queen Mary will receive purses.

The Earl of Derby will open the new extensions to Evans's Biological Institute, Runcorn, on the afternoon of Thursday, October 7.

The Mayor of Southwark is opening the new Health Services Department of the borough in Walworth Road to-day, Saturday, September 25, at 3.30 p.m.

The annual Motor Exhibition will be held this year for the first time at Earl's Court, London, from October 14 to 23.

Sir Kingsley Wood, the Minister of Health, visited the Tyneside district on Tuesday and Wednesday of this week, and Carlisle on Thursday. On Monday he was the guest of the Lord Mayor at the Mansion House at Newcastle. After addressing representatives of local authorities at the Newcastle County Hall he inspected the work of local authorities at Wallsend, Jarrow, Hebburn, Felling, and Gateshead. On Wednesday morning he visited hospitals, housing estates, and other institutions in Newcastle, and in the afternoon opened the municipal clinic at South Shields.

With the September issue the *Journal of the Institute of Hygiene* ceases to appear as a separate publication and becomes merged with the *Journal of State Medicine*. The new journal will appear on October 1 under the title of the *Journal of the Royal Institute of Public Health and Hygiene*.

September 30 marks the fiftieth anniversary of the death of the famous German surgeon, Bernhard von Langenbeck, the founder of the German Society of Surgery.

The death is announced of Mr. A. P. Molteno, who in 1919, with his wife, made a gift of £36,000 for building and equipping the Molteno Institute for Research in Parasitology and Biology at Cambridge. The institute, under the direction of Professor G. H. F. Nuttall, F.R.S., was opened at the end of 1921 by Lord Buxton, late Governor-General of South Africa.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
SECRETARY, *Mediseera Westcent, London.*

The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh;* telephone: 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin;* telephone 62550 Dublin).

QUERIES AND ANSWERS

A.P.T. with Anti-diphtheritic Serum

Dr. W. L. ENGLISH writes: We get a number of throats which clear up immediately with 4,000 units of serum (anti-diphtheritic). How far is it legitimate to give a dose of A.P.T. at the same time as the prophylactic dose of serum?

Buccal and Lingual Ulcers

Dr. ALICE JOHNSON (Wimbledon, S.W.19) writes: In answer to "Puzzled" (*Journal*, September 11, p. 564), I have found Chesebrough's mentholated vaseline spread over the ulcer two or three times a day of great use.

Dr. L. FORMAN (London, W.1) writes: Recurrent painful ulcers of the mouth have been described in association with agranulocytosis, which may occur spontaneously, or with the periods, or may be produced by a drug containing pyramidon. To detect rhythmical agranulocytosis it is necessary to examine the blood one or two days before the period is due. Erythema multiforme of the mouth also produces blisters which rupture, leaving superficial ulcers. In some cases small doses of streptococcal vaccine given intradermally—for example, 2 millions at weekly intervals—may be useful.

Mr. CHARLES E. SALTER (Exmouth) writes: I have found ultimate relief in this troublesome condition by giving thyromang (gr. 1/2 and gr. 1/8) bipalatinoids (Oppenheimer) night and morning, preceded by half a tumbler of water and followed by a whole tumbler in fifteen minutes, for two to three months continuously.

Medical Treatment for Dupuytren's Contracture

"NADAUD" asks what treatment he can offer to a "small" patient for Dupuytren's contracture other than operation, and whether fibrolysin and iodolysin fulfilled their early promise.

Ultra-violet Irradiation

Dr. F. HOWARD HUMPHRIS writes: The points raised in this question (*Journal*, August 28, p. 438) cannot be answered satisfactorily in a few lines. Ultra-violet light has been used extensively for the treatment of health and for the maintenance of it. Properly administered it is likely to be of great assistance to those who are run down and overworked, but otherwise in normal health. There is no objection to its frequent use over a period of years provided dosage is more or less accurate and it is administered at properly spaced intervals. "Ultra-violet" should consult one of the many books on the subject.

Cancrum Oris

Dr. J. B. C. MADGE (Shipton Thorpe, York) writes with reference to the letter on cancrum oris in the *Journal* of August 28 (p. 438): Similar lesions are often caused by yaws or bubas, which is protean in its manifestations. Bishop Bere of the Umka Mission wrote a poem in 1888 on the subject.

LETTERS, NOTES, ETC.

"Rheumatic" and "Rheumatism"

Sir FRANK FOX, Secretary of the Empire Rheumatism Council, writes from London: Dr. George S. Banks of Aberdeen (*Journal*, August 7, p. 306) is to be congratulated on his zeal for the purity of the English language. He will be pleased to note that the Empire Rheumatism Council is not guilty of the error to which he calls attention; its title is *not* Empire Rheumatic Council.

Anti-dazzle Regulations

Readers are reminded that under the Road Vehicles Lighting Regulations, 1936, the new anti-dazzle regulations made by the Minister of Transport in April, 1936, come into force on October 3, from which date no head lamp may be used on any vehicle unless the beam of light emitted therefrom is either (1) permanently deflected downwards; (2) capable of being deflected downwards, or both downwards and to the left, at the will of the driver; (3) extinguishable by a device which substitutes a dipped light; or (4) extinguishable by a device which at the same time either deflects the beam of light from another lamp downwards, or both downwards and to the left, in such a manner as to render it incapable of dazzling at a distance of twenty-five feet any person whose eye level is not less than 3 feet 6 inches from the ground. The regulation does not apply to any head lamp fitted with an electric bulb if the power of the bulb does not exceed 7 watts and the lamp is fitted with frosted glass or other material which has the effect of diffusing the light.

Action of Meat Extracts

Dr. A. CRAWFORD (Bermondsey, S.E.) writes: The report of Dr. Boon's work on the action of meat extract in the *Journal* of August 28 (p. 412) is interesting. In view of his finding that meat extract increases the hydrochloric acid and that beef powder was the only substance examined to stimulate the excretion of pepsin, one wonders if a cold expressed beef juice, which contains coagulable protein and meat extractives, has the effect of increasing both hydrochloric acid and pepsin. I find that vague dyspepsias of the atonic fermentative type improve when a little beef juice is taken immediately before meals.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

231 The Haemolytic Constitution

M. GÄNSSLEN (*Klin. Forth.*, 1937, 4, 4, p. 607, and 5, p. 641) regards familial haemolytic icterus (acholuric jaundice, chronic splenomegalic haemolytic jaundice) as a clinical manifestation of a haemolytic constitution. This is always hereditary, its so-called acquired forms being examples of unrecognized infectious or toxic maladies; it is closely connected with other constitutional abnormalities. The essential feature is an abnormal fragility of the erythrocytes, which are convex (hence the name "spherical-cell disease," which Gänsslen uses). They are present in 90 per cent. of cases of anisomicrocytosis, combining an average diminution in diameter of from 8 to 6 or 7 μ with an increase of volume from about 88 μ^3 to 90 to 115 μ^3. The life of the spherical red cells has been computed by Heilmeyer as fourteen instead of 100 to 150 days. They undergo haemolysis in 0.44 to 0.7 per cent. saline solution, while normal erythrocytes resist 0.9 per cent.—the 10 per cent. of cases in which fragility is not or is little increased are explained by an exceptional increase of reticulocytes. Anaemia is often not pronounced, and the index is commonly from 40 to 70 per cent. of haemoglobin: the spleen is palpable in 70 per cent. of cases; the serum bilirubin is increased, and the urine, usually containing urobilin or urobilinogen, with bilirubin and bile acids during exacerbations or gall-stone attacks, is brownish red and has a brick-red fine sediment. It is these symptoms which more often than jaundice lead adult patients to seek medical advice. Jaundice is notably of varying intensity. Among the signs which Gänsslen mentions as constitutional anomalies, which help in the diagnosis of the atypical case and of the apparently healthy transmitter to descendants, are: (1) chronic crural ulcer in young subjects; (2) "tower skull," with vertical brow, early union of cranial sutures, and nasal retraction; (3) a relative preponderance of medulla over cortex in the long bones and broadening of tarsus and carpus, which is due, like the cranial changes, to increased medullary function; (4) microphthalmos, abnormalities of iridal pigmentation, and cataract; and (5) hypogenitalism and infantilism. The prognosis is not altogether unfavourable and longevity is fairly common, although in some families the mortality in infancy from the disease is very high. In the mild cases the author has found arsenic and blood transfusions of use, but liver treatment is ineffective and iron has been reported as dangerous. Irradiation of the spleen induces haemolytic crises, and should be abandoned. Splenectomy leads to lasting improvement, although slight recurrences, and occasionally slight icterus without anaemia, may persist: the mortality in Gänsslen's forty cases was 3.4 per cent. Splenectomy is best carried out between crises, and there is less danger of embolus and thrombosis if it is done during childhood. It may be preceded by transfusions and injections of adrenaline, which diminish the splenic tumour. A specially rapid skeletal growth often follows splenectomy, and there is usually a very speedy increase in platelets and a diminution of reticulocytes. Some degree of anisomicrocytosis usually persists.

232 Immunity to Small-pox

G. A. HALLDÉN (*Hygiea*, Stockh., July 15, 1937, p. 490) has investigated the incidence of small-pox in Sweden in the families in which cases of it occurred between 1892 and 1893 and between 1900 and 1917. The limitation of his studies to such infected families was determined by the consideration that there could be no question as to exposure to infection. According to one of his tables, 89 out of 305 vaccinated persons exposed to family infection developed small-pox; vaccination had therefore proved effective in over 70 per cent. Out of the eighty-nine persons who contracted small-pox 70.7 per cent. suffered from it in only a mild form. After giving other similar statistics the author comes to the conclusion that vaccination early in childhood remains effective in from 65 to 70 per cent. of a community of all ages exposed to small-pox, and in those who do contract it it usually takes a comparatively mild form. The author considers that the English and German small-pox committees at the end of the last century gave too short a term for the duration of the immunity conferred by vaccination when they put it at only ten years. Holmgren and Lindström showed as recently as 1937 that effective immunity to small-pox is still enjoyed by more than 40 per cent. of the persons whose vaccination in childhood dates back some five decades.

233 Pleurisy in Artificial Pneumothorax

G. TORELLI (*Ann. Ist. Carlo Forlanini*, April, 1937, p. 13) divides the cases of pleurisy he is reviewing into lamellar pleurisy and pachypleuritis with or without adhesions, and he gives an account of a hundred cases of each. In lamellar pleurisy the thickening was less than 2 mm.; pachypleuritis did not commonly follow, and the thickening in 20 per cent. of cases persisted for at least a year. Effusion occurred in lamellar pleurisy, pachypleuritis, and adherent pachypleuritis in 73, 85, and 95 per cent. of cases respectively. Pachypleuritis always affected the parietal, sometimes the visceral pleura, and in the majority of cases the whole parietal pleura from base to apex. Adhesions usually began at the base during the process of resorption of an effusion—hence the importance, during pneumothorax treatment, of the early evacuation of pleuritic fluid—but Torelli only saw total obliteration of the pleural cavity by adhesions in 5 per cent. of cases of adherent pachypleuritis. Although hemithoracic retraction with scoliosis and the classical signs described by Laennec may cause the presence of adhesive pachypleuritis to be suspected, the diagnosis is essentially radiological. In about 15 per cent. of cases Torelli found an "opaque pneumothorax": other screen signs which were common but not constant were rectilinear, arcuate, or bayonet-shaped tracheal displacement and dislocation of the oesophagus and heart. Some degree of diaphragmatic elevation was always present.

Surgery

234 Renal Haemangiomata

N. DALAKOPOULOS (*Z. Urol.*, 1937, **37**, 7, 458) reports forty-one cases of renal haemangiomata recorded in the literature, and describes one case of his own in which the haemangioma occurred in the upper two-thirds of the kidney. Histologically the tissue was rich in cells containing chromatin nuclei. In between the cells, which were surrounded by small cavities partially filled with blood, collagen fibrils were seen; mitosis was rare. In some places larger cavities also partially filled with blood were seen. The kidney was removed and the patient was discharged as cured. Renal haemangiomata are benign tumours, and resemble telangiectases of the skin and cavernous haemangiomata of the liver. Haematuria is the main symptom, and usually occurs suddenly, but may last for some time. Coagulation of the blood may produce typical renal colic. Symptoms lasted in one recorded case for twenty years, in another operative intervention was required after three days. Quiescent periods of variable duration may occur. A renal tumour is but rarely

palpable, and slight degrees of trauma may produce haematuria. An accurate diagnosis is impossible, but a pyelogram may give rise to suspicion of tumour formation. Haemangiomata are situated near the renal papillae in 35 per cent. of cases, and in 65 per cent. they occur either at the upper pole (25 per cent.) or in other parts of the kidney. Complications are rare, and there is no tendency to malignant degeneration. Nephrectomy is the treatment of choice, though resection of one of the renal papillae has been recorded six times in the literature. Decapsulation and other attempts to stop bleeding are only of temporary value.

235 Ulcerative Ileitis

F. LANDOIS (*Zbl. Chir.*, July 17, 1937, p. 1690) describes one case of ulcerative ileitis. He operated on a girl, aged 21, following a diagnosis of acute appendicitis. He found that the appendix was healthy, but that a piece of small intestine near the caecum, about 40 cm. long, was inflamed and covered with a fibrinous exudate. It was oedematous and cyanosed. The patient's condition deteriorated after closure of the incision, and the abdomen was therefore reopened and the inflamed bowel resected. Landois points out that although this condition is rare it is a well-defined clinical and pathological entity occurring only in the lowest portion of the ileum. The aetiology is quite unknown. Usually conservative measures result in cure, and the author believes that his case, which required operation, is an exception.

236 Varying Sensitivity to Pain

A. JORES and J. FREES (*Disch. med. Wschr.*, June 18, 1937, p. 962) have investigated the fluctuations throughout the day of the capacity of the body to feel pain by studying the effects of an electrical current of different strengths on the teeth. Between the hours of 8 a.m. and 8 p.m. they tested seventeen persons in this manner, as well as three persons at other hours. All twenty reacted in the same way, their pain chart showing that their sensitiveness to pain increased slowly during the day until the peak was reached about 6 o'clock. After that there was a fairly rapid decrease followed by a comparatively uniform level of sensitiveness during the night. Since the sense of pain is a central phenomenon, the authors are inclined to draw general conclusions from these observations on the teeth, and to apply them to other parts of the body. The clinical observation that patients find their aches and pains worst at night is confirmed by these experiments on the teeth, and the authors suggest that their observations indicate the desirability of carrying out all painful operations early in the morning instead of late in the afternoon. In their review of the fluctuations throughout the twenty-four hours in certain phenomena concerned with the body, the authors note that spasmodic contractions of the unstriated muscles, with resultant biliary and renal colic, occur most often during the night or the evening, that infants suffering from nutritional disturbances tend to die oftener in the early morning than at any other time, and that cases of sudden death from status lymphaticus and from spasm of the pylorus are most common between the hours of 5 a.m. and 6 a.m.

237 Bony and Cartilaginous Breast Tumours

According to M. RASO (*Pathologica*, June 15, 1937, p. 229) sarcomata probably do not account for more than 6 per cent. of breast tumours, or 3 per cent. if deduction is made in the case of cystosarcomata which take a clinically benign course. About 1 per cent. occur in males. A large majority are mixed tumours, and probably over 50 per cent. are secondary to fibro-adenoma. A case is described of a rapidly lethal chondrosarcoma, with an early subcutaneous metastasis in the thigh, in a woman aged 45. Numerous giant cells were present, as well as calcareous deposits and spaces resembling Hunterian canals. She had previously had a fibro-adenoma. The literature contains descriptions of seventy-four cases of mammary tumour with cartilage or osteoid tissue, or both, three of which were in males, and they nearly all occurred in the fifth and sixth decennia. Although ulceration is rare it presents no special clinical characteristics, except that axillary lymphoglandular metastases are not often found in sarcomata. About two-fifths of the tumours contained sarcomatous zones, about one-third carcinomatous, and some both; but the *majority* were benign tumours. Cartilage and bone, or both, were present in the metastases. Mammary tumours containing cartilage or bone may be mixed-type (teratomatous) tumours, and they may arise in mesenchymal developmental detachments of primitive rib or clavicular tissue, but are due in most cases to connective-tissue metaplasia. The presence of giant cells in sarcoma of the breast is distinctly uncommon; in Raso's case they were abundant near the cartilaginous and osteoid zones, and resembled osteoclasts.

Therapeutics

238 Protection Against Ultra-violet Irradiation

E. URBACH and F. KRAL (*Klin. Wschr.*, July 3, 1937, p. 960) have been able to prove experimentally that the skin reaction to ultra-violet irradiation can be prevented by rubbing the skin with ol. bergamottae beforehand, and by giving the patient a sufficient dose of vitamin C by mouth, rectum, or intravenous injection. The protection is temporary, and is only effective against the short waves of a mercury-vapour lamp and not against an arc lamp. The authors believe that it is produced by a chemical combination between the ol. bergamottae and the vitamin C. Only the crude ol. bergamottae is of value: no other essential oil seems to possess this protective quality.

239 Treatment of Rheumatism

E. SCHLIEPHAKE (*Zbl. inn. Med.*, July 10, 1937, p. 577) is of the opinion that all sources of focal infection must be removed before any other treatment of rheumatic conditions is instituted. The teeth, tonsils, gall-bladder, and the urogenital system may require attention, after which short-wave therapy may be started. The author does not advocate temperatures higher than 38° C.: more treatments are required than when higher temperatures are used, but improvement is more lasting. The condition may temporarily become worse and improvement only begin at the end of the course. The author had good results in 80 per cent. of cases, usually of chronic conditions in patients who had previously received various treatments without result. His criterion of improvement is restoration of function and relief of pain. Anatomical changes could not be influenced. About one-third of his patients were treated with short-wave therapy alone, but the author believes that if medical measures are added treatment is less drastic and is shorter, and for this purpose he uses gold preparations, salicylates, and atophan. A diet poor in carbohydrates is also given for five days after the temperature has become normal.

240 H. SEEL (*Fortschr. Therap.*, July, 1937, p. 391) points out that in spite of the advances in the study of rheumatism and in the increase of therapeutic adjuvants the place of the salicylates is still recognized. They are of value (1) because of their bactericidal, antiseptic, and desensitizing properties, (2) because of their central analgesic action and their ability to inhibit inflammation, (3) because they increase metabolism and lower temperature, and (4) because they can be absorbed locally and stored in the tissues. When applied locally they induce hyperaemia by enlarging the lumen of the capillaries, by their absorption and storage in the diseased tissue, by their local analgesic action, and by changing the reaction of diseased

tissue. The pharmacological action of salicylates on the rheumatic organism is not yet clear, however. In afebrile local conditions the inunction of salicylate derivatives is of value. In febrile affections, especially of the joints, oral and cutaneous therapy is indicated. Local inunction is contraindicated when heat in the form of fomentations or diathermy is applied, because physical hyperthermia in combination with chemical hyperthermia often results in local burns. In certain severe cases such a reaction may be made use of in order to increase the effect of salicylates.

Ophthalmology

241 Indirect Illumination of the Cornea

F. TERRIEN (*Arch. Ophthal.*, Paris, June, 1937, p. 501) says that one of the most useful applications of the slit-lamp is in the discovery of fine keratic precipitates in iridocyclitis or low-grade choroiditis. The slit-lamp shows up all but the finest precipitates, which can only be seen by the ocular transilluminator, which instrument has not hitherto been used in examining the anterior segment of the eye. The transilluminator is applied perpendicularly to the periphery of the cornea, which has been anaesthetized with a drug that does not alter the epithelium, and thus does not obscure the view. The light is reflected from the iris and throws up the outline of the finest precipitates sharply. Its greatest value is in the diagnosis of secondary glaucoma, which is often missed when due to low-grade iridocyclitis, and in detecting vascular "ghosts" in the interstitial layers. The instrument has the added advantage of being portable.

242 Prognosis of Papilloedema

G. HOLMES (*Brit. J. Ophthal.*, July, 1937, p. 337) discusses papilloedema due to raised intracranial pressure. The oedema of the nerve head for a time causes little structural or functional disturbance, and relief by operation will prevent the overgrowth of interstitial tissue in the nerve head which leads to blindness. Operation is often contraindicated by the impossibility of completely removing the tumour, by the shortening of the expectation of life, or by the considerable physical disablement or mortality of the operation, or by the absence of localizing signs. Papilloedema does not always cause disturbance of vision, nor even when it is long-standing does it invariably lead to blindness. It may thus be non-progressive and may subside without surgical intervention. Operation is called for in cases in which there is rapid development of papilloedema or intense congestion of the veins with haemorrhages, or when a macular fan or soft exudate on the disk appears, or there is a reduction in calibre of the arteries, or white lines are seen along the vessels, or where there is greying of the disk and reduction in vision and fields, and when temporary amaurosis with highly swollen disks is present. Operation results in subsidence of papilloedema and an improvement of slightly impaired vision and fields. The vision rarely fails after operation, particularly with a posterior fossa tumour and in the absence of any preoperative warning.

243 Dimethyl Sulphate Poisoning

S. DE GRÓSZ (*Amer. J. Ophthal.*, July, 1937, p. 700) describes the symptoms which may arise in chemical factories or after exposure to poison gas, and attributes them to the splitting off of the acid radical in the tissues. This occurs most readily on moist mucous surfaces, and when present in the eye results after a latent period of from six to eight hours in swollen lids, photophobia, lachrymation, blepharospasm, conjunctivitis, corneal roughening and scarring, iritis, and temporary field contraction and pallor of the disk. The signs are identical with those found in the late stages of mustard-gas poisoning. The sensitivity of the conjunctiva to strong light, wind, dust, and smoke persists long after the symptoms have subsided. The prognosis must therefore be guarded. Adequate douching with sodium bicarbonate, followed by the application of an alkaline ointment and the usual treatment for corneal lesions, is advised.

244 Loewi's Sign

L. HUBERT (*Arch. Ophthal.*, Chicago, June, 1937, p. 1076) confirms the work of Loewi, who said that epinephrine only dilates the pupils when the sympathetic system is hyperirritable. If the dilator of the iris and the other smooth muscles of the eye are cut off from the superior cervical ganglion, epinephrine will cause dilatation, elevation of the lid, and slight exophthalmos. This helps in localizing the lesion in cases of partial or complete Horner's syndrome. Irritation of the sympathetic fibres in ear disease is manifested, and, since simple primary glaucoma is attended by irritation of the sympathetic, susceptibility to adrenaline may be present long before any signs of glaucoma show themselves. A similar reaction is found in Graves's disease and in diabetes.

245 Quinine in Ophthalmology

J. W. ROBINSON (*New Orleans med. surg. J.*, July, 1937, p. 30) states that quinine may be used with success in ophthalmology on account of its astringent, bactericidal, and anaesthetic properties, and because it inhibits scar-tissue formation. It may be used either in the form of a 2 to 4 per cent. quinine bisulphate ointment or in a 2 per cent. solution. The bisulphate is fairly soluble in water and is less acid and less irritating to the eye than are other salts. Robinson has used it with success in cases of interstitial keratitis, trachoma, old and recent corneal opacities, vernal catarrh, and phlyctenular conjunctivitis. He also recommends a 1/2 to 2 per cent. solution of optochin (ethyl-hydroxycupreine), which is one of a number of alkaloids formed from the replacement of one of the two chemical rings composing quinine by an alkyl group, and which resembles quinine but is less active. It is a weaker protoplasmic poison, but is bactericidal in the presence of protein, and is antiseptic and anaesthetic. It is especially toxic to all types of pneumococci, streptococci, and staphylococci, and is of value in the treatment of conditions due to the Koch-Weeks and the Pfeiffer bacillus, and in some virus infections causing catarrhal conjunctivitis. Both quinine and optochin can be used in conjunction with mercury and the iodides.

246 Exophthalmos

R. DORÉ (*Union méd. Can.*, July, 1937, p. 731) describes the case of a woman, aged 47, who was sent to him with a diagnosis of exophthalmic goitre. For the past three months she had suffered from nervousness, insomnia, palpitations, anorexia, polyuria, and loss of weight. Clinically, marked exophthalmos was present: a mitral murmur was heard; the pulse was slow and regular: a trace of albumin was found in the urine, but there was no evidence of hyperthyroidism. The patient suffered from overstimulation of the sympathetic nervous system. Doré points out that exophthalmos may be present in conditions other than Graves's disease. It may be found in the presence of excessive fatty tissue in the orbit, in the presence of dilated veins behind the eyeball, after experimental production of venous thrombosis, and in the dog after experimental excitation of the cervical sympathetic or after the injection of adrenaline or anterior pituitary extract. Some authors report that this condition is due to contraction of Müller's muscle, and the appearance of exophthalmos has been recorded in a thyroidectomized patient who later became myxoedematous. According to the author, while the pathology is obscure, overstimulation of the sympathetic nervous system seems to be the most common cause.

Obstetrics and Gynaecology

247 Reconstruction of the Female Urethra

C. COLOMBINO (*Ann. Ostet. Ginec.*, May, 1937, p. 567) has had good results in reconstruction of the female urethra from plastic operations, using flaps from the neighbouring parts of the vestibule, vaginal wall, and labia minora, and also by creating a new sphincter, according to Martius's technique, from the bulbo-cavernosus or ischio-cavernosus muscles. Greater difficulties are encountered in cases in which plastic reconstruction is impossible on account of extensive scarring due to obstetric trauma or previous unsuccessful operations for fistula. Here distant postero-lateral vaginal wall grafts may be used, the neck of the bladder may be transferred to a subpubic site, or a subpubic tunnel towards the bladder may be kept open until epithelialized. Colombino thinks, however, that it is more rational to effect a vesico-vaginal interposition of the uterus, which is strongly recommended by Frank, and has been done successfully by several German surgeons. In the two cases here described of total post-obstetric destruction of the urethra, this operation was successful. In the first, nocturnal continence was regained completely; in the second, in which a suprapubic cystotomy had been maintained after the operation, complete control followed in spite of the lack of a muscular sphincter. Permanent fixation of the uterus to the ischio-pubic rami is essential, and after operation special care must be taken of the sound which has been placed in the bladder. The operation must of course be combined in young patients with a tubal sterilization, but Colombino remarks that there is abundant justification for this when other surgical attempts to relieve a most distressing condition have failed.

248 Hyperemesis Gravidarum

J. VORON and H. PIGEAUD (*Gynéc. et Obstét.*, June, 1937, p. 401) classify admissions to hospital for this condition into three groups: (1) a majority of patients whose vomiting was not originally serious, and who at once respond to hospitalization; (2) grave cases of hyperemesis which are sent sufficiently early by the medical attendant for treatment at a time when the patients still possess adequate protein, fat, and carbohydrate reserves; and (3) advanced, serious cases with little or no metabolic reserves. In both the second and third groups the initial treatment is absolute isolation, psychotherapy in which the personalities of the physician and nurses are of great importance, absolute starvation for twenty-four hours, exhibition of salines subcutaneously and rectally, and the free addition of chloral hydrate to the rectal infusion. In the second group neurovegetative imbalance, a rapidly progressing condition of dehydration, and bilious vomiting are conditions which call for special therapeutic measures. Neurovegetative disturbances demand detailed consideration and are not susceptible to a routine treatment. Sympathicotonics, with tachycardia, epigastric pain, facial vasomotor reactions, brilliant eyes, and a negative oculo-cardiac reflex, require eserine. Vagotonics, with slow pulse, sialorrhoea, and a positive oculo-cardiac reflex, should be given belladonna. Amphotonics are given eserine and belladonna, also ergotamine tartrate; and in cases in which the blood pressure is below 100 mm. (systolic) adrenaline injections are added to other treatments. For dehydration hypertonic saline-serum injections are given intravenously. Abundant bilious vomiting calls for the daily introduction of a duodenal tube, through which 33 per cent. magnesium sulphate solution as well as foodstuffs may be introduced. Even in the third class of patients it is exceptional to see one in whom abortion should at once be induced, but there are rare cases in which medical treatment is ineffective. Signs tending to justify induction are a high increasing Maillard coefficient and a declining alkali reserve.

Pathology

249 Haemoclasic Reaction

U. FOGLIANI (*Policlinico*, Sez. Chir., June 15, 1937, p. 292) states that in 1928 Citelli and Piazza described a reaction characteristic of malignant growths caused by the intravenous injection of neoplasic extracts and consisting of a true haemoclastic crisis—namely, leucopenia, diminution in the platelet count, hypotension, fibrolysis, diminution of the index of refraction of the serum, and an inversion of the leucocyte function. Fogliani records his observations on this method in fifty cases and fifteen controls. He found positive results in 62 per cent. of the morbid growths and 35.7 per cent. of the controls, consisting of healthy persons or those suffering from other diseases. Similar results were obtained by Bona (70 per cent.), Gay (64.8 per cent.), Bossa (63 per cent.), and Rotolo (62 per cent.) with the reaction in cases of malignant growths. The relatives of patients suffering from malignant growths and presenting a positive reaction were also positive in eight out of nine cases examined.

250 Wright's Reaction

A. VIGOVSKY and V. IGNATOVA (*Therap. Arch.*, Moscow, 1937, **15**, 1, p. 176) describe their experience with Wright's reaction in 300 cases of brucellosis, and compare these results with those obtained from the Widal and Weil-Felix reactions. The proportion of non-specific Wright's reactions was very small. A positive Wright's reaction has no absolute diagnostic value, but its value is vastly superior to that of the Widal and the Weil-Felix.

251 Sternal Puncture

S. GREIF (*Med. Welt*, June 19, 1937, p. 847) advises sternal puncture by means of a special needle passed through the anaesthetized skin into the sternum at the level of the second or third rib; 0.1 c.cm. of marrow is then withdrawn by a syringe and placed in a watch-glass for examination. Sternal puncture is safe and painless provided anaesthesia is complete, and the special needle prevents a passage through the posterior cortex into the mediastinum. The external table of the sternum is rarely too thick, and there are hardly ever osteosclerotic processes to prevent the marrow from being extracted. The author advocates the use of the first and smallest possible drop of marrow for quantitative estimation. He found that from 45 to 150,000 cells are found in normal marrow. The difference in cell content in marrow taken from the same place at different times is slight, but is great when obtained from different levels in the sternum. In pernicious anaemia megalocytes, megaloblasts, and promegaloblasts are found in the sternal marrow, and in secondary anaemia there is a proliferation of normoblasts. In achylic chloranaemia the marrow is rich in cells, and there is hyperplasia of the erythropoietic system and especially an increase of erythroblasts and macroblasts. In haemolytic icterus normoblasts are increased. In leukaemias all leucocytes are increased; in aleukaemic myelosis the myelocytes are increased; in agranulocytosis leucocytes and myelocytes are absent, but lymphocytes and reticulocytes are increased in fatal cases; in milder cases myelocytes and reticulocytes are increased; in cases with rapid remissions the myelocytic elements are increased; the segmented elements are decreased; in mononucleosis there is no change in the bone marrow. When myeloma is suspected sternal puncture is the diagnostic method of choice. In cases of secondary bone tumours puncture at the site of maximum pain is useful. A large-cell type occurs in adeno-carcinoma and a small-cell type in simple carcinoma. Aleukaemic conditions and myelomata can be diagnosed by sternal puncture alone. This method is an important aid to the prognosis of cases of agranulocytosis, secondary anaemia, and pernicious anaemia.

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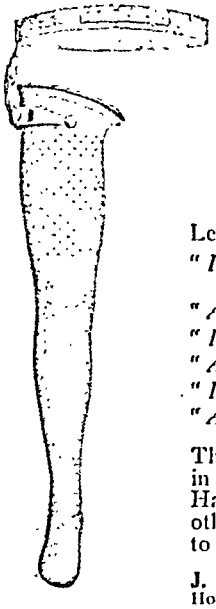


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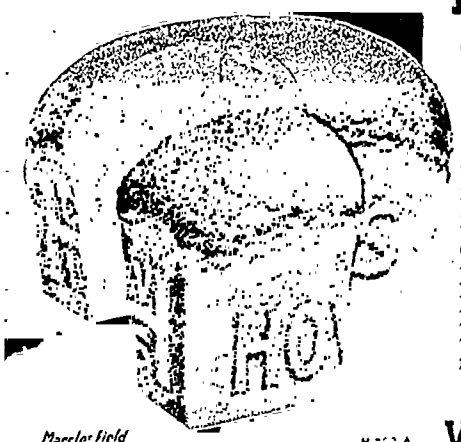
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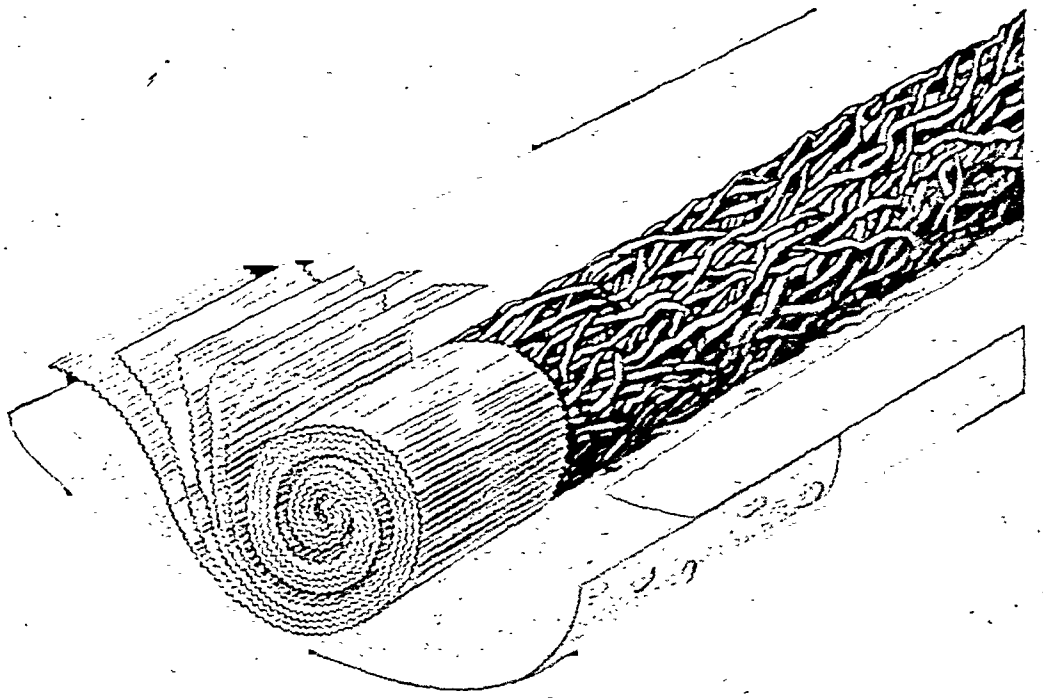
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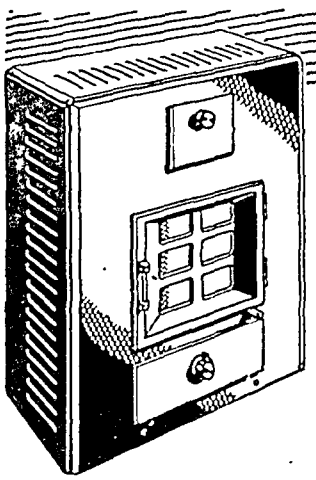
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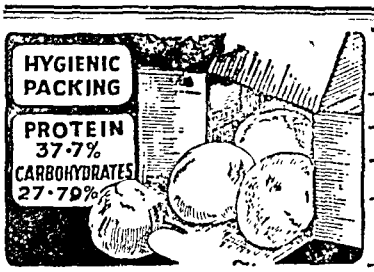
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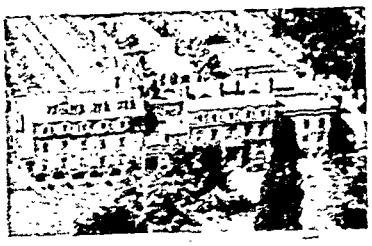
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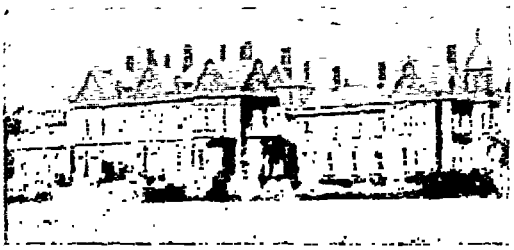
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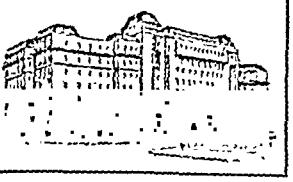
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Including Alcoholism and other Addictions
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Applicants must be graduates of a British University and must be either registered Medical Practitioners or otherwise qualified to undertake research in the subjects specified. Further particulars and forms of application may be obtained from the Registrar, The University, Manchester, 13. All applications to be made on the prescribed form must be sent to reach him not later than October 31st.

A CLINICAL DEMONSTRATION

under the direction of Mr. H. O. CLARKE, of Manchester, will be held at the ROBERT JONES AND AGNES HUNT ORTHOPAEDIC HOSPITAL, OSWESTRY, on Thursday, October 21, commencing at 3.15 p.m.

The programme will be mainly practical, and will, as far as possible, demonstrate the methods by which the Hospital treats common orthopaedic conditions, and, in particular, the use of plaster, splints, etcetera.

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4 p.m. in the School of Physical Medicine.

MISS MARGARET MORRIS. Maternity and Post-Operative Exercises.

TUESDAY, OCTOBER 12th.

Dr. MAITLAND-JONES in the Chair.

4 p.m. in the Bearsted Theatre.

Major A. H. A. GEM. Demonstrations with Films. PHYSICAL EDUCATION OF CHILDREN by the L.C.C.

FRIDAY, OCTOBER 22nd.

Sir ROBERT WOODS in the Chair.

4.30 p.m. in the School of Physical Medicine.

Colonel J. T. WAND-TETLEY, Commandant of the Army School of Physical Training, Aldershot.

DEMONSTRATION—RECRUIT TRAINING.

TUESDAY, NOVEMBER 2nd.

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	3 p.m.	4.30 p.m.	5.45 p.m.
Monday, Oct. 4	**H. CRICHTON-MILLER, M.D., M.R.C.P.** Aim and Scope of Psychotherapy.	**J. R. REES, M.D., M.R.C.P., D.P.H.** *The Psychiatric Interview: Difficulties of* Patient and Physician.	**J. R. REES, M.D., M.R.C.P., D.P.H.** Persuasion and Re-education.
Thursday, Oct. 7	Toxic and Endocrine factors in the Psychoneuroses.	**EDWARD A. BENNET, M.C., M.D., D.P.M.** Methods of investigation: Hypnosis; Word Association; Automatic Writing and Drawing.	**WILLIAM BURAN, M.D.** Hypnotism and Suggestion.
Monday, Oct. 11	**E. B. STRAUSS, D.M., M.R.C.P.** Psychological Background.	Free Association.	**A. McLEOD FRASER, M.B., Ch.B.** A Case of Anxiety Hysteria.
Thursday, Oct. 14	**J. A. HADFIELD, M.A., M.B.** General Aetiology of the Psychoneuroses	Dream Interpretation.	**WINIFRED I. DOHERTY, M.B., Ch.B., D.P.H., D.T.M.** A Case of Homosexuality.
Monday, Oct. 18	**E. B. STRAUSS, D.M., M.R.C.P.** Psychological Background.	**MAURICE B. WRIGHT, O.B.E., M.D.** Principles of Psychoanalysis (Freud).	**A. McLEOD FRASER, M.B., Ch.B.** A Case of Fetishism.
Thursday, Oct 21	**J. A. HADFIELD, M.A., M.B.** Hysteria	Principles of Psychoanalysis (Freud).	**C. R. HARGREAVES, M.R.C.S., L.R.C.P.** A Case of Conversion Hysteria.
Monday, Oct. 25	**E. B. STRAUSS, D.M., M.R.C.P.** Mental Mechanisms.	**EDWARD A. BENNET, M.C., M.D., D.P.M.** Analytical Psychology (Jung).	**WINIFRED I. DOHERTY, M.B., Ch.B., D.P.H., D.T.M.** Cases centering round Nuclear Incidents.
Thursday, Oct. 28	**J. A. HADFIELD, M.A., M.B.** Anxiety States and Obsessions.	**C. M. BEVAN-BROWN, M.B., Ch.B.** Individual Psychology (Adler).	**C. R. HARGREAVES, M.R.C.S., L.R.C.P.** A Case of Obsessional Compulsion.
Monday, Nov. 1	**E. B. STRAUSS, D.M., M.R.C.P.** Mental Mechanisms.	**MARY C. LUFF, M.D., D.P.M.** The Psychology of the Psychoses.	**CLIFFORD E. ALLEN, M.D., M.R.C.P., D.P.M.** A Case of Psychosis.
Thursday, Nov. 4	**J. A. HADFIELD, M.A., M.B.** Sex Aberrations	**H. V. DICKS, M.D., M.R.C.P.** Delinquency and its Psychological Treatment.	**B. W. CROWHURST ARCHER, M.D.** A Case of Delinquency.

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Oct. 7th & 14th	DERMATOLOGICAL NEUROSES. **W. J. O'DONOVAN, O.B.E., M.D., M.R.C.P.** Physician, Skin Department, London Hospital	November 11th	RESPIRATORY NEUROSES. **J. L. LIVINGSTONE, M.D., F.R.C.P.,** Physician, King's College Hospital, Assistant Physician, Brompton Hospital.
Oct. 21st & 28th	Cambridge, and Consulting Physician to St. Bartholomew's Hospital.	Nov. 18th & 25th	CARDIAC NEUROSES. **Sir MAURICE CASSIDY, K.C.V.O., C.B., F.R.C.P.,** Senior Physician, St. Thomas's Hospital.
November 4th	GYNAECOLOGICAL NEUROSES. **ALECK W. BOURNE, F.R.C.S.,** Obstetric Surgeon to St. Mary's Hospital.	Dec. 2nd & 9th	PSYCHOLOGICAL MANIFESTATIONS OF NEUROLOGICAL DISORDERS. **W. RUSSELL BRAIN, D.M., F.R.C.P.,** Physician to the London Hospital.

These Lectures are open to MEDICAL GRADUATES only. FEE for the course, £1 15s. Cheques payable to THE TAVISTOCK CLINIC. Tickets for single lectures (where available), 5s. Tickets for the course to be obtained IN ADVANCE from the EDUCATIONAL SECRETARY at the Clinic.

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Two Courses are provided, one lasting a year and the other two weeks. The shorter Course is restricted to persons with adequate industrial experience.

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Course of study (whole-time, nine months) commencing September 27th. Inclusive fee, 54 gns.

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Course of Study (whole-time, one academic year) commencing in October. Inclusive fee, £47 15s.

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Special three-monthly advanced courses. Inclusive fee, 7 guineas.

For Prospectuses and Synopses of Lectures, etc., apply to the SECRETARY, LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, Keppel Street (Gower Street), London, W.C.1. (Museum 3041.)

THE LONDON SCHOOL OF DERMATOLOGY

St. John's Hospital for Diseases of the Skin,
5, Lisle Street, Leicester Square, W.C.2

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations twice weekly during October and November, and again during January and February, and four times weekly during May. General Practitioners desiring to attend any particular lecture or occasional lectures can do so without paying a fee. Clinics daily at 2 p.m. and 6 p.m. Saturdays 2 p.m. only. The Laboratory is particularly well equipped and arrangements can be made for classes, individual instruction or for research work. Enquiries: The Dean or Secretary of the School.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

(University of London)

Denmark Hill, S.E.5.

THE PAST and PRESENT STUDENTS' DINNER, at which the DEAN (Dr. J. A. Drake) will preside, will be held on SATURDAY, OCTOBER 23rd, at 7.30 for 8 p.m., at the MAY FAIR HOTEL, BERKELEY STREET, W.1. The Dinner Secretary is Mr. TERENCE CAWTHORNE.

THE INTENSIVE POST-GRADUATE COURSE will be held on SATURDAY, OCTOBER 23rd, and SUNDAY, OCTOBER 24th.

J. A. DRAKE, M.D., F.R.C.P., D.P.H., Dean.

40th ANNUAL EDITION

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MEDICAL PROSPECTUS (48 pp.)

CONTENTS: The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations.* Postal Courses, and Oral Classes. Suggestions for the Higher Medical Examinations. Suggestions for the Higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Courses. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, 17, Red Lion Sq., London, W.C.1. (Telephone: Holborn 6313.)

POSTGRADUATE COURSE IN VENEREAL DISEASES

LONDON COUNTY COUNCIL (WHITECHAPEL) CLINIC, Turner Street, E.1

(Adjoining the London Hospital.)

A THREE MONTHS' COURSE of INSTRUCTION in MODERN METHODS in the DIAGNOSIS AND TREATMENT OF VENEREAL DISEASES will be given by LIEUT.-COLONEL E. T. BURKE, D.S.O., the Director of the Clinic, during OCTOBER, NOVEMBER and DECEMBER, 1937. Attendance at this Course will qualify, subject to the other conditions in the Regulations of the Ministry of Health, for the Certificate enabling the possessor to hold the post of a Venereal Disease Officer under the Council of a County or County Borough.

The Course will consist of twenty-five systematic lectures accompanied by lantern demonstrations on Mondays and Thursdays at 2.30 p.m., beginning on October 4th and ending on December 23rd. Every Wednesday at 2.30 p.m. cases will be demonstrated. Those taking the Course will also attend the practice of the Clinic in order to obtain tuition in intravenous injections, etc. During the three months, 130 hours of attendance must be put in.

Those intending to take the Course must send their names to the Director on or before September 29th.

Fee: £10 10s.

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BRITISH POSTGRADUATE MEDICAL SCHOOL

(UNIVERSITY OF LONDON)

Department of Medicine

A COURSE OF SIX LECTURES

on

MENINGITIS AND ENCEPHALITIS

will be given by

Sir ARTHUR HALL, D.Sc., M.D., F.R.C.P.,

on

OCTOBER 5th, 12th, 19th, 26th, and NOVEMBER 2nd, 9th, at 4.30 p.m.

Department of Surgery

A COURSE OF THREE LECTURES

on

ENDOSCOPIC METHODS OF EXAMINATION

will be given by

Mr. V. E. NEGUS, M.S., F.R.C.S.,

on

OCTOBER 1st, 8th, and 15th, at 2.30 p.m.

Department of Pathology

A COURSE OF SIX LECTURES

on

THE PLANNING & INTERPRETATION OF EXPERIMENTS IN MEDICINE

will be given by

Dr. A. BRADFORD HILL, D.Sc., Ph.D.,

on

OCTOBER 6th, 13th, 20th, 27th, and NOVEMBER 3rd and 10th, at 4.30 p.m.

Department of Obstetrics and Gynaecology

A COURSE OF FIFTEEN LECTURES on

PRESENT-DAY OBSTETRICS

will be given as follows: Thursday afternoons at 3.30 p.m.

Oct. 7th	Antenatal Care	Dame LOUISE MCILROY, D.B.E., LL.D., M.D., F.R.C.P., F.C.O.G.	
„ 14th.	Radiology in Obstetrics and Gynæcology.	Dr. R. E. ROBERTS, M.D., D.M.R.E.	
„ 21st.	Radiology in Obstetrics and Gynæcology (continued).	Dr. R. E. ROBERTS, M.D., D.M.R.E.	
„ 28th.	Breech Cases	Professor J. CHASSAR MOIR, M.D., F.R.C.S., F.C.O.G.	
Nov. 4th.	Puerperal Sepsis	Dr. R. M. FRY, M.R.C.S., L.R.C.P.	
„ 11th.	Obstetric Emergencies	Dr. W. H. F. OAKLEY, M.R.C.S., L.R.C.P., F.C.O.G.	
„ 18th.	Abortion.		
„ 25th.	Hæmorrhage of Late Pregnancy.	Professor F. J. BROWNE, M.D., D.Sc., F.R.C.S., F.C.O.G.	
Dec. 2nd.	Hæmorrhage of Late Pregnancy (continued).	Professor F. J. BROWNE, M.D., D.Sc., F.R.C.S., F.C.O.G.	
„ 9th.	Toxæmias of Pregnancy	Mr. G. F. GIBBERD, M.S., F.R.C.S.	
„ 16th.	Toxæmias of Pregnancy (continued).	Mr. G. F. GIBBERD, M.S., F.R.C.S.	
1938.			
Jan. 6th.	Disproportion and Difficult Labour.	Mr. LESLIE WILLIAMS, M.D., M.S., F.R.C.S., F.C.O.G.	
„ 13th.	Disproportion and Difficult Labour (continued).	Mr. LESLIE WILLIAMS, M.D., M.S., F.R.C.S., F.C.O.G.	
„ 20th.	Cæsarean Section	Mr. J. BRIGHT BANISTER, M.A., M.D., F.R.C.P., F.R.C.S., F.C.O.G.	
„ 27th.	Anæsthesia and Analgesia	Professor J. CHASSAR MOIR, M.D., F.R.C.S., F.C.O.G.	

These lectures are for regular students of the School, but a limited number of tickets are available, without fee, to medical practitioners. Applications for tickets should be addressed to the DEAN, BRITISH POSTGRADUATE MEDICAL SCHOOL, DUCANE ROAD, W.12.

University College Hospital Medical School,

University Street, W.C.1.

WINTER SESSION commences Tuesday, October 5th, 1937.

Scholarships and Prizes exceeding £1,000 awarded annually, and numerous vacancies for House Appointments, also Senior Posts for Registrars, etc.

Dental School Department.

(National Dental Hospital, Great Portland Street, W.1.)

Recently reorganized and equipped on the highest standard of modern requirements.

Full particulars can be obtained on application to the Dean.

RESEARCH INTO RHEUMATIC DISEASE.

Applications are invited by the EMPIRE RHEUMATISM COUNCIL for two RESEARCH FELLOWSHIPS relative to the causation and pathology of Rheumatic Disease; particularly the chronic forms. The Fellowships are tenable for seven years and holders will be expected to give their full time to the work; salary £750 a year (inclusive of resume allowance). Laboratory facilities in London will be provided by the Council.

Applicants may suggest some particular task of research which they wish to undertake, and should state their qualifications.—Address, Secretary, Empire Rheumatism Council, 1, Mitre Court Bldgs., Temple, E.C.4. Applications close November 15th.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES.

(54 Beds. 16,500 Out-patients per annum.)

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered. The appointment is for six months. Salary at the rate of £150 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned, 61, 63 Street, Manchester, not later than October 7th.

JOHN NALL,
Secretary.

ROYAL NAVAL DENTAL SERVICE.

Vacancies exist for DENTAL OFFICERS in the ROYAL NAVY, and applications for entry are invited from Registered Dental Surgeons.

Candidates must be British subjects of pure European descent, below 28 years of age on the day of entry and physically fit for service in any part of the world. Unmarried candidates are preferred. No examination in professional subjects will be held, but approved candidates will be required to attend at the Admiralty for physical examination and interview by a Selection Board.

Successful candidates will be appointed to Short Service Commissions and a grant of £50 towards the cost of providing the necessary uniform will be paid on entry. Vacancies in the permanent list will be filled by selection from among officers holding Short Service Commissions who desire to make the Royal Naval Dental Service their permanent career. Officers not transferred to the Permanent List will, on the termination of their Short Service Engagement after six years' service, receive a gratuity of £1,000.

The rates of Full Pay for Short Service Dental Officers are £362 per annum during the first three years and £447 per annum during the second three years. Official quarters are provided.

Candidates who have, since qualifying, held full-time appointments as House Surgeons at Dental Hospitals and Schools will be eligible for an antedate of seniority up to a maximum of six months.

Officers serving under permanent commissions are eligible for a four months' postgraduate course on full pay with allowances.

Copies of the regulations for entry of conditions of Service, including rates of pay and allowances, may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1, and from the Deans of Dental Schools.

Applications for entry in *January, 1938*, must be received not later than December 1st, 1937, and for entry in April, 1938, not later than March 7th, 1938.

THE LADY CHICHESTER HOSPITAL, HOVE, FOR FUNCTIONAL NERVOUS DISEASES

(60 Beds.)

SENIOR HOUSE PHYSICIAN required. Six months' appointment at £100 per annum all found.

Also JUNIOR, at £50 per annum. Valuable experience for Diploma in Psychological Medicine.

Duties to commence immediately. Applications, with testimonials, to be sent to the Secretary, Mr. P. F. Spooner, 33, West Street, Brighton.

August 21st, 1937.

THE RADIUM INSTITUTE, *Riding House Street, London, W.1.*

Applications are invited for the post of RESIDENT MEDICAL OFFICER (MALE). Candidates must be unmarried.

The salary will be at the rate of £250 per annum, board, residence, and laundry being provided, and the appointment is for six months, commencing *immediately*.

Applications, stating age, nationality, qualifications, and experience, with copies of three recent testimonials, must be received at the Institute as soon as possible.

Canvassing, either directly or indirectly, is not permitted.

THOS. A. GARNER,
Secretary.

RADIUM BEAM THERAPY RESEARCH, at the Radium Institute, 1, Riding House Street, London, W.1.

ASSISTANT MEDICAL OFFICER, resident, salary £150, non-resident, salary £250 per annum. Six months' appointment from November 1st, 1937. Applications, stating age, qualifications and experience, with copies of three recent testimonials, to be sent to the Secretary, Radium Beam Therapy Research, not later than October 5th. The selected candidate will assist with the working of two five-gramme Radium units, and will have the opportunity of combining post graduate studies with this appointment.

ROYAL MANCHESTER CHILDREN'S HOSPITAL, PENDLEBURY.

Applications are invited for the post of Non-resident ASSISTANT MEDICAL OFFICER at the Out-patients' Department, Garside Street, Manchester. Salary at the rate of £150 per annum, and the appointment is for a period of six months as from November 8th, 1937. Candidates must be on the Medical Register.

Particulars of duties can be obtained from the Secretary. The hours of duty are from 9 a.m. till 1 p.m. or until the work of the Dispensary is finished. Patients' attendances number about 100,000 per annum.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Thursday, October 7th, 1937.

Canvassing, directly or indirectly, may disqualify.

By Order,
H. HEARDMAN, *Secretary.*

COUNTY COUNCIL OF MIDDLESEX.

NORTH MIDDLESEX COUNTY HOSPITAL, EDMONTON.

JUNIOR RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited for the above appointment. Candidates must be registered Medical Practitioners who have held resident appointments in a General Hospital. The duties of the appointment will be mainly obstetrical and gynaecological. Salary £250 per annum, with board, lodging and laundry, valued at £100 per annum.

The officer appointed will work under the direction of the Medical Superintendent, and will devote his or her whole time to official duties.

The appointment (which does not carry any superannuation rights, will be subject to medical examination and is terminable by one month's notice on either side) is for a period of six months in the first instance, and may be extended for an additional six months.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than October 9th. Relationship to any member or officer of the Council must be disclosed in the application.

Application forms are not provided. Envelopes must be endorsed "Junior Assistant Medical Officer, North Middlesex County Hospital." Canvassing, directly or indirectly will be a disqualification.

C. W. RADCLIFFE, "Z,"
Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1.
September 17th, 1937.

AMENDED ADVERTISEMENT.

CITY OF NOTTINGHAM.

APPOINTMENT OF RESIDENT MEDICAL SUPERINTENDENT OF THE CITY HOSPITAL and MEDICAL OFFICER OF THE CITY INSTITUTION.

The Nottingham City Council invite applications from duly qualified persons for the appointment of RESIDENT MEDICAL SUPERINTENDENT of the CITY HOSPITAL and MEDICAL OFFICER of the CITY INSTITUTION

Candidates must present evidence of wide clinical experience gained in medical and surgical posts, and the person appointed must be an experienced and skilled administrator. He should be of strong character, capable of directing a large staff, and of assisting the Council in developments of the hospital services

The salary will be fixed between £1,100 and £1,400 per annum, according to the qualifications and experience of the selected candidate In addition, an unfurnished house, free of rates, will be provided, this emolument being valued at £100

The person appointed will not be allowed to engage in any other form of practice, and all fees received by him will be required to be paid to the Council

The duties will be carried out under the general supervision and control of the Medical Officer of Health. The appointment will be subject to the Superannuation Scheme in force, and the successful candidate will be required to pass a medical examination.

Forms of application and further particulars as to the terms and duties of the office may be obtained from me, the undersigned, and the successful candidate will be deemed to have had notice of such duties and to have accepted such terms.

Applications, endorsed "Resident Medical Superintendent," are to be delivered at my office not later than October 11th.

Canvassing, either directly or indirectly, is prohibited, and will be deemed a disqualification.

Dated this 17th day of September, 1937.

J. E. RICHARDS,
Town Clerk.

Guildhall, Nottingham.

THE KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered medical practitioners (male, single) for the posts of ASSISTANT RESIDENT MEDICAL OFFICER (twelve months' appointment in each case) at the following institutions:

(i) SULLY HOSPITAL, Sully, Glam (300 beds for the treatment of pulmonary tuberculosis), situate between Penarth and Barry.

(ii) NORTH WALES SANATORIUM (247 beds for female pulmonary, and male, female, and children non-pulmonary cases), Denbigh, North Wales

(iii) GLAN ELY HOSPITAL (196 beds for pulmonary and surgical tuberculosis in men, women and children), Fairwater, nr. Cardiff.

Salary £200 per annum, plus maintenance.

Applications, stating age, qualifications, experience, etc., together with copies of three recent testimonials, should reach the undersigned not later than Wednesday, October 6th, 1937.

D. A. POWELL,
Principal Medical Officer.

Memorial Offices, Westgate Street, Cardiff.

COUNTY COUNCIL OF MIDDLESEX.

ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment on the pensionable staff of an Assistant Medical Officer in the Public Health and School Medical Department. Salary £600 per annum, rising after two years' service by annual increments of £30 to £750, together with out-of-pocket travelling expenses.

Applicants must be duly qualified registered medical practitioners, and should have had special experience of ante-natal work. The possession of a Degree or Diploma in Public Health will be an additional qualification.

The duties of the post are the medical inspection of school children, the supervision of treatment of minor ailments, the carrying out of work under the maternity and child welfare scheme, and such other duties as may be required by the Council.

The officer appointed will devote whole time to the duties of the post, act under the direction of the County Medical Officer of Health, and reside in such district as may be required.

The appointment, which will be subject to medical examination, will be held during the pleasure of the Council, and will be terminable by one month's notice on either side.

Applications, stating age, qualifications and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than October 2nd. Relationship to any member or officer of the Council must be disclosed in the application. Application forms are not provided. Envelopes must be endorsed "Assistant Medical Officer 'Z.'"

Canvassing, directly or indirectly, will be a disqualification

C. W. RADCLIFFE,
Clerk of the County Council.

Middlesex Guildhall,
Westminster, S.W.1
September 8th, 1937.

ESSEX COUNTY COUNCIL.

JUNIOR ASSISTANT MEDICAL OFFICER

The County Council of the Administrative County of Essex invite applications for the appointment of Junior Assistant Medical Officer at the BLACK NOTLEY SANATORIUM, near BRAINTREE.

This Sanatorium has 300 beds for the treatment of pulmonary and non-pulmonary tuberculosis in men, women and children, and has all modern facilities for diagnosis and treatment, together with a staff of visiting Specialists.

The appointment is for a period of one year, and the salary will be at the rate of £250 per annum, together with board, lodging and laundry. The successful applicant will be required to pass a medical examination, and will be subject to the Council's Sick Pay Rules and Regulations, a copy of which will be forwarded on application

Applications in candidate's own handwriting, stating age, qualifications and experience, accompanied by copies of not more than three recent testimonials which will not be returned, should be addressed to me and delivered at the County Hall, Chelmsford, not later than 10 a.m. on Monday, October 11th, 1937.

E. S. HOLCROFT,
Clerk of the County Council.

County Hall, Chelmsford.
September 21st, 1937.

BOROUGH OF ILFORD.

APPOINTMENT OF DEPUTY MEDICAL OFFICER OF HEALTH.

Applications are invited from legally qualified Medical Practitioners, holding the Diploma of Public Health or similar qualifications, for the above appointment, at a commencing salary of £750 per annum, rising by annual increments of £25 to a maximum of £900 per annum.

Applicants must not exceed the age of 45 years, but an applicant who is an ex-Service man may deduct from his age his period of service during the Great War for the purpose of bringing himself within the above age limit.

The appointment will be subject to confirmation by the Minister of Health, to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and to the Staff Regulations of the Council. The selected applicant will be required to pass a medical examination by and to the satisfaction of the Medical Officer of Health and to enter into a service agreement. The appointment will also be subject to three months' notice on either side.

The person appointed will be required to reside within the Borough of Ilford.

Applications on the prescribed form which (together with list of duties) is obtainable from my office, must be received by me at the Town Hall, Ilford, not later than October 8th, 1937.

Canvassing, directly or indirectly, will be a disqualification.

CHARLES N ROBERTS,
Town Clerk.

Town Hall, Ilford.

LANCASHIRE COUNTY COUNCIL.

PARK HOSPITAL, DAVYHULME, NEAR MANCHESTER.

APPOINTMENT OF SENIOR RESIDENT MEDICAL OFFICER

Applications are invited from registered male Medical Practitioners for the appointment of SENIOR RESIDENT MEDICAL OFFICER at the above Hospital. Candidates must be unmarried.

Salary £350 per annum, together with the usual residential allowances.

The appointment will, in the first instance, be for a period of six months, the successful applicant being eligible for reappointment for a further period of six months at the end of that period.

The Hospital comprises 500 beds for acute cases, is fully equipped in every respect, and is recognised as a complete Training School for Nurses.

The appointment will be terminable by one month's notice on either side.

Forms of application may be obtained from the County Medical Officer of Health, Hospital and Medical Department, County Offices, Preston, to whom all applications, accompanied by copies of not more than two recent testimonials, must be forwarded so as to be received not later than Saturday, October 9th, 1937.

GEORGE ETHERTON,
Clerk of the County Council.

County Offices, Preston.
September 20th, 1937.

LANCASHIRE COUNTY COUNCIL.

PUBLIC ASSISTANCE COMMITTEE.

LAKE HOSPITAL AND DARNTON HOUSE, ASHTON-UNDER-LYNE, NEAR MANCHESTER.

APPOINTMENT OF JUNIOR RESIDENT MEDICAL OFFICER.

Applications are invited from registered medical practitioners for the appointment of Junior Resident Medical Officer at the above Hospital and Institution, comprising 300 and 525 beds respectively. The Hospital is recognized as a complete Training School for Nurses.

Candidates must be unmarried. Salary at the rate of £225 per annum, together with the usual residential emoluments.

The appointment will, in the first instance, be for a period of six months, the successful applicant being eligible for reappointment for a further period of six months at the end of that period.

Forms of application may be obtained from the County Medical Officer of Health, Public Assistance (Hospital and Medical) Department, County Offices, Preston, to whom all applications, accompanied by copies of not more than two recent testimonials, must be forwarded not later than Wednesday, October 6th, 1937.

GEORGE ETHERTON,
Clerk of the County Council.

County Offices, Preston.
September 9th, 1937.

LANCASHIRE COUNTY COUNCIL.

PUBLIC ASSISTANCE COMMITTEE.

LAKE HOSPITAL AND DARNTON HOUSE, ASHTON-UNDER-LYNE, NEAR MANCHESTER.

APPOINTMENT OF SENIOR RESIDENT MEDICAL OFFICER.

Applications are invited from Registered Medical Practitioners for the appointment of Senior Resident Medical Officer at the above Hospital and Institution, comprising 300 and 525 beds respectively.

The Hospital is recognised as a complete Training School for Nurses.

Candidates must be unmarried.

Salary at the rate of £250 per annum, together with the usual residential emoluments.

The appointment will, in the first instance, be for a period of six months, the successful applicant being eligible for reappointment for a further period of six months at the end of that period.

Forms of application may be obtained from the County Medical Officer of Health, Public Assistance (Hospital and Medical) Department, County Offices, Preston, to whom all applications, accompanied by copies of not more than two recent testimonials, must be forwarded not later than Saturday, October 9th, 1937.

GEORGE ETHERTON,
Clerk of the County Council.

County Offices, Preston.
September 21st, 1937.

THE ROYAL INFIRMARY, BRADFORD.

TWO HOUSE PHYSICIANS and FOUR HOUSE SURGEONS (MALE) wanted for November 1st. Six months' appointments.

Candidates must be single and legally qualified. Salary £150 per annum, with board, residence, and washing.

There are 345 beds and nine Resident Officers.

Applications, stating age, qualifications, and previous experience, with copies of recent testimonials, should be sent to the undersigned not later than Monday, October 4th.

H. TRUSSON, F.C.I.S.,
House Governor-Secretary.

ROYAL ARMY MEDICAL CORPS

Applications are invited from medical men for appointment to commissions in the Royal Army Medical Corps.

Candidates will, for the present, be selected for commissions without competitive examination, and will be required to present themselves in London for interview and physical examination on, or about, 21st October, 1937. They must be registered under the Medical Acts, and normally must not be over the age of 28 years.

Successful candidates will, in the first instance, be given short service commissions for five years. During the 4th year of this period they will be given the opportunity of applying for permanent commissions in either the Royal Army Medical Corps or the Indian Medical Service. Those not selected will retire on completion of five years' service with a gratuity of £1,000.

Candidates who are successful will, unless they are seconded to complete a hospital appointment, assemble at the Royal Army Medical College, London, on 1st November, 1937.

Particulars of the Conditions of Service in the Royal Army Medical Corps, pay and allowances, and forms of application, may be obtained on application, either in writing, or personally, to the Assistant Director General, Army Medical Services, The War Office, London, S.W. 1.

ROYAL NAVAL MEDICAL SERVICE.

Vacancies exist for Medical Officers in the Royal Navy, and applications are invited for entry in January, 1938.

Candidates below the age of 28 years are preferred, and they must be registered under the Medical Acts. No examination in professional subjects will be held, but candidates will be required to attend for interview by a Selection Board.

Selected candidates will be entered for Service for a period of three years in the first instance, which may be extended to five years at the discretion of the Admiralty.

At the end of three years' service officers may retire with a gratuity of £400, but those who serve for five years will receive £1,000.

At the end of five years' Short Service permanent commissions will be given to selected officers who wish to make the Naval Medical Service their permanent career. Officers transferred to the permanent list will receive a gratuity of £1,000 (less Income Tax).

Opportunities are available for officers on the permanent list to specialise, and ample provision is made for Post-Graduate study.

Copies of the regulations for entry and conditions of service, including rates of pay and allowances, may be obtained from the Medical Director-General of the Navy, Admiralty, S.W.1, and from the Deans of all Medical Schools.

Applications for entry from intending candidates must be received not later than November 22nd, 1937.

COUNTY COUNCIL OF DURHAM.

EDUCATION DEPARTMENT.

ASSISTANT SCHOOL MEDICAL OFFICERS.

The County Education Committee invite applications for the posts of TWO ASSISTANT SCHOOL MEDICAL OFFICERS, to act under the School Medical Officer in connexion with the inspection of school children, and such other duties as may be required by the Education Committee. Commencing salary £500 per annum (provided the candidates have had not less than three years' post-graduate experience), rising by annual increments of £25 to £700 per annum, together with travelling expenses according to the County Scale. The successful candidates will be required to devote their whole time to the duties of the office and reside in or near the districts to which they will be attached at places to be approved by the Education Committee. The appointments will be subject to three calendar months' notice on either side, expiring on the last day of any calendar month. Applicants must have had experience in the work of school medical inspection, and preference will be given to candidates who:

(*a*) Have had experience in the work of School Clinics;

(*b*) Have been accustomed to make special reports on Mentally Defective, Physically Defective, Epileptic and other Defective children.

The possession of a Diploma in Public Health is desirable, though not essential.

Canvassing, directly or indirectly, is prohibited and will disqualify.

A deduction of 5 per cent. will be made from the salary in accordance with the Local Government and Other Officers' Superannuation Act, 1922, which has been adopted by the Council, and the appointment will be subject to passing the County Council's medical examination in connexion therewith.

Forms of application to be returned not later than Saturday, October 9th, 1937, may be obtained from the Director of Education, Shire Hall, Durham, on receipt of stamped addressed foolscap envelope.

THOS. B. TILLEY,
Director of Education.

Shire Hall, Durham
September 16th, 1937

CITY AND COUNTY OF THE CITY OF CHESTER.

CITY HOSPITAL (288 Beds)

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER (Male) at the above Hospital. Applicants must have had experience in a Voluntary Hospital as a House Physician and/or experience as a Resident Medical Officer in a Municipal General Hospital. The person appointed will be responsible, under the direction of the Medical Officer of Health for the City, who is also Medical Superintendent of the Hospital, for the general medical work of the Hospital. The salary attached to the post is £400 per annum, rising by two annual increments of £25 to £450 per annum, with board, residence, and laundry.

Canvassing, either directly or indirectly, will be a disqualification.

Applications, stating age, qualifications, and previous experience, with copies of three recent testimonials, must be received by the Medical Officer of Health, Town Hall, Chester, on or before October 1st, 1937.

J. H. DICKSON,
Town Clerk.

Town Hall, Chester.
September 13th, 1937.

KENT AND SUSSEX HOSPITAL, TUNBRIDGE WELLS. (210 Beds.)

EAR, NOSE, AND THROAT DEPARTMENT.

Applications are invited for the appointment of HOUSE SURGEON (male) to the above Department; duties to commence at once. Previous experience desirable, but not essential. Duties to include those of Resident Anaesthetist. Salary £150 per annum, board, residence and laundry in the hospital.

Applications, stating qualifications, together with certificate of registration and copies of not more than three recent testimonials, should be sent to the undersigned as soon as possible.

TOM B. HARRISON,
Superintendent-Secretary.

TYNEMOUTH VICTORIA JUBILEE INFIRMARY.

HOUSE SURGEON (MALE) required November 1st, 1937. Applicants must be doubly qualified and registered. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age and other essential particulars, and accompanied by copies of recent testimonials, to be addressed to the undersigned, before October 1st, 1937, from whom all particulars may be obtained.

The Hospital has two resident House Surgeons and contains 80 Beds and Cots; an *X*-Ray Department, and an Out-patient Department where accident cases are received.

CHAS. ROWELL,
Secretary.

1, Northumberland Place,
North Shields.

COUNTY COUNCIL OF DURHAM.

EDUCATION DEPARTMENT.

SCHOOL DENTIST.

The County Education Committee invite applications for fully qualified and experienced dentists for appointments as a School Dentist to act under the School Medical Officer in connexion with the treatment of dental defects of children attending Schools and Junior Instruction Centres in the County Area and to undertake such other duties as may from time to time be required by the Education Committee.

Commencing salary £500 per annum, rising by annual increments of £25 to a maximum of £600 per annum, together with travelling expenses in accordance with the County Scale. The successful candidate will be required to devote his (her) whole time to the duties of the Office, and to reside in or near the district to which he (she) may be attached at a place to be approved by the Education Committee. The appointment will be subject to three calendar months' notice on either side, such notice to date from the last day of any calendar month. Copies of not more than three recent testimonials are required.

Canvassing, directly or indirectly, is prohibited and will disqualify. A deduction of 5 per cent. will be made from the salary in accordance with the Local Government and Other Officers' Superannuation Act, 1922, which has been adopted by the Council, and the appointment will be subject to passing the County Council's medical examination in connexion therewith. Forms of application to be returned not later than Saturday, October 9th, 1937, may be obtained from the Director of Education, Shire Hall, Durham, on receipt of a stamped addressed foolscap envelope.

THOS. B. TILLEY,
Director of Education.

Shire Hall, Durham
September 16th, 1937.

COUNTY COUNCIL OF DURHAM.

EDUCATION DEPARTMENT

ASSISTANT OCULIST.

Applications are invited for the post of ASSISTANT SCHOOL OCULIST to the Education Committee. Candidates must be skilled Refractionists and must also have occupied the post of House Surgeon in an eye hospital, or in the eye department of a general hospital for a period of not less than six months. Commencing salary £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum, with travelling expenses in accordance with the County Regulations.

The person appointed will hold an established post under the Local Government and Other Officers' Superannuation Act, 1922, and will be subject to the provisions of that Act. He (she) will be required to devote his (her) whole time to the duties of the office and to reside at a place to be approved by the Education Committee. The appointment will be subject to three calendar months' notice on either side, expiring on the last day of any calendar month.

Canvassing, directly or indirectly, is prohibited and will disqualify.

Forms of application, to be returned not later than Saturday, October 9th, 1937, can be obtained from the Director of Education, Shire Hall, Durham, on receipt of a stamped addressed foolscap envelope.

THOS. B. TILLEY,
Director of Education.

Shire Hall, Durham.
September 13th, 1937.

ESSEX COUNTY COUNCIL.
Oldchurch Hospital, Romford.

Applications are invited for the appointment of ASSISTANT RESIDENT MEDICAL OFFICER, chiefly for Casualty and Receiving Room duties at the above Hospital.

Candidates for the appointment must be Registered Medical Practitioners of at least three years' standing and not over 45 years of age, have held resident Hospital appointments and have had considerable experience in general Hospital, Medical and Surgical practice.

The salary for the appointment will be at the rate of £350 per annum, rising, subject to satisfactory service, by annual increments of £25 to £450 per annum, plus emoluments valued at £160 per annum.

The Hospital is a General Hospital with accommodation for approximately 880 patients, and is equipped with all modern Departments.

The appointment will be subject to the Council's Sick Pay Rules and Regulations, a copy of which will be forwarded on application, and the successful applicant will be required to pass a medical examination and to contribute 5 per cent. of the salary and emoluments to the appropriate Superannuation Fund.

Applications on the prescribed form, obtainable from the undersigned, should be addressed to me and delivered at the County Hall, Chelmsford, not later than 10 a.m. on Tuesday, October 5th, 1937.

E. S. HOLCROFT,
Clerk of the County Council.

County Hall, Chelmsford.
September 20th, 1937.

CITY OF BIRMINGHAM.

SELLY OAK HOSPITAL (520 Beds.)

RADIOLOGIST.

Applications are invited for the above whole-time appointment from fully qualified registered Medical Practitioners who have had good experience in diagnostic radiology and who possess a recognized diploma in Radiology.

Salary will be £800, rising by annual increments of £50, to a maximum of £1,000 per annum.

The successful [illegible] required to pass an approved [illegible] and to contribute to the [illegible] established under the Local Government and Other Officers' [illegible]'2, as amended by Section [illegible] Corporation Acts, 1935 [illegible] for Widows, and, if under 30 years of age, to join the Birmingham Municipal Officers' Widows and Orphans Pension Scheme. The appointment will be terminable by three months' notice on either side.

Further particulars of the appointment may be obtained from the Medical Superintendent of the Hospital.

Applications, stating age, experience and qualifications, accompanied by copies of recent testimonials and endorsed "Radiologist," should be sent to the Medical Superintendent, Selly Oak Hospital, Birmingham, not later than Wednesday, October 13th, 1937.

F. H. C. WILTSHIRE,
Town Clerk.

The Council House, Birmingham,
September, 1937.

CITY OF BIRMINGHAM.

ROMSLEY HILL SANATORIUM (120 Beds).

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited for a RESIDENT ASSISTANT MEDICAL OFFICER. Candidates must be unmarried, and have held a resident hospital appointment since qualifying. Experience in the diagnosis and treatment of tuberculosis will be a recommendation.

The appointment will be limited in the first instance to six months, and, subject to satisfactory service, may be extended for a further six months. The salary will be at the rate of £240 per annum for the first six months, and £275 per annum for the second six months, with board and residence in each case.

Forms of application may be obtained from the Medical Superintendent, Romsley Hill Sanatorium, Halesowen, near Birmingham, and should be returned to him not later than Wednesday, October 6th, 1937.

F. H. C. WILTSHIRE,
Town Clerk.

CITY OF COVENTRY.

MUNICIPAL GENERAL HOSPITAL.

The Public Health Committee invite applications from duly registered male medical practitioners in connection with two vacancies for ASSISTANT RESIDENT MEDICAL OFFICERS at the above Hospital (324 beds). The Hospital includes medical, surgical, obstetric and children's wards.

Each appointment will be for a period of one year. The salary will be at the rate of £250 per annum for the first six months and at the rate of £300 per annum for the second six months, with board, residence and laundry. The officers appointed will be required to pay to the Corporation any fees received in connection with their official work.

Applications, accompanied by copies of three recent testimonials, must reach the undersigned not later than first post on September 28th, 1937.

A. MASSEY,
Medical Officer of Health

The Council House,
Coventry.
September 11th, 1937.

ROYAL VICTORIA HOSPITAL, DOVER. (60 Beds.)

Applications are invited for the posts of SENIOR and JUNIOR HOUSE SURGEON (male), at salaries of £150 and £120 per annum respectively. The appointments are for a period of six months, as from October 15th. Some surgical experience essential for senior post. Work light and time for study.

Applications, stating age, with particulars of experience, and accompanied by copies of three recent testimonials, should be sent to the Hon. Secretary not later than October 8th, *on a form to be obtained from him.*

THE KIDDERMINSTER AND DISTRICT GENERAL HOSPITAL.

The Committee are prepared to appoint a PART-TIME PATHOLOGIST and to pay *him an* honorarium of £200 a year. He must possess a registered medical qualification. He will be expected to attend at the Hospital on two days a week and at such other times as may be necessary.

Applications to be sent, with copies of two testimonials, to the Secretary, Miss Susan Smith, South Cliff, Kidderminster.

LONDON COUNTY COUNCIL

Applications invited from Medical Practitioners of at least one year's standing to undermentioned positions. Candidates must have held Resident appointment in a general hospital for at least six months. Married quarters not available.

ASSISTANT MEDICAL OFFICERS (Grade I).—Salary £350—£25—£425, with board, lodging and washing.

*(a) FULHAM HOSPITAL, St. Dunstan's Road, Hammersmith, W.6. (Two positions).

(1) Duties mainly surgical, experience in fracture work essential.

(2) Medical duties, obstetrical experience essential.

*(b) LEWISHAM HOSPITAL, Lewisham, S.E.13. Maternity, gynaecological and surgical duties.

*(c) ST. CLEMENT'S HOSPITAL, 2a, Bow Road, E.3 Medical duties Experience in mental diseases essential

(d) ST. GILES' HOSPITAL, Brunswick Square, S.E.5. Gynaecological and obstetrical duties

(e) ST. JAMES'S HOSPITAL, Ouseley Road, Balham, S.W.12 Experience in children's diseases essential.

*(f) ST. NICHOLAS' HOSPITAL, Plumstead, S.E.18 Duties mainly surgical, experience in midwifery desirable.

ASSISTANT MEDICAL OFFICERS (Grade II) —Salary £250 a year, together with board, lodging and washing. Appointment for one year only in first instance (renewable for a second year under certain conditions)

*(g) LAMBETH HOSPITAL, Brook Drive, S.E.11. Duties mainly medical.

*(h) LEWISHAM HOSPITAL, Lewisham, S.E.13 (Two positions.)

(1) Duties mainly medical.

(2) Maternity, gynaecological and surgical duties mainly.

(i) PADDINGTON HOSPITAL, Harrow Road, W.9. Duties mainly medical.

*(j) QUEEN MARY'S HOSPITAL, Sidcup, Kent. Duties mainly medical, some surgical experience desirable.

(k) ST. JAMES'S HOSPITAL, Ouseley Road, Balham, S.W.12. Duties obstetrical and gynaecological, including anaesthetics

*(l) ST. MARY, ISLINGTON, HOSPITAL, Highgate Hill, N.19. (Two positions.)

Duties mainly medical, experience in anaesthetics desirable for both positions.

*(m) ST. STEPHEN'S HOSPITAL, 369, Fulham Road, S.W.10. Duties mainly medical, experience in anaesthetics desirable

* No accommodation for a woman.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health, Staff Division 2A, County Hall, S.E.1, returnable by October 4th.

Canvassing disqualifies.

LONDON COUNTY COUNCIL.

Public Health Department

Applications invited from women with experience in psychiatric social work for appointments as SOCIAL WORKER in connexion with mental cases at ST. ALFEGE'S HOSPITAL, Vanbrugh Hill, S.E.10. Salary £235-£12 10s.-£310. Social workers co-operate with medical staff in investigating the history of mental patients in such ways as medical staff may direct. Only candidates with experience or training in psychiatric social work will be considered.

Application forms obtainable (stamped, addressed foolscap envelope necessary) from Medical Officer of Health (S.D.3), County Hall, Westminster Bridge, S.E.1. Forms returnable by October 9th, 1937. Canvassing disqualifies.

BOROUGH MENTAL HOSPITAL, ROWDITCH, DERBY.

SECOND ASSISTANT MEDICAL OFFICER wanted. Commencing salary £350 per annum, rising by £25 per annum to £450, with an additional £50 per annum if in possession of the Diploma in Psychological Medicine, with board, apartments, attendance and laundry. Candidates must be unmarried and registered under the Medical Act. The appointment is subject to 3 per cent. deduction on salary and emoluments under the Asylum Officers' Superannuation Act, 1909. Applications, stating age and full particulars, together with copies of three recent testimonials, to be sent not later than October 11th to the Medical Superintendent.

KING EDWARD MEMORIAL HOSPITAL, EALING
(131 Beds.)

Applications are invited for the post of:—

HOUSE SURGEON (male), to act in the Eye, Gynaecological and Ear, Nose and Throat Departments. Six months' appointment with possibility of re-election for a further period. Salary £150 per annum, with usual residential emoluments.

Applications, stating age, experience and qualifications and accompanied by copies of two recent testimonials to be sent to the undersigned immediately.

R. A. MICKELWRIGHT,
House Governer.

LONDON COUNTY COUNCIL.

Applications invited from MEDICAL PRACTITIONERS of at least one year's standing to undermentioned positions. Experience in a resident appointment in a General Hospital for at least six months desirable. Married quarters not available.

(a) QUEEN MARY'S HOSPITAL FOR CHILDREN, Carshalton, Surrey (1,284 beds). There are special departments for rheumatic and orthopaedic conditions, for congenital malformations and for nutritional diseases.

ASSISTANT MEDICAL OFFICER (Grade I).—Salary £350—£25—£425, with board, lodging and washing.

ASSISTANT MEDICAL OFFICER (Grade II). —Salary £250 a year, together with board, lodging and washing. Appointment for one year only in first instance (renewable for a second year under certain conditions).

*(b) HEATHERWOOD HOSPITAL, Ascot, Berks., for orthopaedic conditions and surgical tuberculosis in children.

ASSISTANT MEDICAL OFFICER (Grade II). —(Salary, etc., as above.)

* No accommodation for a woman.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health, Staff Division, 2A, County Hall, S.E.1, returnable by October 11th.

Canvassing disqualifies.

LONDON COUNTY COUNTY.

TEMPORARY DISTRICT MEDICAL OFFICERS REQUIRED FOR THE FOLLOWING DISTRICTS:

(1) Area III, District I (part Lower Holloway and part Highbury). Provisional salary £135.

(2) Area V, District D (East Fulham) Provisional salary £160.

(3) Area VIII, District L (part Peckham, Dulwich and Sydenham). Provisional salary £222 10s.

Persons engaged required to carry out duties prescribed by Public Assistance Order, 1930, and to reside in or near district. Engagement until March 31st, 1938, in first instance. Remuneration and conditions subject to review.

Application form obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health, Staff Division 2A, County Hall, S.E.1, returnable by October 4th.

Canvassing disqualifies.

LONDON COUNTY COUNCIL.

Applications are invited from Medical Practitioners (men and women) with lecturing experience, as INSTRUCTORS for FIRST AID and HEALTH CLASSES in the London County Council evening institutes. Fee 22s. for lecture of from one to two hours. Forms T.7/40 from Education Officer (T.7), County Hall, S.E.1 (stamped addressed foolscap envelope necessary). Canvassing disqualifies.

ROYAL SUSSEX COUNTY HOSPITAL, BRIGHTON

Applications are invited for the Offices of HONORARY PHYSICIAN, and (in the event of a vacancy occurring) HONORARY ASSISTANT PHYSICIAN, from gentlemen who are Doctors of Medicine of one of the Universities of the British Empire, or Fellows or Members of the Royal College of Physicians of London, Edinburgh or Dublin, and who are duly registered under the Medical Acts.

Further particulars of the above mentioned appointments may be obtained from the undersigned.

Applications must reach the Secretary-Superintendent at the Hospital before 12 noon on Friday, October 22nd, 1937.

L. L. W. LANCASTER-GAVE,
Secretary-Superintendent.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.

WANTED, an ASSISTANT MEDICAL OFFICER (male) for the Crossley Sanatorium, Delamere Forest, Cheshire (110 Beds). Salary £200 per annum, with board, apartments, and laundry. Candidates must be registered. The appointment offers an opportunity for gaining experience in modern methods of treating Pulmonary Tuberculosis

Applications, stating age, with copies of testimonials, to be sent not later than October 4th to W. Hunt, Secretary, 45, Hardman Street, Manchester.

STROUD GENERAL HOSPITAL, Stroud, Glos.

RESIDENT MEDICAL OFFICER required. Candidates must be fully qualified and registered. Six months' appointment from October 20th. Salary £160 per annum, with board and laundry. Applications, stating nationality, together with copies of three recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

C. FORD SPENCER,
Secretary.

VICTORIA HOSPITAL, BURNLEY.
(150 Beds.)

HOUSE PHYSICIAN (male).

Applications are invited for the above post, which will become vacant on September 30th. The duties include the giving of a certain number of anaesthetics. The appointment is for six months in the first instance, at a salary of £150 per annum, together with board, residence and laundry. At the end of this period reappointment may be applied for, and, if granted, the salary for the second six months will be at the rate of £200 per annum.

Applications, giving full details of qualifications and experience, stating nationality, together with copies of recent testimonials, should be addressed to the undersigned forthwith.

J. E. WHEATCROFT,
Secretary.

CITY MENTAL HOSPITAL, HUMBERSTONE, LEICESTER.

THIRD ASSISTANT RESIDENT MEDICAL OFFICER (male, single), under 30. Residential General Hospital experience is desirable. Salary £350, rising by £50 per annum to £450 per annum, together with board, lodging, washing, and attendance, valued for purposes of superannuation at £150 per annum. An additional £50 per annum will be paid for possession of a D.P.M.

The appointment is subject to the provision of the Asylums Officers' Superannuation Act, 1909.

There is a good laboratory and two active Psychiatric Clinics, one attached to the Leicester Royal Infirmary.

Applications, giving particulars of experience, etc., together with names of three references, one of which should be non-professional, and marked "A.M.O.," to be sent to the Medical Superintendent.

ROYAL BERKSHIRE HOSPITAL, READING.
(336 Beds)

Applications are invited for the following resident appointments which fall vacant on November 1st, 1937:—

One HOUSE PHYSICIAN (male).

One HOUSE SURGEON to the Special Departments (Eye, Ear, Nose and Throat) (male).

One HOUSE SURGEON (male).

Appointments are for six months, and candidates must be fully qualified and registered.

Remuneration at the rate of £150 per annum, with board, residence and laundry.

Applications, stating age and experience, with copies of testimonials, to be sent to the undersigned on or before October 9th, 1937.

H. E. RYAN,
Secretary and House Governer.

THE DEWSBURY AND DISTRICT GENERAL INFIRMARY, DEWSBURY.

The Post is a recognised one by the Royal College of Surgeons (England).

Applications are invited for the post of SENIOR HOUSE SURGEON (male). Salary £200 per annum, with board, residence and laundry.

The Infirmary is a new Voluntary Hospital of 100 Beds, and has the usual Special Departments, with Visiting Consulting Specialists in attendance.

Applications, stating age and hospital experience, together with copies of recent testimonials, to be sent as immediately as possible to my office.

FRED SMITH,
Secretary-Superintendent.

BARROWMORE TUBERCULOSIS SANATORIUM AND SETTLEMENT, Gt. Barrow, Chester.

HOUSE PHYSICIAN (male) required at once. The appointment is for six months, and is renewable. Salary £150 per annum, with board, residence, and laundry.

The Institution deals with all stages of Pulmonary Tuberculosis, and comprises Hospital and Sanatorium accommodation, extensive workshops for graduated work, and a Settlement.

Special treatment, Sanocrysin and Artificial Pneumothorax given.

Applications, marked "House Physician," with copies of three testimonials, should be sent to the Medical Director at the above address

E. L. SANDILAND,
Medical Director.

ROYAL ASYLUM OF MONTROSE.

Applications are invited for the post of PHYSICIAN-SUPERINTENDENT to the Royal Asylum of Montrose; Salary £1,200 per annum, rising by annual increments of £50 to £1,400, with free house and garden, local rates, electricity and the services of a chauffeur-gardener, for whom a house will be provided.

Superannuation allowance under the Lunacy, Scotland, Act, 1866

Applications, stating age, qualifications and previous experience, along with 35 copies of testimonials, to be submitted on or before October 11th, 1937, to C. K. Alexander, Clerk and Treasurer, Royal Asylum, Montrose, Scotland.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.1.

Applications are invited from duly qualified and registered medical practitioners for the post of ANAESTHETIC REGISTRAR at the above Hospital for one year from November 1st, 1937, with option to apply for reappointment for two subsequent years.

The post is a resident one and carries with it a remuneration of £100 per annum.

Candidates should have had experience in all forms of anaesthetics, especially dental work.

They should submit applications, stating age and qualifications, to the undersigned on or before October 9th, 1937.

RICHARD T. BARTLEY,
Secretary.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.3

The Committee of Management invite applications for the following posts:

RESIDENT SURGICAL OFFICER. Candidates must have held a Resident Hospital appointment for not less than six months. Salary £150 per annum with board and residence, and an additional £25 per annum for services in connexion with paying patients. The appointment is for twelve months, commencing November 1st.

ASSISTANT RESIDENT MEDICAL OFFICER. Candidates must have held a Resident Hospital appointment for not less than six months. Experience in Artificial Pneumothorax essential, and in Ear, Nose and Throat work desirable. Salary £150 per annum, with board and residence. The appointment is for six months, commencing November 1st.

HOUSE PHYSICIANS. There are three vacancies. The duties include work in the Out-patient Department and in the Wards. One of the selected candidates will be appointed Assistant to the Tuberculosis Officer for the Local Tuberculosis Dispensary at the Hospital. The appointment is for six months commencing November 1st with an honorarium of £50.

Applications, with copies of testimonials, must reach the undersigned not later than Saturday, October 9th.

F. G. ROUVRAY,
Brompton, September, 1937. Secretary.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, Haverstock Hill, N.W.3.

(Out-patient Department, Bayham Street, Camden Town, N.W.1.)

The Council invite applications for the appointment of SURGEON TO OUT-PATIENTS.

Candidates must be Fellows of the Royal College of Surgeons, England.

Applications, stating age, qualifications, and experience, together with copies of not more than three testimonials, should reach the Secretary not later than October 18th.

Candidates will be required to call upon members of the Honorary Medical Staff of the Hospital.

Full particulars, together with the Regulations governing the appointment, may be obtained on application to the Secretary, Hampstead General and North-West London Hospital, Haverstock Hill, N.W.3.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, Haverstock Hill, N.W.3.

(Out-patient Department, Bayham Street, Camden Town, N.W.1.)

The Council invite applications for the appointment of PHYSICIAN TO OUT-PATIENTS.

Candidates must be Members or Fellows of the Royal College of Physicians, London.

Applications, stating age, qualifications, and experience, together with copies of not more than three testimonials, should reach the Secretary not later than October 18th.

Candidates will be required to call upon members of the Honorary Medical Staff of the Hospital.

Full particulars, together with the Regulations governing the appointment, may be obtained on application to the Secretary, Hampstead General and North-West London Hospital, Haverstock Hill, N.W.3.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, Haverstock Hill, N.W.3.

APPOINTMENT OF CASUALTY MEDICAL OFFICER.

Applications are invited from unmarried registered Medical Practitioners for the position of Casualty Medical Officer, vacant on October 1st, at the Out-patient Department of the Hospital, Bayham Street, Camden Town.

The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should be directed to the Secretary.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, WESTMORELAND STREET, MARYLEBONE, W.1.

OUT-PATIENT MEDICAL OFFICER.

Applications are invited for the post of Out-Patient Medical Officer (non-resident, male). The appointment is for a period of six months from November 1st, but may be renewed for a further period not exceeding six months. Salary at the rate of £125 per annum. Candidates, who must be duly registered Medical Practitioners, will not be expected to call on the Honorary Medical Staff, but should send their applications, with copies of three recent testimonials, to me at the Hospital not later than Monday, October 4th.

The Out-Patient Medical Officer will be required to assist the Honorary Medical Staff on five afternoons weekly, or four afternoons and one morning, as may be arranged.

ROBERT G. E. WHITNEY,
Secretary.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, WESTMORELAND STREET, MARYLEBONE, W.1.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer (male). The appointment is for a period of six months from November 1st, but may be renewed for a further period not exceeding six months. Salary at the rate of £150 per annum, with board, residence and washing.

Candidates, who must be duly registered medical practitioners, will not be expected to call on the Honorary Medical Staff, but should send their applications, with copies of three recent testimonials, to me at the Hospital not later than Monday, October 4th.

ROBERT G. E. WHITNEY,
Secretary.

THE BELGRAVE HOSPITAL FOR CHILDREN (Incorporated), 1 Clapham Road, S.W.9

The Committee of Management invite applications for the posts of TWO HOUSE PHYSICIANS and ONE HOUSE SURGEON, which will become vacant on October 31st.

Applicants (men) must be fully qualified and registered. The appointments are for six months, with board, residence and washing provided. Salary at the rate of £100 per annum in each case. Applications, with copies of testimonials, stating age, to be forwarded on or before Thursday, October 7th.

By Order,
THOS. CLAPHAM, Secretary.

THE INFANTS HOSPITAL, Vincent Square, Westminster

Applications are invited for the post of PATHOLOGIST. The appointment will be a full-time one. Salary at the rate of £700 per annum.

An Assistant will subsequently be appointed.

Applications, with copies of not more than three testimonials, should reach the undersigned not later than October 8th.

ALFRED J. SMALL,
Secretary.

NATIONAL HOSPITAL, QUEEN SQUARE, W.C.1

HONORARY ASSISTANT OPHTHALMIC SURGEON.

Applications are invited for the post of Honorary Assistant Ophthalmic Surgeon and should be sent to the undersigned on or before September 30th, 1937. Applicants should be Fellows of the Royal College of Surgeons of England.

GODFREY H. HAMILTON,
Secretary.

NATIONAL HOSPITAL, QUEEN SQUARE, W.C.1.

HONORARY DENTAL SURGEON.

Applications are invited for the post of Honorary Dental Surgeon, and should be sent to the undersigned on or before September 30th, 1937.

The qualifications required are L. or M.R.C.S. and L.D.S. Any further particulars may be obtained in the Secretary's Office.

GODFREY H. HAMILTON,
Secretary.

NATIONAL HOSPITAL, QUEEN SQUARE, W.C.1.

REFRACTION OFFICER.

Applications are invited, from fully Registered Practitioners, for the post of CLINICAL ASSISTANT in the Refraction Department, and should be sent to the undersigned on or before September 30th, 1937. Two sessions each month, honorarium £1 1s. per session.

GODFREY H. HAMILTON,
Secretary.

WEST LONDON HOSPITAL, Hammersmith, W.6. (239 Beds.)

Applications are invited for the post of RESIDENT ASSISTANT SURGEON (male).

The appointment is an open one. Salary at the rate of £200 per annum (plus £25 for services in connexion with the Venereal Diseases Department), with board, residence and laundry allowance. Four weeks' holiday a year. The appointment is for one year from November 1st next, terminable by three months' notice on either side, and, subject to annual re-election, may be extended to not more than three years.

Candidates must be duly qualified registered medical practitioners, unmarried, and should hold one of the higher surgical qualifications. As Senior Resident Officer the Resident Assistant Surgeon will be responsible for certain administrative duties.

Applications, with copies of testimonials, should reach me not later than first post on Saturday, October 16th, 1937. Candidates must attend a Meeting of the Medical Council on Friday, October 22nd, 1937, at 4.30 p.m., and, prior to that date, call upon and send copies of their application and testimonials to each member thereof. They must not canvass members of the Board, but, if so notified, must attend a Meeting of the Board of Management at 5 p.m., on Tuesday, October 26th, 1937, when the appointment will be made.

H. A. MADGE,
Secretary.

ROYAL NORTHERN HOSPITAL, Holloway, N.7.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Male). Candidates must be registered medical practitioners of at least two years' standing and have held at least two previous house appointments. Preference will be given to candidates experienced in practical operative surgery.

The appointment is for one year from November 9th, 1937. Particulars concerning remuneration and emolument (amounting to approximately £370 with board and residence), together with forms of application and rules, can be obtained from the undersigned.

Applications, with copies of testimonials, should be sent on or before October 8th to

GILBERT G. PANTER,
Secretary.

PADDINGTON GREEN CHILDREN'S HOSPITAL (Incorporated), London, W.2.

HOUSE PHYSICIAN.
HOUSE SURGEON.

These appointments will become vacant on November 1st, 1937. Gentlemen (unmarried) are invited to send in their applications, with copies of three testimonials, to the undersigned not later than Friday, October 15th, 1937. Salary of each at the rate of £150 per annum, with board and residence. Candidates who have held a responsible Resident Hospital appointment are preferred. The appointments are for a period of six months.

JAMES A. HAMLIN,
Secretary.

PADDINGTON GREEN CHILDREN'S HOSPITAL (Incorporated), London, W.2

Applications are invited for the appointment of ANAESTHETIST to the Hospital.

Candidates must be registered under the Medical Act. Applications should be forwarded to the undersigned not later than Friday, October 15th, 1937.

The appointment carries with it an honorarium of £25 per annum per session, and attendance will be required, for the time being, on Tuesday *mornings*.

JAMES A. HAMLIN,
Secretary.

HOSPITAL OF ST. JOHN & ST. ELIZABETH, 60, Grove End Road, N.W.8

Applications are invited for the post of RESIDENT HOUSE SURGEON (male). The post is recognized for the degree of M.S. London University. The appointment will be for six months from November 1st, 1937. Salary at the rate of £75 per annum, with full board.

Applications, together with copies of three testimonials, should reach the undersigned on or before Tuesday September 28th.

F. DUDLEY HOBBS, B.A.,
Secretary.

THE HOSPITAL FOR WOMEN, SOHO SQUARE, LONDON, W.1.

The Committee of Management invite applications for the post of SURGEON in charge of out-patients (gynaecological). Candidates must be Fellows of one of the Royal Colleges of Surgeons of the United Kingdom, and engaged only in consulting practice. Six copies of applications and testimonials must reach the undersigned, from whom further particulars may be obtained, by October 16th, 1937.

J. P. HEMING, Secretary.

APPOINTMENTS—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C. 1 (in the case of Scottish appointments, with the Scottish Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE	CONTRACT PRACTICE.—*(contd.)*	CONTRACT PRACTICE—*(contd.)*
ABERTYSSWG MEDICAL AID SOCIETY *(Medical Officer.)*	LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*
BLACKPOOL AND FYLDE FRIENDLY SOCIETIES COUNCIL *(Medical Officer.)*	MID-RHONDDA MEDICAL AID SOCIETY. *(Assistant Medical Officer.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	

(b) Overseas

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Secretary to the British Medical Association, B.M.A. House, Tavistock Square, W.C. 1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES *(All Friendly Society Appointments.)*	The Medical Secretary, New South Wales Branch, 135, Macquarie St., Sydney, N.S.W.	**VICTORIA** *(All Institute or Medical Dispensaries)*	The Honorary Secretary, Victorian Branch, British Medical Association, Medical Society Hall, Albert St., East Melbourne, Victoria.	**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, "Shell House," 205, St. George's Terrace, Perth, Western Australia.
QUEENSLAND *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17.				

September 22, 1937 By Order of the Council. G. C. ANDERSON, *Secretary.*

BRISTOL GENERAL HOSPITAL.

RESIDENT SURGICAL OFFICER AND REGISTRAR (male).

The Committee invites applications for the appointment. Salary at the rate of £200 per annum (plus estimated emoluments of £200 p.a.), with board, residence, etc., provided in the Hospital. Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability. The duties attaching to the post are chiefly surgical, but being also in part administrative, experience in this direction is therefore essential.

Applications, accompanied by copies of testimonials, three of which must preferably be given in support of the application, to be forwarded to the undersigned on or before October 5th, from whom forms of application and copies of the duties may be obtained.

The Hospital contains 273 beds, and is a School of Medicine attached to the University of Bristol.

THOMAS W. GREGG, F.C.C.S., Secretary.

HULL ROYAL INFIRMARY.

Applications are invited from registered Medical Practitioners for the following post (male):—

SECOND CASUALTY OFFICER, vacant October 5th. Salary at the rate of £150 per annum, plus board, residence, and laundry.

In addition to carrying out duties in the Casualty Department, the Officer appointed will act as House Surgeon to one of the Honorary Assistant Surgeons, and will thus obtain Ward and Theatre experience. He will be eligible for promotion to a more senior post when a vacancy occurs.

The appointment will be for a period of six months, but will be determinable at any time by one month's notice on either side.

Applications, giving particulars of age, experience, and nationality, together with copies of recent testimonials, should be addressed to the undersigned.

R. J. CARLESS, September 13th, 1937. House Governor.

BURY INFIRMARY (LANCS) (127 Beds.)

RESIDENT SURGICAL OFFICER (MALE).

Applications are invited for the above post from those holding the Fellowship of one of the Royal Colleges of Surgeons.

The appointment is for a term of one year, with provision for an extension of a further twelve months, and the successful candidate will be expected to commence duties immediately.

Salary will be paid at the rate of £400 per annum, together with board, residence and laundry.

Applications, stating age, qualifications, and nationality, together with copies of three recent testimonials, are to be addressed to the undersigned, and should be forwarded as soon as possible, endorsed "R.S.O."

H. WILKINSON, Superintendent.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN. (80 Beds.)

Wanted—forthwith—RESIDENT HOUSE PHYSICIAN (LADY). Salary £130 p.a. The appointment is for six months. Applicants must be fully qualified. Applications, with three testimonials, to be sent to the undersigned.

ARTHUR N. WHISTON, Secretary.

25, St. Mary's Gate, Derby.

GREAT YARMOUTH GENERAL HOSPITAL. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two appointments). Duties to commence at once.

Applicant must be male and unmarried. Salary at the rate of £140 per annum, with board, residence and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FREDK. L. GAITFIELD, Secretary.

NORTH LONSDALE HOSPITAL, BARROW-IN-FURNESS. (152 Beds.)

There will be vacancies for a Resident Surgical Officer and a RESIDENT HOUSE PHYSICIAN at this Hospital on October 15th, 1937, and applications are invited for the positions from fully qualified male Practitioners experienced in the administration of Anaesthetics. Salaries, Surgical Officer £200 and Physician £175 per annum, with board, residence and laundry. Applications, stating age, qualifications, experience and nationality, accompanied by copies only of three recent testimonials, should be sent to the Secretary on or before September 30th.

PRINCESS ALICE MEMORIAL HOSPITAL, EASTBOURNE.

(Voluntary General Hospital, 120 Beds, Two House Surgeons.)

Applications are invited for the post of RESIDENT HOUSE SURGEON (male), vacant on October 5th, 1937. Salary at the rate of £150 per annum, with board and laundry.

Applications, with copies of three recent testimonials, should be delivered to the undersigned by first post on Wednesday, September 29th, 1937.

W. RUSSELL RUDALL, September 13th, 1937. Secretary.

BRISTOL ROYAL INFIRMARY.

Applications are invited for the post of SENIOR HONORARY ANAESTHETIST. Candidates must be registered Medical Practitioners and hold a Diploma in Anaesthetics of the Conjoint Board of the Royal College of Physicians and Surgeons of England. Applications, stating age, together with copies of not more than three recent testimonials, to be sent to the undersigned on or before October 16th, 1937.

ELLIS C. SMITH, F.C.I.S., Secretary and House Governor.

(Advertisements continued on p. 56)

BRITISH MEDICAL JOURNAL

Phone: Euston 2111

B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1

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The British Medical Association reserves the right to refuse or interrupt the insertion of any advertisement.

NOT CLASSIFIED

CIGARS. (ENDCUT) ALL HAVANA TOBACCO. GOOD SMOKES at a low price, quality guaranteed. Box of 50 for 25/-, post free.—Sole Manufacturers: J. J. FREEMAN & CO., LTD., 90, Piccadilly, London, W.1. (GRO. 1529.)

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"SOLACE CIRCLES" TOBACCO *THE* finest combination ever discovered of Choice Natural Tobaccos. Every pipeful an indescribable pleasure. 12/6 per ½ lb. tin, post free. Sole Manufacturers: J. J. FREEMAN & CO., LTD., 90, Piccadilly, London, W.1 (GRO. 1529.)

HOME WANTED AS SOLE PATIENT FOR boy aged 15 years Mentally weak, physically strong West Country preferred.—Address, No. 429, B.M.A. House, Tavistock Square, W.C.1

NATIONAL ADOPTION SOCIETY, 4, BAKER STREET W.1 Telephone: Welbeck 7211, OFFERS ASSISTANCE in the legal adoption of illegitimate and orphan babies into suitable family life Chairman: THE LADY GWENETH CAVENDISH.

REQUIRED BY EXPERIENCED MEDICAL MAN, INTRODUCTION TO INSURANCE COMPANY WORK in London. Good West End rooms and cash available. Write in confidence to Address No. 745, B.M.A. House, Tavistock Square, W.C.1.

RE WILFRID EDWARD STURGES-JONES, deceased.

Pursuant to the Trustee Act, 1925.

All persons having *Claims* against the *Estate* of WILFRID EDWARD STURGES-JONES late of 26 Half Moon Lane Herne Hill in the County of London Medical Practitioner (who died on the 10th day of May 1937, and whose Will was proved by Westminster Bank Limited of 41 Lothbury in the City of London the Executor therein named on the 22nd day of July 1937 in the Principal Probate Registry) are required to send particulars thereof to the undersigned on or before the 25th day of November next after which date the Executor will proceed to distribute the Estate having regard only to the claims of which it shall then have had notice.

Dated this 14th day of September 1937.

C. A. RUSS & SON,
Solicitors for the said Executor.
32, St. Mary Axe, E.C.3.

TYPEWRITING, DUPLICATING, TRANSLATIONS.—Experts in Medical work. TESTIMONIALS, THESES, etc., accurately copied in style that commands attention. — WOBURN BUREAU, 3, Upper Woburn Place, London, W.C.1 (adjoining B.M.A. House). EUSton 1775.

TYPEWRITING.—SPECIALISTS IN TYPING medical and scientific papers, lectures, theses and books. Shorthand-typists always available Proof-reading, indexing. — MARGARET WATSON, LTD., 16, Palace Chambers, Bridge Street, S.W.1. WHItehall 3838.

ASSISTANCIES

WANTED IMMEDIATELY, PROGRESSIVE ASSISTANT, male (indoor), Yorks city. Excellent prospect of early partnership. Hospital and G.P. experience advantageous. Capital essential.—Full personal and professional particulars, No. 503, B.M.A. House, Tavistock Sq., W.C.1.

WANTED IMMEDIATELY, UNMARRIED male indoor ASSISTANT, Scot preferred, outskirts of Midland Town. Good middle-class Practice. Commencing salary £300 p.a. upwards according to experience. Commission on midwifery and anaesthetics. Car provided.—Address, No 701, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY, INDOOR MALE ASSISTANT for practice within a few miles of Cardiff. Good salary and prospects for suitable man.—Address, No. 725, B.M.A. House, Tavistock Square, W.C.1

WANTED IMMEDIATELY.—INDOOR AND Outdoor ASSISTANTS for Town and Country Practices, with and without view to Partnership. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2

WANTED EARLY OCTOBER INDOOR MALE ASSISTANT (British) for mixed country practice in Shropshire. Must have Hospital experience £300 p.a., all found, car provided —Address, No. 707, B.M.A. House, Tavistock Square, W.C.1.

WANTED.— EARLY OCTOBER, OUTDOOR male ASSISTANT (English or Scotch), age 24 to 30 for town-country practice in Shropshire, with view to partnership later. Ex.-H.S. and H.P. experience essential and G.P. experience preferred. Salary £400 p.a. and £50 car allowance.—Address, No. 443, B.M.A. House, Tavistock Square, W.C.1.

WANTED FROM BEGINNING OF OCTOBER, Indoor ASSISTANT with view to Partnership. Manchester Suburb.—Address, No. 712, B.M.A. House, Tavistock Square, W.C.1.

WANTED ASSISTANT, OUTDOOR, BRANCH house available for married man. Salary £400. Country town, Welsh Border. Time for study. Eventual partnership.—Address, No. 740, B.M.A. House, Tavistock Square, W.C.1.

WANTED, ASSISTANT, MALE, NEAR London. Work easy. Moderate salary. Irish preferred Time for reading. Surgical experience an advantage.—Address, No. 735, B.M.A. House, Tavistock Square, W.C.1

WANTED, FEMALE ASSISTANT, MIDLAND City. Salary £425 outdoor. Drive car Car allowance. State when free. References, age, photograph.—Address, No. 733, B.M.A. House, Tavistock Square, W.C.1.

WANTED FOR LARGE INDUSTRIAL Practice in Birmingham, Outdoor ASSISTANT with view to early partnership. Some experience necessary, and must be able to drive car.—Address, No. 710, B.M.A. House, Tavistock Square, W.C.1.

WANTED, INDOOR ASSISTANT, TO COMMENCE end of September. Salary £300 per annum. Car provided. Some experience of midwifery preferred.—Address, No. 739, B.M.A. House, Tavistock Square, W.C.1.

WANTED, MALE ASSISTANT SINGLE, for Lancashire Practice, salary £400 per annum all found. Must run own car.—Address, No. 728, B.M.A. House Tavistock Square, W.C.1.

WANTED, MALE OUTDOOR ASSISTANT for old-established industrial practice. Light work, no midwifery, and no night calls. £420 p.a. —Apply, Dr. E. HAY, 240, Victoria Dock Road, London, E.16, Nearest station, Custom House, L.N.E.R.

WANTED, NEAR CARDIFF, PERMANENT outdoor male ASSISTANT in October. Salary £312 p.a., all found. Car allowance.—Address, No. 527 B.M.A. House, Tavistock Square, W.C.1.

WANTED NOVEMBER 1st. OUTDOOR ASSISTANT, young, male, single, Protestant, for mixed practice South Coast resort. 3 partners, dispenser. Choice of suitable rooms. Salary commence £300 all found. £50 car allowance, garage. Full particulars Address, No. 726, B.M.A. House, Tavistock Sq., W.C.1.

WANTED, NOV. 1st., ASSISTANT, SINGLE, male, strictly temperate Country Practice, North Wales. Welsh preferred but not essential. Prospect of partnership. Salary £300-£350 p.a. (according to experience), all found, and £50 car allowance. Usual bond. State age, nationality, and essential particulars.—Address, No. 722, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OCTOBER 1st, MALE INDOOR ASSISTANT in panel practice, 5 miles of Birmingham. £350 with early increase to £400 p.a., Work light. Comfortable home.—Address, No. 732, B.M.A. House, Tavistock Square, W.C.1.

WANTED OUTDOOR ASSISTANT, pleasant country district, N. Wales. Small town with Hospital. Work very light. Car provided. Salary £400.—Address, No. 233, B.M.A. House, Tavistock Square, W.C.1.

WANTED, SINGLE, MALE, ASSISTANT FOR Glamorgan colliery Practice. Salary £350 p.a., indoor, or £400 p.a. outdoor, with rooms and attendance.—Address, No. 438, B.M.A House, Tavistock Square, W.C.1.

WANTED, TO START SOON, MALE ASSISTANT, English or Scottish, for large practice in South Yorks. town. Indoor. Salary, £300-£350 p.a Car, dispenser, hospital. Experience not essential.—Address, No. 434, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT WANTED, SINGLE. £400 P.A., all found. Welsh seaside resort. Experienced, ex-H.P. Knowledge of Welsh desirable. Partnership if desired. State age, full particulars.—Address, No. 737, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT (WOMAN ROMAN CATHOLIC preferred) wanted by woman doctor, London area. Experience in general practice and midwifery essential. Furnished house provided.—Address, No. 734, B.M.A. House, Tavistock Square, W.C.1.

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WELL QUALIFIED OUTDOOR ASSISTANT required at once for large mixed practice in desirable town 50 miles from London, £550 p.a., own car. Prospects to right man. Address, No. 715, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS

WANTED, LOCUMS, BY MEDICAL WOMAN, L.R.C.P.S., L.M., D.P.H., accus. sole charge of man's Practice, excel. refs., free 28th inst., will go anywhere.—"MEDICAL," 3, Reservoir Road, Whaley Bridge, nr. Stockport. (Phone: Whaley 38.)

EXPERIENCED, RELIABLE PRACTITIONER desires LOCUM WORK. Disengaged after October 3. Distance no object. Excellent references —Locum, 8, Strouden Avenue, Bournemouth.

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A HIGHLY QUALIFIED LADY SECRETARY, knowing French, would like to find a post for three afternoons a week, and/or Saturdays and Sundays. Exceptional references.—Address No. 747, B.M.A. House, Tavistock Square, W.C.1.

CHAUFFEUSE - RECEPTIONIST, 30, thoroughly competent driver, many makes, clean licence for nine years.—Address, No. 706, B.M.A. House, Tavistock Square, W.C.1.

CHAUFFEUR-DISPENSER. YOUNG MAN (25) requires position. 8 years' dispensing experience (country, provincial, and West End); 7 years' clean licence. Further particulars on application to: S. H. HILL, 31, *Ripley Gdns.*, S.W.14.

DOCTORS REQUIRING QUALIFIED Dispensers, Nurse-Dispensers, Secretary-Dispensers or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5858. THE DISPENSER'S BUREAU, 3, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

A LADY DISPENSER BOOKKEEPER-SUPPLIED immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Bayswater 0969). Secretary, 7, Westbourne Park Road, W.2.

DOCTOR'S WIFE REQUIRES POST (resident) at Branch Surgery or similar position. Secretary, book-keeper, some dispensing. Excellent testimonials. Address No. 744, B.M.A. House, Tavistock Square, W.C.1.

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LADY DISPENSER-BOOKKEEPER (Hall) desires *POST Doctors, Hospital,* or *County* Council; permanent or locum; trained Bacteriology and Public Health work; last post 13 years; excellent testimonials; drives car; uses typewriter.—Address, No 714, B.M.A. House, Tavistock Square, W.C.1.

LADY DISPENSER (HALL) DESIRES POST with Doctor. Experienced bookkeeper. Good references.—Address, No. 731, B.M.A. House, Tavistock Square, W.C.1.

LADY DISPENSER, QUALIFIED (HALL), seeks POST with Doctor, South of England preferred. Hospital, private practice, and nursing experience. Conscientious and adaptable worker, free immediately.—Address, No. 705, B.M.A. House, Tavistock Square, W.C.1.

LADY LABORATORIAN, ON AMERICAN Register, graduated nurse, shorthand typist, experienced in all modern laboratory routine, seeks POST as LABORATORIAN and/or SECRETARY, preferably in London.—Address, No. 702, B.M.A. House, Tavistock Square, W.C.1.

NURSE-RECEPTIONIST, BRITISH BORN, American and Canadian trained, requires POST with Doctor in London. Excellent post, graduate experience. Some knowledge of filing and book-keeping.—Address, No. 720, B.M.A. House, Tavistock Square, W.C.1.

QUALIFIED LADY DISPENSER REQUIRES POST in Southend or London. Hospital work preferred. Locum experience had with Hospital and Doctor, also two years' shop experience. Can commence business immediately. —No. 729, B.M.A. House, Tavistock Sq., W.C.1

THE LONDON AND PROVINCIAL MEDICAL STAFF BUREAU (Licensed annually by the L.C.C.), 24b, Hereford Road, W.2, will supply qualified Dispensers, Secretaries, Receptionists, etc., without fee to Medical Practitioners. 'Phone: Bayswater 0823.

THE ROYAL ARMY MEDICAL CORPS ASSOCIATION, 85, Eccleston Square, S.W.1 (Telephone: Victoria 2722), supplies qualified Dispensers, Book-keepers, Laboratory Assistants, Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk Orderlies, Porters, Caretakers, etc., without charge to prospective employers.

WIDOW (32) GOOD APPEARANCE, pleasant personality, seeks post as RECEPTIONIST to Doctor or Dentist.—Mrs. Young, 92, St. Christopher's Buildings, Wigmore St., W.1.

YOUNG LADY, SECRETARY-DISPENSER (Apothecaries Hall). Good clinical experience with doctor. Desires change from present situation. Doctor, institution, or hospital (able to drive a car).—Address, No. 711, B.M.A. House, Tavistock Square, W.C.1.

YOUNG LADY, SMART APPEARANCE, desires post as SECRETARY-RECEPTIONIST to Doctor; knowledge Dispensing and first aid; can drive car; reasonable salary; live out; Manchester District.—Address, No. 713, B.M.A. House, Tavistock Square, W.C.1.

PARTNERSHIPS

WANTED, PARTNER FOR WOMEN'S Practice in North Midlands city. Share worth about £750 p.a. Later increase. Good house.—Address, No. 750, B.M.A. House, Tavistock Square, W.C.1

WANTED.—PARTNERSHIP SHARE RETURNING £1,100 p.a. upwards. Country or country town. London man, good type. Genuine buyer.—THE WESTERN MEDICAL AGENCY, 22, Clare Street, Bristol 1 (Bristol 22689), and 25, South Molton Street, W.1 (Mayfair 6941).

BEXHILL.—WANTED TO PURCHASE, SMALL SHARE in general practice. Ample capital available for all requirements, advantageous terms to principal.—Address, No. 718, B.M.A. House, Tavistock Square, W.C.1.

EXPERIENCED SCOTTISH GRADUATE DESIRES PARTNERSHIP, mixed practice, with good panel, keen worker, abstainer, married. Half-share to produce £1,000 upwards. Agreeable colleague, capital available. No objection preliminary assistant.—Address No. 748, B.M.A. House, Tavistock Square, W.C.1.

KENT COAST RESORT.—JUNIOR PARTNER wanted in large mixed-class Practice averaging £4,500 per annum. Panel 1,400. One-fifth share to begin with at 2 years' purchase. Preliminary assistantship. Ex-H.S., H.P. Well-educated Scotsman with G.P. experience preferred. —No 502, B.M.A. House, Tavistock Sq., W.C.1.

M.B., *B.CHIR. (CAMBRIDGE).* AET. 26, ex-H.P. and with G.P. experience, desires *PARTNERSHIP—town or country.* Good house, with some garden essential.—Address, No. 323, B.M.A. House, Tavistock Square, W.C.1.

SOUTH COAST.—PARTNERSHIP, THREE-QUARTERS SHARE, in mixed Practice averaging £2,870. Beautiful residential seaside town. Panel 1,800. Fees 3/6 to 10/6. Experience of major surgery essential. Appointment on staff of local hospital assured. Good house. £1,500. Premium two and a quarter years' purchase.—Address, No. 6229, B.M.A. House, Tavistock Square, W.C.1.

YOUNG DOCTOR (*ST. BARTS*), ENGLISH, requires PARTNERSHIP. Short preliminary assistantship if desired. 4½ years' hospital and G.P. experience.—Address, No. 708, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES

WANTED BY *SCOTS* GRADUATE, PRACTICE or PARTNERSHIP in Country District, Scotland or Northern Counties. Preliminary Assistantship will be considered.—Address, No. 649, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—PRACTICE URGENTLY REQUIRED in S.W. country district. About £750 p.a. Nice house, preferably to rent. Genuine buyer.—THE WESTERN MEDICAL AGENCY, 22, Clare Street, Bristol, 1 (Bristol 22689), and 25, South Molton Street, W.1 (Mayfair 6941).

WANTED BY EXPERIENCED G.P., MIXED PRACTICE (or PARTNERSHIP) within 50 miles of London. Income at least £1,200. Nice house and garden essential.—Address, No. 727, B.M.A. House, Tavistock Square, W.C.1.

WANTED BY EXPERIENCED PRACTITIONER, Country, Country Town, or Seaside PRACTICE in S. or S.W. £1,400 upwards. House 4-5 bedrooms. Garden. Educational facilities. Cash available.—Address, No. 721, B.M.A. House, Tavistock Square, W.C.1.

WANTED BY EXPERIENCED PRACTITIONER, a good or middle-class PRACTICE, any income over £1,500. Ample capital available. Private advertiser.—Address, No. 741, B.M.A. House, Tavistock Square, W.C.1.

WANTED BY EXPERIENCED PRACTITIONER, country PRACTICE about £700 p.a. Small convenient house preferably to rent. S. Midlands or South. Confidential.—Address, No. 716, B.M.A. House, Tavistock Square, W.C.1.

WANTED IN 6-12 MONTHS' TIME, mixed general PRACTICE near Leeds or Bradford. Income £2,000 upwards. Good house and garden essential. Good schools. Strictly confidential.—Address, No. 724, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—MIXED GENERAL PRACTICE in London or Suburbs. Large panel essential. Immediate cash available. Strictly confidential. —Address, No. 250, B.M.A. House, Tavistock Square, W.C.1.

WANTED SELL NUCLEUS, HAMPSHIRE coastal village, rapidly expanding. Bookings about £200 for last 9½ months, excluding panel, which is increasing fast. Great scope for energetic man with little capital. Charming house with small garden (rented). Good introduction. £250 for quick sale.—Address, No. 736, B.M.A. House, Tavistock Square, W.C.1.

A NUMBER OF SMALL PRACTICES AT LOW premiums. Excellent opportunities for practitioners wishing to get a practice with scope.—Apply, PEACOCK AND HADLEY, LTD., 67/68, Chandos Street, Strand, W.C.2.

CORNER HOUSE, GARDEN AND GARAGE, with small but good-class Medical Practice attached, in main road in S.W. district, for sale. *Offers invited; apply in first instance to No. 721,* B.M.A. House, Tavistock Square, W.C.1.

CORNWALL. OLD ESTABLISHED PRACTICE. Receipts last year nearly £1,400, good panel. Very nice house and garden, for sale with practice. Combined price, £3,800. Vendor selling through ill-health. Mortgage on house could be obtained.—Apply, PEACOCK AND HADLEY, LTD., 67/68, Chandos Street, Strand, W.C.2.

EXCELLENT PRACTICE WITH EXCELLENT SCOPE. Receipts last year, £400. Freehold detached house, 5 bedrooms. London, N.W. Accounts and Practice investigated. Vendor known to us.—Apply, PEACOCK AND HADLEY, LTD., 67/68, Chandos Street, Strand, W.C.2.

FOR SALE, OLD-ESTABLISHED PRACTICE in semi-industrial district within 20 miles of Manchester. Panel 1,040. Audited cash receipts £1,360. Premium 1½ years' purchase. Appointments (not included in above figure of cash receipts) £300, half of which might be obtained by purchaser. House with good living, professional and garage accommodation.—Address, No. 6014, B.M.A. House, Tavistock Square, W.C.1.

FOR SALE, OLD-ESTABLISHED PRACTICE with Panel, for immediate or early disposal in S.E. district of London. Good roomy house with garage to rent or sell. Terms cash for practice.—Address No. 719, B.M.A. House, Tavistock Square, W.C.1.

HOUSE NUCLEUS ATTACHED FOR SALE, situated in Hampshire, price inclusive, £1,300, nucleus worth about £300. Panel 138. House has 5 beds, 2 sitting rooms, consulting and waiting rooms. E.L., central heating. Garage 2 cars, ½ acre garden.—Address, No. 730, B.M.A. House, Tavistock Square W.C.1.

IN A BEAUTIFUL PART OF THE WEST OF ENGLAND, an old-established country PRACTICE of over £600 p.a., two-thirds of income from good transferable appointments and panel. Nice house and garden, all services; fishing and golf.—No. 738, B.M.A. House, Tavistock Sq., W.C.1.

LADY DOCTOR DESIRES TO PURCHASE sound PRACTICE with income £500 to £1,000 in London.—Write giving full particulars to Address, No 723, B.M.A. House, Tavistock Square, W.C.1.

LIVERPOOL SUBURB. PRIVATE AND Panel PRACTICE for sale. Old established. Panel 1,270. Income over £1,100. Non-Dispensing, easily worked. Nice house, main road, on lease, rent £65 per annum and rates. Branch Surgery, rent £32 per annum and rates. Excellent scope. Reason for disposal, vendor taking up appointment. Price, to include surgery furniture and fittings, instruments and introduction, £2,000.—Address, No. 749, B.M.A. House, Tavistock Square, W.C.1.

LONDON SUBURB PRACTICE, PANEL, 1,400 approx. Receipts over £1,400 p.a. Premium 2½ years. Purchase House with garage rent. Increasing Practice with low expenses.—Address No. 746, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL PRACTICE IN SOUTH SIDE OF Glasgow for sale. Panel approximately 265; gross income £750; house also available to sell or let. For further particulars, apply to Crawford, Herron and Cameron, Solicitors, 257, West George Street, Glasgow, C.2.

MEDICAL PRACTICE (private and panel) in excellent suburban district of South Side of Glasgow for sale. Income approximately £1,250. Panel 1,150. Good reasons for disposal; good house also to be sold with practice. For further particulars apply to CRAWFORD HERRON AND CAMERON, Solicitors, 257, West George Street, Glasgow, C.2.

MEDICAL: SMALL PRACTICE FOR SALE in agreeable district near Glasgow; good reason for disposal.—Apply, CRAWFORD HERRON AND CAMERON, Solicitors, 257, West George Street, Glasgow, C.2.

NEAR EXETER.—UNOPPOSED COUNTRY PRACTICE, income between £850 and £900. Panel and appts., £315. Medium-sized house and garden £52 p.a., rates £6. Main electricity, water and drains. Garage attached to house.—No. 717, B.M.A. House, Tavistock Sq., W.C.1

PLEASANT MIDDLE-CLASS PRACTICE Panel 760. Nice suburb Midland University City. Plenty scope growing district. Receipts average £725 for years. Good house, etc. £2,500. Reply fully.—Address, No. 643, B.M.A. H Tavistock Square, W.C.1.

WELL-ESTABLISHED MASSAGE AND ELECTROTHERAPEUTIC PRACTICE in Kent being relinquished on marriage of incumbent. Receipts over £900 and growing. Suit two partners. Capital not essential if capable and energetic. Recommended by local medical profession.—Address, No. 548. B.M.A. House. Tavistock Square, W.C.1.

W. OF ENGLAND.—COUNTRY TOWN PRACTICE. Over £1,300 a year in delightful part. Panel over 600. Cottage hospital. Good house, garden and garage for sale. Excellent surgical opening. All sports. Premium 2 years' purchase.—Address, No. 307, B.M.A. House, Tavistock Square, W.C.1.

12 MILES FROM PADDINGTON. DEVELOPING PART Old established PRACTICE. Receipts average £1,800 p.a., panel 1,700. Very nice house and garden. Rent £100 p.a. Vendor wishes to come to London. Premium open to discussion.—Apply, PEACOCK AND HADLEY, LTD., 67/68, Chandos Street, Strand, W.C.2.

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JACKET & VEST (in black or grey), £4 4s.
Lined best quality Art Satin, Art Silk or Alpaca.
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The Ideal Suit for Professional or Business wear.
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DETACHED MODERN HOUSE FOR SALE Unique opportunity for a Doctor. Key position; best part of town on high ground. Lounge hall, two reception, breakfast room, four bedrooms, bathroom, every convenience. Garage. Nice garden. Near golf. Freehold £1,500. No agents.—BRAINTREE, 9, Pettits Lane Romford, Essex

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HARLEY STREET AND DISTRICT.—A NUMBER of excellent CONSULTING ROOMS are available for full and part-time use at moderate rents. Particulars on application.—ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1 Lang 2601.

NEW CORNER HOUSE FOR SALE, EASTCOTE, Middlesex. Large developments in district. Main road. Quick access City and West End.—W. G. Estates, Field End Road, Eastcote.

PARK LANE. (MARBLE ARCH.) DENTAL practitioner has one or two CONSULTING ROOMS to let. Rent from £200 p.a., includes use of waiting-room and usual services.—Address, No. 2627, B.M.A. House, Tavistock Square, W.C.1.

QUEEN ANNE STREET, W.1. TWO attractive CONSULTING ROOMS in newly-decorated house. Waiting room, service, etc.—Welbeck 1862, or write, Box P.290, Scripps's, South Molton Street, W.1.

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SPACIOUS CONSULTING ROOMS IN THIS exclusive Square. Full cleaning service, etc.—Apply Managing Agents:—
KEITH CARDALE AND PARTNERS, LTD.,
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SLOANE SQUARE, CHELSEA.—TO LET IN private house, 2 COMMUNICATING GROUND-FLOOR ROOMS, one small, one large. £170 p.a. including light and service. Living accommodation also available if required.—No. 742 B.M.A. House, Tavistock Sq., W.C.1.

TO LET.—FULLY EQUIPPED DENTAL SURGERY, excellent light, with attendance and use of waiting room. Private Professional house, Lower Berkeley Street, now named Fitzhardinge Street, Portman Square, W.1. Can be viewed by appointment.

WHEN YOU COME TO LONDON STAY AT THE HAMPDEN RESIDENTIAL CLUB FOR GENTLEMEN, Hampden Street, N.W.1. Close King's Cross and Euston 300 bedrooms 15/- -22/6 p.w., includ. baths, attend. and boot cleaning. All meals à la carte in dining room. Mod. tariff. Large club rms., reading rm., study for students. Illus. pros., Sec. Euston 2244/5.

WIMPOLE STREET—BEST PART.—FULL TIME CONSULTING ROOM with all facilities and plate on door, £100 p.a. Another, part time, £40 p.a.—Address, No. 703, B.M.A House, Tavistock Square, W.C.1.

APPOINTMENTS.—Contd.

STIRLING DISTRICT MENTAL HOSPITAL, LARBERT.

JUNIOR ASSISTANT MEDICAL OFFICER required (male). Salary commencing at £300 per annum with board, lodging and laundry. Appointment subject to provisions of Asylums Officers' Superannuation Act. Apply, stating age and experience, with testimonials, to the Medical Superintendent.

KING GEORGE HOSPITAL, ILFORD.

Applications are invited for the appointment of HONORARY DENTAL SURGEON to this Hospital. Further particulars may be obtained from the undersigned, to whom applications should be sent not later than October 9th.
G. AUSTIN HEPWORTH,
Secretary and Superintendent.

LONDON JEWISH HOSPITAL,
Stepney Green, E.1.
General Hospital. (109 Beds.)

RESIDENT MEDICAL OFFICER AND HOUSE PHYSICIAN (male) required immediately for the period to May 31st, 1938. Salary at the rate of £150 per annum. Forms of Application may be obtained from the Secretary.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury Avenue, W.C.2.

Applications are invited for the post of HONORARY SURGEON. Candidates must hold a Fellowship, speak French and send in their applications to the Secretary of the Hospital on or before November 6th.

THE ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN,
Waterloo Road, S.E.1.

RESIDENT CASUALTY AND ORTHOPAEDIC HOUSE SURGEON.

Applications are invited from qualified male Practitioners for the post of RESIDENT CASUALTY AND ORTHOPAEDIC HOUSE SURGEON to work in the Out-Patient Department, with the care of Orthopaedic beds; vacant on October 1st, 1937, at £150 per annum. Candidates for this post should have held a previous appointment. The appointment is, in the first instance, for a period of six months. Applications, with copies of testimonials, should be forwarded not later than September 28th to the Secretary at the Hospital, from whom further particulars can be obtained.

ST. BARTHOLOMEW'S HOSPITAL.

OFFICE OF PHYSICIAN TO THE PSYCHOLOGICAL DEPARTMENT.

Notice is hereby given that a Meeting of the Election Committee will be held on Tuesday, November 2nd, 1937, at 4 o'clock in the afternoon, to elect a Physician to the Psychological Department of the Hospital.

Candidates, who must be Fellows or Members of the Royal College of Physicians of London, should have had practical experience in Psychiatry and of the management of Out-patients with Neurosis and Mental Disorder, and should be free to attend the Hospital and see Patients on three half-days a week.

Candidates are required to lodge fifty copies of their applications and testimonials with the undersigned on or before Saturday, October 16th, 1937.
THOMAS HAYES,
September 2nd, 1937. Clerk to the Governors.

THE LONDON LOCK HOSPITAL,
283, Harrow Road, W.9.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (either sex) to the Female Departments. Candidates must be doubly qualified and duly registered. The appointment is for six months, commencing October 13th. Salary at the rate of £175 p.a., with furnished rooms, full board and laundry. Preference will be given to candidates having previous obstetric experience.

Applications, enclosing copies (only) of three recent testimonials, must be in the hands of the undersigned by first post on Thursday, September 30th, and from whom a copy of the Bye-Laws relating to the appointment, or any further particulars, can be obtained.
J. F. MORTON,
September 1st, 1937. Secretary.

VICTORIA HOSPITAL FOR CHILDREN,
Tite Street, Chelsea, S.W.3.
(138 Beds.)

The Committee of Management invite applications for the post of HOUSE SURGEON for the period October 4th, 1937, to January 31st, 1938, with possibility of another appointment. Salary at the rate of £100 p.a., with board, lodging, and washing. Candidates must attend the Hospital for the purpose of an interview on Tuesday, September 28th, 1937, at 5 p.m. They must be registered under the Medical Acts. Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Monday, September 27th, 1937.
D. ST. JOHN BAMFORD,
Secretary.

ALL SAINTS' HOSPITAL (for Genito-Urinary Diseases), Austral Street, West Square, S.E.11.

RESIDENT HOUSE SURGEON (male) required on November 1st, 1937, for eight months, being five months as Junior House Surgeon, with a salary of £100 per annum, followed by three months as Senior House Surgeon, with salary of £150 per annum.

Applications, giving particulars of age, experience, qualifications, and enclosing copies of three recent testimonials, should reach me not later than October 9th.
D. H. EADE,
Secretary.

HOSPITAL OF ST. JOHN AND ST. ELIZABETH, 60, Grove End Road, N.W.8.

Applications are invited for the post of CLINICAL ASSISTANT in the X-RAY DEPARTMENT. Honorarium at the rate of £75 per annum. Applicants must have a Diploma in Radiology and experience in Diagnosis and Therapy. The Clinical Assistant will be required to attend for four sessions per week.

Applications, together with three testimonials, must reach the undersigned, from whom further particulars can be obtained, on or before Monday, October 4th, 1937.
F. DUDLEY HOBBS, B.A.,
Secretary.

METROPOLITAN BOROUGH OF SOUTHWARK.

LADY ASSISTANT MEDICAL OFFICER.

The Council invite applications from fully qualified medical women for the appointment of a whole time LADY ASSISTANT MEDICAL OFFICER.

Applicants must be under 45 years of age and possess the Diploma of Public Health. The following experience is essential, full details of which must be given in the application form:—

1. Special experience in the management and dietetics of infancy.

2. A postgraduate appointment in a hospital devoted to the treatment of children's diseases.

3. Special experience in ante-natal care and management of pregnancy.

Practical experience in artificial light therapy, Schick testing and immunization against diphtheria will be regarded as valuable additional qualifications.

The officer appointed will work under the direction and control of the Medical Officer of Health, and her principal duties will be in connexion with Maternity and Child Welfare services, but she must be prepared to undertake any other duties in connexion with the Public Health work of the Council when required to do so.

The salary is £500 per annum, rising by annual increments of £25 to a maximum of £700. The appointment may be determined by three months' notice on either side, and the successful candidate must pass the medical examination prescribed by the Council and be subject to the provisions of the Shoreditch and Other Metropolitan Borough Councils (Superannuation) Acts, 1922 to 1937. The appointment is also subject to the Council's Standing Orders, which provide that in the event of the marriage of any of the female staff, her appointment shall be terminated forthwith.

Forms of application may be obtained from me on sending a foolscap stamped addressed envelope to this office.

Applications on the official form, accompanied by copies of three recent testimonials, should be sent to me, endorsed "LADY ASSISTANT MEDICAL OFFICER," so as to reach this office not later than noon on Monday, October 4th, 1937.

Canvassing, either directly or indirectly, will disqualify.

D. T. GRIFFITHS,
Town Clerk.

Southwark Town Hall,
Walworth Road, S.E.17.
September 21st, 1937.

AMENDED ADVERTISEMENT.

COUNTY BOROUGH OF MERTHYR TYDFIL.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH and ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited from Medical Women (unmarried or widowed) under the age of forty, for the above post. The person appointed must be a registered Medical Practitioner, and registered in the Medical Register as the holder of a Diploma in Sanitary Science, Public Health, or State Medicine. Preference will be given to a candidate who:

(1) Has had at least three years' experience in the practice of her profession.

(2) Has held the appointment of Resident Medical Officer in a Maternity Department for a period of not less than six months.

(3) Has had not less than one year's continuous experience in some branch of obstetric work.

The duties will include School Medical Inspection, Supervision of Midwives, attendance at Antenatal and Infant Welfare Centres, and other Public Health duties as may from time to time be prescribed. The duties of the respective offices will be carried out under the general direction of the Medical Officer of Health.

The salary will be at the rate of £600 per annum, rising by annual increments of £25 to a maximum of £700 per annum, together with out-of-pocket travelling expenses.

Applications, together with copies of three recent testimonials, must reach the undersigned on or before October 1st, 1937.

T. H. STEPHENS,
Medical Officer of Health.

Town Hall,
Merthyr Tydfil.
September 18th, 1937.

RAUCEBY MENTAL HOSPITAL, NEAR SLEAFORD, LINCS.

Applications from Registered Medical Practitioners (male) are invited for the appointment of SENIOR ASSISTANT MEDICAL OFFICER.

Applicants must possess a qualification in Psychological Medicine and one year's experience in a General Hospital will be considered an advantage. The salary will be £550 per annum, rising by annual increments of £25 to £600, together with emoluments (new, unfurnished house, laundry, fuel, light, and vegetables) valued at £150 per annum.

The appointment is subject to the provisions of the Asylum Officers' Superannuation Act, 1909.

Applications, stating age and full particulars, with copies of three recent testimonials, to reach the Medical Superintendent not later than October 7th, 1937.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

Applications are invited for the post of HOUSE SURGEON to the Special Departments with care of beds for ear, nose and throat, eye, gynaecological and maternity cases. The appointment will be for six months from November 1st, 1937, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 per annum, with board, residence and laundry. Candidates (male) who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Wednesday, October 6th, 1937.

J. A. BEARDSALL,
Secretary-Superintendent.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, WIGAN. (180 Beds.)

Wanted for two
1st, 1937, RESID
OFFICER and
have held previous Resident appointments at a Hospital. Preference will be given to those possessing the F.R.C.S. or M.S. Degree. The salary is at the rate of £250 per annum, with board, residence and laundry. Applications, giving proof of registration and not more than three testimonials, to be sent to the undersigned as soon as possible.

A. STANLEY BRUNT,
General Superintendent and Secretary.

BURSLEM HAYWOOD AND TUNSTALL WAR MEMO
TUNSTALL,
(66 Beds.

Applications are invited for the post of JUNIOR RESIDENT HOUSE PHYSICIAN. Salary £150 per annum, with board, residence and laundry. The appointment is for six months in the first instance, reappointment may be applied for.

Applications, stating age and experience, with copies of three testimonials, to be sent to the undersigned immediately.

C. E. LOWNDES,
Secretary.

SMEDLEY'S HYDROPATHIC ESTABLISHMENT, MATLOCK.

HOUSE PHYSICIAN, male, unmarried and fully qualified, required. Salary at the rate of £200 per annum, with residence, board and laundry. Appointment for 12 months; renewable if suitable, with view to permanency with good prospects. Previous experience in resident Hospital appointment preferred. Duties include attendance at local hydropathic Hospital. Applications, stating qualifications, experience, age and nationality, together with copies of three recent testimonials, to be sent to Dr. Harbinson, Smedley's Hydro., Matlock, before October 31st, 1937.

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, London, W.9.

HOUSE PHYSICIAN REQUIRED NOVEMBER 1st.

Applications are invited for this post. The salary is at the rate of £100 p.a., and the appointment is for six months. Applications, accompanied by copies of three recent testimonials, should reach me by October 13th.

The accommodation at the Hospital does not permit of women graduates holding this appointment.

H. W. BURLEIGH,
Secretary and General Superintendent.

SAINT MARY'S HOSPITAL FOR WOMEN AND CHILDREN, PLAISTOW, E.13.

Applications are invited for the posts of RESIDENT SURGICAL OFFICER and RESIDENT HOUSE PHYSICIAN (vacant November 1st), male or female. The appointments are for six months and will expire on April 30th. Board and residence are provided. Salaries at the rate of £155 and £150 per annum respectively, including £5 allowance for laundry. Personal canvassing not desired.

Applications, with copies of three recent testimonials, to be sent to the undersigned not later than October 5th.

A. ERNEST WILKES,
Secretary.

WINGFIELD-MORRIS ORTHOPAEDIC HOSPITAL, HEADINGTON, OXFORD.

RESIDENT HOUSE SURGEON (male) required. Salary £100 per annum. Duties to commence November 1st, 1937.

Applications, with testimonials, should be sent to the Secretary, Commander J. T. Henderson, R.N. (Ret.), before October 15th.

ST. PAUL'S EYE HOSPITAL, OLDHALL STREET, LIVERPOOL.

HOUSE SURGEON required November 1st. Six months' appointment. Salary £145 per annum, board, residence, etc.

Applications, with copies of testimonials, should be sent to the Secretary, on or before October 16th.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL.

SURGICAL REGISTRARS.

The Committee invite applications for the appointments of THREE REGISTRARS (Male) as from November 1st. Candidates who have obtained the F.R.C.S.(Eng.) will be preferred. Honorarium £105 per annum. The appointments are for twelve months, renewable for a further twelve months on the recommendation of the Medical Board. Applications, with copies of three recent testimonials, should reach the Secretary, 234, Great Portland Street, London, W.1, not later than October 12th.

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16 S. MIDLANDS.—PARTNERSHIP (with succession in three years) in old-established Practice in good town. Receipts, 1936, £1,433. Panel about 900. Visits 5/- upwards, medicine extra. Premium one-half share (including one-half share of fittings, drugs, etc., etc.), £1,400.

17 CHANNEL ISLANDS.—Well-established mixed-class PRACTICE averaging nearly £1,250 p.a. No midwifery. Good house (6 bedrooms, etc.), in best residential part, for sale or rent. Good introduction. Premium £2,000. Hospital.

18 S. WALES.—Old-established PRACTICE, £765 p.a., in country district near coast. Appointments worth nearly £100 p.a. and panel about 360. Specially built house (5 bedrooms, etc.), with garage and garden, for sale. Very good prospects of increase. Prem. one and a-half years' purchase.

19 NEW ZEALAND.—S. ISLAND.—Old-established PRACTICE in prosperous coast town. Receipts average £1,450 p.a. Appointments about £450. Suitable house (3 bedrooms) for sale. Also interest in X-ray plant. Surgery on lease. Rent 30/- per week Premium £1,250.

20 S. MIDLANDS.—Old-established PRACTICE averaging over £1,060 p.a. in rapidly growing and prosperous market town. Panel 1,318. Choice of houses. Ample scope. Premium two years' purchase.

21 EASTERN COUNTIES.—PARTNERSHIP in good middle-class Practice, £2,450 p.a., in county town Panel 1,200. Good house (5 bedrooms), in perfect condition, to rent. Premium one-half share two years' purchase.

22 S. MIDLANDS.—PARTNERSHIP in Practice nearly £6,000 p.a., in residential country district. Panel about 3,000. Visits 3/6 to £1 1s. House, with garage and garden, to rent. Share worth £800—£1,000 p.a. at two and a-quarter years' purchase. Short preliminary Assistantship.

23 NORTHERN IRELAND.—Middle and working-class PRACTICE, over £900 p.a., in suburb of important seaport. Panel nearly 1,200. Visits 2/6 to 10/-, without medicine. Well-situated house (5 bedrooms), garage, etc., to rent. Scope for increase. Premium £1,400.

24 S. MIDLANDS.—PARTNERSHIP in steadily increasing Practice, £2,500 p.a., in good town. Panel 1,846. Good house (3 bed and dressing rooms), to rent. Partner should be aged about 35, experienced in gynaecology, and preferably hold the F.R.C.S. or M.C.O.G. Premium one-third share two years' purchase.

25 N.E. COAST.—Old-established and easily worked middle-class PRACTICE, over £1,150 p.a., in seaport town. No panel. Residence facing sea, for sale. Premium (to include furnishings and fittings of consulting rooms, small X-ray plant, etc.), £1,000.

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Practices and Partnerships for Disposal (continued).

26 LONDON, N.W.—Increasing PRACTICE in growing district, 30 minutes from Piccadilly. Receipts last year, £764 (new appointment value £40 p.a. not included). Panel 560. No midwifery. Semi-detached double-fronted freehold corner residence (4 bedrooms), garage and garden, for sale. Scope. Premium £1,450.

27 KENT AND SUSSEX BORDER.—Old-established and steadily increasing PRACTICE in beautiful country district. Cash receipts, 1936, £628. Panel over 500. House (4 bedrooms, etc.), garage and good garden, main drainage, etc., to rent. Scope. Premium two years' purchase.

28 ISLE OF WIGHT.—PARTNERSHIP in well-established middle-class Practice of nearly £2,650 p.a. Panel 1,200. Visits 3/6 to £1 1s., medicine extra. House with 4 bedrooms, etc., garage and garden. Good society and sport of all kinds. Premium one-half share two years' purchase.

29 N.E. COAST.—PARTNERSHIP (after preliminary Assistantship) in mixed Practice, about £3,300 p.a., in seaport town. Panel 2,600. A suitable house could be obtained. One-third share at first to suitable man at two years' purchase (or near offer), with option to increase to two-fifths in three years and to four-ninths later.

30 LONDON, W.1.—DEATH VACANCY.—SPECIAL PRACTICE in SKIN DISEASES. Cash receipts year ended 31st March, 1937, £1,815. Consultations two and three guineas. Accommodation for professional and residential purposes, if required, to rent

31 S.E. COAST.—PARTNERSHIP in old-established Practice, averaging £4,100 p.a. in growing resort. Panel 3,000. Modern corner house (3 bedrooms, etc.) for sale or to rent. Premium for one-fourth share, two years' purchase.

32 ISLE OF WIGHT.—Well-established PRACTICE about £1,200 in seaside resort. Panel over 725. Good corner house (5 bedrooms) with central heating, garage and small garden for sale or rent. Good scope. Premium £2,250.

33 LONDON, E.—Old-established PRACTICE of £1,793 p.a. in populous district. Panel 2,500. House (6 bedrooms, etc.), to rent. Premium two years' purchase.

34 S. OF ENGLAND.—PHYSIO-THERAPY PRACTICE of £1,000 p.a. in an important town. Fees, 10/6 to £1 1s. Premium £1,250 (including certain equipment).

35 E. ANGLIA.—PARTNERSHIP in an old-established Practice of £2,800/£2,900 p.a. in prosperous country district. Panel 1,530. Double-fronted house (6 bedrooms), garage and garden. Freehold for sale or to rent. Premium for one-third share one and three-quarter years' purchase.

36 LONDON, E.—Middle-class PRACTICE of over £2,400 p.a., in outlying district. Panel 2,870. House in good repair. Garage and garden. Freehold for sale. Premium two and one-quarter years.

37 W. OF ENGLAND.—PARTNERSHIP in old-established Practice of £6,600 p.a. in a beautiful country district. Panel 4,500 and appointments worth £1,325 p.a. Centrally situated house (5 bedrooms), for sale. Premium for one-fifth share, £2,750.

38 MIDDLESEX.—PARTNERSHIP (with preliminary Assistantship) in a steadily increasing Practice in a very good residential district on the Thames. Cash receipts, 1935, £4,844; 1936, £5,465; 1937, £6,264. Panel 2,700 and appointments £727 p.a. Premium for one-fifth share two and a half years' purchase.

39 LONDON, S.E.—PRACTICE of about £500 p.a. Panel 533. House with surgery accommodation to rent, or rooms next door. Premium one year's purchase, or offer.

40 W. OF ENGLAND.—Country PRACTICE doing about £1,400 p.a., in picturesquely situated village. Panel over 600. Good stone-built slate roof house (4 bedrooms, dressing-room, etc.), garage and charming garden, about ½ acre, for sale. Hunting, fishing, shooting. Premium £2,500.

41 LONDON, W.2.—Old-established PRACTICE in residential district. Receipts last year, £1,440. Panel 1,000, about. Good house to rent at £130 p.a. Premium two years' purchase.

42 MID-DEVON.—Increasing Country PRACTICE about £800 a year, in delightful part. Appointments and panel return over £350 p.a. Excellent house (6 bedrooms, dressing-room, etc.), in 1½ acres of grounds. Separate surgery accommodation. Electric light and main water. Garage and stabling. Freehold for sale. Scope. Premium £1,200.

43 LONDON, E.15.—Old-established PRACTICE averaging £1,670 p.a., in populous suburban district. Panel 1,990. Small house in excellent repair. Rent £50 p.a. Good scope. Premium two and a quarter years' purchase.

44 S. MIDLANDS.—PARTNERSHIP (short preliminary Assistantship) in Practice, over £5,000 p.a., in first-rate town. Panel nearly 5,000. House with 4 bedrooms, garage and garden, to rent. One-fifth share at first at two years' purchase.

45 S. OF ENGLAND.—PRACTICE of about £300 p.a. carried on by a medical woman in a cathedral town. Panel 100. House (2 bedrooms, etc.), to rent. Premium £500.

46 AUSTRALIA.—Old-established PRACTICE of £1,400 p.a., in agricultural township. Good house (3 bedrooms, etc.), for sale. Prem. £1,600 and £250 for X-ray plant.

47 MIDLANDS.—Old-established PRACTICE in beautiful country district. Cash Receipts last year £1,280, including appointments worth about £60, and a panel between 650 and 700. Visits 2/6 to £1 1s. without medicine. Nicely situated house (4 bedrooms, dressing-room, etc.), with nice garden and two garages. Rent about £80 p.a. Premium two years' purchase.

48 N. WALES BORDER.—PARTNERSHIP (with early succession) in old-established County Practice, about £2,500 p.a., in important town. No panel. Surgery premises could be purchased or rented. The private residence is available if required. A share up to one-half would be sold at first with early succession. Premium two years' purchase

49 LONDON, S.W.1.—SPECIAL PRACTICE for catarrhal conditions, nasal catarrh, hay fever, asthma, etc., etc., about £1,000 p.a., in commanding position in Grosvenor Place. Consultations 1-3 guineas. Special terms for series of treatments. Excellent accommodation to rent at £100 p.a., on lease. Scope. Premium one and a-half years' purchase.

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Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges
No charge is made to Principals for the introduction of Locum Tenens or Assistants.

1. HOME COUNTIES.—PROSPEROUS TOWN WITHIN 20 MILES OF LONDON.—PARTNERSHIP.—A one-third share is for disposal in an old-established non-dispensing practice. Gross cash receipts for this year at the rate of £2,000 p.a. Panel of about 1,400 (increasing). Fees 3/6 to 21/-. Ample scope. Choice of houses. Premium for share £1,250, part by instalments. Ingoing partner must be experienced and accustomed to better-class work.
2. LONDON, SOUTH-WEST.—Well-established better working-class PRACTICE, averaging about £3,500 p.a., including Panel of over 2,300 patients. Very good house on rental in excellent repair with 5 bedrooms, etc., and very good professional accommodation.
3. SOUTH-WEST LONDON.—PRACTICE has been established over 40 years and has been held by vendor (who wishes to return abroad) about ten years. Gross cash receipts for last 12 months over £900, including Panel of about 350, which could be increased. Suitable house with 5 bedrooms on rental. Moderate premium for quick sale.
4. KENT COAST.—FAVOURITE SEASIDE RESORT.—PRACTICE established 40 years and now for disposal as vendor is going abroad. Gross cash receipts average £1,921 p.a., including about £550 from Panel and £235 from Clubs. Good hospital. Vendor on staff. *Scope for increase and for some* surgery. Good freehold house available with ample accommodation. Freehold £1,200. Premium 2 years' purchase.
5. DORSET COAST.—A VERY FAVOURED LOCALITY.—PRACTICE, old-established held by vendor for 10 years and only for disposal as he wishes to devote whole time to pathology. Gross cash receipts for past year about £1,127. Selected panel of 250 patients. Fees 3/6 upwards, including medicine. Visits from 5/-. Few midwifery cases at from 3 guineas. Good house in ¾-acre for disposal, freehold. Accommodation consists of consulting room, 2 reception, 5 bedrooms and 2 attics. Good garden and garage. Premium 2 years' purchase.
6. KENT.—LARGE TOWN.—P[illegible]e) established by vendor 12 years ago now Gross cash receipts are stated to be abo[illegible] of about 800 patients. Fees, advice and me[illegible]. Midwifery from 3 guineas. House situated in a pleasant and secluded garden, contains 2 large public rooms with commodious hall and staircase, 4 large bedrooms, etc. Surgery and dispensary. *Freehold for sale or might be rented. Premium* for house and practice, £2,000.
7. WEST MIDLANDS.—PLEASANT RESIDENTIAL TOWN.—PRACTICE producing about £1,600 p.a., including a selected Panel of about 560 patients. Mostly better-class and non-dispensing. Consultations 3/6 to 10/6. Visits 5/- to 1 guinea. Freehold house for disposal, contains 3 reception, 3 large and 3 smaller bedrooms with separate servant's quarters. Excellent consulting rooms, garage for 2 cars.
8. HAMPSHIRE NUCLEUS—stated to be producing now at the rate of £5 per week and to offer considerable scope for an energetic worker.
9. COAST TOWN.—Old-established, held by Vendor past 3½ years and now for disposal as he wishes to specialise. Gross earnings for year ending 31/3/37, approximately £2,183. Panel of about 770 patients producing about £425 p.a., and appointments producing about £100 p.a. Fees 3/6 and 5/- Visits from 5/-. Good house available, freehold £1,100. Accommodation consists of consulting room, 7 bedrooms, 2 reception rooms, etc. Premium 2 years' purchase or near offer.
10. LINCS.—PRACTICE, which is practically unopposed and country, was established by the vendor about 40 years ago and now for disposal owing to ill-health. The receipts for past three years have been about £540 p.a., and there is stated to be good scope for increase as practice has been neglected. Panel of about 600 patients. Suitable house available on rental at £30 p.a., with 2 reception and 4 bedrooms, garden and garage. Premium 1½ years' purchase.
11. EAST LONDON.—Old-established PRACTICE producing about £1,800 p.a. Panel of nearly 2,600 patients. Fees 2/- to 3/-. Visits from 3/-. Midwifery, 3 to 5 guineas, about 20/30 cases yearly. *Very good house on rental at* £120 p.a. Accommodation consists of surgery, waiting room, 2 reception and 4 bedrooms, 2 maids' rooms and bathroom. Garage. Premium £3,600.
12. LONDON.—Outlying Northern Suburb.—PARTNERSHIP—A one-third share is *available in a rapidly expanding Practice. Receipts for past three* years are approximately £1,924-£2,900 and £3,550. Panel of 2,354 patients. Fees 2/6 and 3/6—visits 3/6 upwards. Midwifery about 40/50 cases per annum, minimum 4½ guineas. Considerable scope for further increase. Ingoing partner must be well experienced and have held Hospital appointments, be interested in medicine and children, and, in addition, be a good anaesthetist. Short preliminary assistantship.
13. LANCS.—High-class Seaside and Residential Town.—Easily worked old-established PRACTICE for sale. Gross cash receipts about £1,100 p.a., including a panel of about 325 patients. Fees 3/6 to 10/6. Visits 5/- to 21/-. Midwifery about 12 cases p.a. Minimum 5 guineas rising to 15 guineas. Mostly non-dispensing. Low expenses. Suitable house available with consulting and waiting rooms, 2 reception, 3 bedrooms and a maid's room and box room. Large garden and garage. Leasehold for sale or would be rented. Premium 1¾ years' purchase. There is stated to be good scope for increase for an energetic man.
14. SUSSEX.—ATTRACTIVE COUNTRY DISTRICT NEAR SEA.—PARTNERSHIP.—A one-fourth share is offered (after a preliminary assistantship) in an old-established and expanding Practice. Gross cash receipts for 1936 were about £3,300 and for the past 8½ months approximately £2,700. Panel of 1,300 patients. Appointments worth over £300 p.a. Maisonette *available or Senior partner might build new house.* Premium 2 years' purchase.
15. OPHTHALMIC PRACTICE for sale in a capital Australian City.—Gross *cash receipts approximately £2,000 (Australian).* Good consulting rooms can be rented at £180 p.a. Further details on application.
16. PHYSIO-THERAPEUTIC PRACTICE with scope for *X*-ray work in large town. ONE HALF SHARE available. Receipts over £2,000 p.a.
17. WEST END PRACTICE.—Death Vacancy—Skins—Genito-Urinary—V.D., Electro-Therapy, etc. Gross cash receipts for past 12 months about £1,815. Fees 2 and 3 guineas. Suitable accommodation available. Premium by arrangement.
18. NORTH-WEST COAST.—Well-established PRACTICE, with seaside town and country work, producing £1,299, including panel and appointments *worth about £400 p.a. Suitable house with 3 bedrooms, etc., garden, garage.* Rent £50 p.a. Sport of all kinds. Premium only £1,250 for quick sale.
19. SOUTH COAST.—PARTNERSHIP.—A ONE-HALF SHARE in good middle and upper-class practice producing about £2,550 p.a. Panel of 1,300. *Fees 3/6 to 21/-. Suitable house can be rented at £65 p.a.* Easily worked, and scope for increase. Premium 2 years' purchase
20. LONDON, S.E. 11.—Old-established working class PRACTICE producing *approximately £500 p.a.. Panel of about 500 patients.* Can be worked as lock-up. *Premium 1 year's purchase or any reasonable offer accepted.*
21. YORKS.—LARGE TOWN.—Well-established better working-class PRACTICE. Receipts for last 12 months about £1,176 with Panel of 1,150 patients approximately. Fees, minimum 2/6 with visits from 3/6 to 7/6. Freehold house for disposal at £900 containing 3 bedrooms, 2 living rooms, surgery, waiting room, etc. Vendor wishes to specialise.
22. EASTERN COUNTY AND MARKET TOWN.—HALF-SHARE PARTNERSHIP in Practice established some 100 years owing to retiral of junior partner. Average cash receipts over £2,400 p.a., of which over £700 comes from Panel and P.A.C. Suitable house available on rental. Ingoing partner should not be more than 30, preferably have a degree and some hospital experience.
23. ASSISTANTSHIP—with a view to a PARTNERSHIP SHARE to produce about £1,100 p.a., in a well-established Practice. Ingoing man must be young, have had considerable hospital experience, and preferably held an Ophthalmic H.S. He should be married or engaged, and a Protestant. Will applicants please give full details of experience, etc.
24. DEVON, *SOUTH COAST*—A well-established good-class entirely private PRACTICE producing for the past 12 months about £1,000. Panel could be had if desired. Fees 2/6, 3/6, 5/- and 7/6, with a few visits up to 21/-. Non-dispensing. Suitable house containing consulting room, 2 reception rooms, 6 bedrooms, for sale. Freehold £1,400. Partnership introduction. Would be suitable for ex-I.M.S. or similar.
25. DEVELOPING NORTHERN SUBURB.—A 3/8TH SHARE is offered in a well-established and growing Practice. Receipts for 12 months to 1/4/37 amounted to about £5,200, including about £80 from appointments and a Panel of some 5,300 patients. There is a choice of houses available.
26. LANCS.—SUBURB OF LARGE TOWN.—PRACTICE established for 10 years—gross cash receipts for year ended 31/3/37 amounted to about £800, with an increasing Panel of some 470 patients. Fees 2/6 and 3/6, with visits 3/6 and 5/-. Suitable house with good accommodation and separate surgery available on lease at £60 p.a. Premium £1,100, plus good debts, drugs and surgery equipment at valuation. Vendor giving up owing to ill-health.
27. LONDON, E.2.—Lock-up PRACTICE *established 80 years for disposal.* Income about £800-£900 p.a., with Panel of about 1,150 patients. Fees 2/6 and 3/6. Visits from 3/6. Suitable accommodation available consisting of consulting room, dispensary, waiting room, the remainder being sub-let for £280 p.a. Rent and rates £230 p.a. Premium 2 years' purchase to include about £150 fittings, fixtures, drugs, etc.
28. CITY PRACTICE.—Lock-up, hours 10-1 and 5.30-6.30, producing about £1,000 p.a., including £200 from Panel and appointments. Suitable accommodation available.
29. BAYSWATER.—PRACTICE, established some 65 years for disposal. Gross receipts about £1,440 p.a., with 1,000 Panel patients. Suitable house on lease at £130 p.a. Premium 2 years' purchase.
30. SURGICAL OPENING.—WITHIN 50 MILES OF LONDON.—A £1,000 share is offered to a FIFTH PARTNER in an old-established Practice. The patients comprise all classes and there is little visiting done under 10/6. Ingoing partner would do all surgery, but must be prepared to do ordinary G.P. as well. Choice of houses. Applicants must be 28-40, preferably hold a degree and must have their English Fellowship. *Premium 2 years' purchase.*
31. LONDON, S.W.—Old-established PRACTICE producing £1,500 p.a., with panel of 1,266 patients for disposal [illegible] club bring in about £85 p.a. House available [illegible]ommodation, reception room and 3 bedrooms an[illegible] For sale or might be rented. Premium £3,000.
32. HAMPSHIRE.—COUNTRY PRACTICE.—Old-established PRACTICE held by vendor for past 7 years. Gross cash receipts stated to average £740 p.a. *Panel of 472. Appointments* worth about £130 p.a. Fees 3/6 upwards. Pleasant house containing 2 reception, 5 bedrooms, etc., Professional accommodation. Good garden and garage. Rent £55 p.a. Prem. £1,250.
33. SUSSEX.—VILLAGE PRACTICE NEAR COAST.—Well-established PRACTICE producing about £800 p.a., and capable of increase, attractively situated within five miles of favourite seaside resort. Very nice house, with ¾ acre of garden, in excellent repair. Price for Practice and house, £3,100 or house might be rented for a short period.
34. EASTERN COUNTIES.—Mixed-class PRACTICE in pleasant agricultural district producing for last twelve months over £1,300 p.a. Fees *3/6 to 21/-. Nice* house in good position with 2 reception, 4 bedrooms, dressing room, etc. Separate professional accommodation. Modern conveniences. Garden garage. Price for freehold £1,300. Sport of all kinds and schools within reach.

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